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Artificial Intelligence to Support Human Learning in Improving Outcomes in Digital Era: Technological Literacy for Learning

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Abstract

This paper discussed the efforts of artificial intelligence to support learning towards improving high-quality outcomes through proving the results of field studies. The author believes that learning in the era of modern technology is appropriate for educators, especially teachers, to better adapt to technological developments, especially in the field of Artificial Intelligence, so that learning can be carried out with the help of technology. For this reason, the author has searched for data on this discussion from relevant and valid literature sources to answer hypotheses and problems. We have thoroughly reviewed this study with secondary data considering that this study is to gain an understanding that requires scientific evidence from previous studies. So that the data we have collected can be summarized as valid study answers, we try to examine it first. We carry out a phenomenological approach to get answers from several existing data that we analyze, code, and understand to get valid data findings. As a qualitative study, we also design the results of this study as a qualitative descriptive report with previous literature reviews, especially in the field of Artificial Intelligence and learning with human learning in the era of all computers. So based on our goal, we conclude that artificial intelligence technology is a learning method that helps achieve maximum and effective results. We admit that this technology cannot assess the role of teachers because technology does help humans achieve optimal learning outcomes by the results of the technology that was designed. Hopefully, these results are helpful in many learning contexts.

Keywords
artificial intelligence; learning outcome; digital time

I. Introduction

Artificial Intelligence is intelligence that is embedded in a system that can be managed in a scientific context. It can also be called artificial Intelligence or shortened to AI, defined as the Intelligence of scientific entities. Today's technological innovations have become an undeniable part of the previous era (Zawacki-Richter et al., 2019; Putra & Aslan, 2020; Putra, Mizani, et al., 2020; Putra, Liriwati, et al., 2020). Innovation has changed the way individuals live and the way we work, learn and communicate. Different advancements keep appearing, doing our practice and work more feasible and exciting. One of the innovations that have recently received attention is Artificial Intelligence (Das et al., 2015). This innovation is vital in working with different job skills, considering training and teaching areas (Paranjape et al., 2019). Referring to history, the term Artificial Intelligence (AI) was first introduced in 1956 by John McCarty (Warwick, 2013).

According to John McCarthy, Artificial Intelligence or artificial reasoning is a course that shows the machines of human reasoning and planning so that they can act like people or, in other words, mental tasks. In particular, machines can develop naturally from modified information and data (Sutton, 2020). In education, AI can play a role in multiple perspectives, as SEAMEO Director Ethel Agnes points out. He accepts that AI can work with the performance of educators, especially in managerial matters, for example, determining the final score based on the severity of the evaluation. Artificial Intelligence can also make it easier for instructors to carry out KBM and other learning exercises. Artificial consciousness is remembered to have choices to help individuals learn better and accomplish more concrete informational objectives. So it is not the same old thing these days; numerous AI-based improvements and jumps are being executed to help advancing encounters become more realistic and suitable (Monett et al., 2020).

Artificial Intelligence or computerized reasoning is the method involved with displaying human reasoning and planning machines so that they can act like people or another term called mental effort. To be more specific, the way machines can naturally advance from customized information and data (Lamy et al., 2019). Artificial awareness can also be described as Artificial knowledge, or AI is one part of software engineering that allows machines to handle responsibilities like humans. Many apps have done artificial brain power as a benefit of this app. Examples of uses that we often use rely on artificial intelligence, such as real-time video/music, web crawlers, selfie highlights on cellphones, Global Positioning Systems (GPS), Video Games, and Social Media (Mohanty & Vyas, 2018).

For example, a video/music application in real-time, intentionally or not, when we access a web-based video/music, will display a recording/rundown of music that we will see live (Das et al., 2015). This technology shows things that are often accessed in the web-based electronic world. If we often play fingerstyle, the rundown provided by the site will display a recording/music rundown, especially with web search tools. By incorporating this motto, the web search tool will show the time to get to the site/sites displayed at the highest point of the query list. The selfie element can display a superior image and give the impression of "goodness" with a channel that contrasts with the first shot. Likewise, GPS can only provide the most scalable navigation options to reach users' destinations. At the same time, computer games apply artificial brain power to provide different levels of difficulty in the game.

Social media is an example of a relatively recent development of information technology (Marbun *et al*, 2020). Online social media such as Facebook, IG, or others offers something we often access or search for. This is solved with the help of artificial reasoning. These are applications based on artificial intelligence to replace human roles for specific tasks (Goldenberg & Salcudean, 2019). His obligations are likewise frequently used to help learn at school and for a free review. Afterward, the learning activities will apply more electronic thinking. Artificial reasoning can present learning materials, direct assessment, and give learning input. Next are a few instances of applying fake intellectual prowess to help learn. Artificial consciousness has been broadly applied to different instructive innovation stages, particularly those based on the web, like virtual guides. Simulated Intelligence can give input on understudy learning exercises, practice questions, and proposals for material that should be re-concentrated like an instructor or coach.

One of the educational application models is Blackboard, an application widely used in universities in Europe and America. Applications are widely used by teachers/speakers to distribute notes, school assignments, tests, and tests that enable students to seek clarification on urgent problems and assignments (Mujalli et al., 2022). Applications can

also be used for assessment/evaluation. This application can recognize the purpose of the assumption error and the setting of student propositions that have been submitted by the teacher and modified previously. This AI framework will study and update data freely according to the terms and conditions are seen by students. Artificial brain power for voice partners bears some resemblance to virtual tutors. However, Voice Assistant relies more on voice capabilities as a medium for collaboration and correspondence (Mouakket & Bettayeb, 2015). Using computerized reasoning for innovative substance capabilities is critical to automatically offering and discovering advanced books and substance materials more effectively and quickly. Common examples of the use of this innovation are traced in various computerized libraries today, both in schools, colleges, and public libraries.

Computerized reasoning can find and order the books we are searching for rapidly and in an organized manner. The educator will be given book suggestions and other substances applied to what we are searching for. Instances of insightful substance innovation that have been utilized are Cram101, which breaks computerized course books into explicit parts (Linsen et al., 2018). So the book can comprise section outlines and tests, and its helpfulness permits clients to track down more specific data as indicated by their necessities. Like the program for an assessment, artificial Intelligence is broadly utilized for programmed web-based evaluation and question remedy purposes. Utilizing highlights like this makes it simpler for educators and mentors to plan and lead tests and tests effectively and for all intents and purposes. Instructors and coaches never again need to make questions and proper inquiries physically (Maher & Pu, 2014).

The AI framework will work freely as indicated by customized directions and can get the hang of as per the client's or alternately understudy's propensities. Indeed, even AI will suggest material that should be concentrated once more, and others have given the outcomes (Krishnamoorthy & Rajeev, 2018). One illustration of the use of Automatic Assessment is the test creation and programmed adjustment highlights given by the Kejarcita stage. This component permits instructors to make test tests rapidly. Educators have to pick the subject, level, number of inquiries, level of trouble, and a few different choices. Subsequently, the educator has to share the test connection with the understudies to do it straightforwardly on the web. Customized learning that uses the utilization of this innovation is very average. Customized Learning looks similar to different instances of AI innovation. This AI innovation permits understudies or clients to get administrations like individual colleagues (Straub, 2020).

Artificial Intelligence will collect information from learning exercises by users such as students and teachers and then provide elective learning arrangements according to educational needs. Artificial Intelligence will also provide content proposals and inform users of review plans and other fundamental capabilities. Artificial Intelligence will look for ways to advance the client's realization so that the evolving experience can be better and more feasible (Santos, 2019). So, based on facts and scientific evidence of the depth of AI in helping learning achieve optimal results, this study would like to explore further the understanding of the advantages of AI in accelerating the achievement of learning outcomes in an era where technology has become an innovation achievement and a solution to every human challenge, both in the world of work and education (Baker, 2021).

II. Research Method

The paper will explain the procedures and stages of conducting a study to implement intelligence activities in supporting learning efforts to improve outcomes in the digital era. Our data search is carried out on applications in the form of books, journal publications, newspapers, and all content related to the theme of this study. After data collection, it is continued by studying to get answers that answer the question, which is a valid findings (Longo, 2019).

In analyzing to get answers, this study applies several stages such as coding data, analyzing, evaluating, and interpreting so that the findings can accurately answer questions with validity (Yang & Siau, 2018). This study entirely relies on secondary data from completed publications from national and international journals, all related to artificial intelligence issues that have supported human learning or education. We found data by electronic searching on several data sources that we did qualitatively considering that this study is a study to gain an understanding of something phenomenal, namely the phenomenal meaning of intelligence stories in supporting the achievement of learning outcomes in the digital era. Thus, we described the stages of carrying out the study that we started from efforts to formulate problems and hypotheses, followed by obtaining data and analysis we finally reported (Blease et al., 2019).

III. Results and Discussion

3.1 AI Drives Learning Outcomes Interactivity

AI calculations can foresee results, empowering them to give explicit substance in light of past student execution and learning objectives. For instance, students who show a specific expertise hole will be bound to get content suggestions that can assist with expanding their insight into that expertise. Another circumstance can likewise happen when the framework sees somebody who can avoid specific modules to get other, more specific substances (Amershi et al., 2019). In the realm of innovation, the term or articulation applies: "Nothing Impossible, Impossible is Nothing." Artificial Intelligence (AI) is the most well-known conversation material discussed in innovation and business circles. The explanation is that AI is a "machine" that can do different things that require knowledge when people do it. This AI motor can comprehend human language typically, perceive faces in photographs, drive a vehicle, or think about what book we could like given the books we have perused previously. As opposed to manufacturing plant robots that persistently do dull things, for example, bundling an item, AI increases the likelihood of finishing a responsibility after learning through experimentation (Ma et al., 2014).

3.2 Dispensing Learning Assets to Significant Results

Students get online assets that match their necessities to fill holes and accomplish learning objectives. All things being equal, understudies rapidly get the data they need because web-based preparing assets are tailor-made for their own and proficient objectives (Panesar, 2019). Likewise, L&D administrators and care staff invest less energy breaking down measurements and reports to zero in on creating unrivaled learning content. With AI, the framework handles Big Data so the L&D group can invest significant additional investment on additional essential undertakings. Booked and robotized content arrangement to refined innovation that can do more like AI is amusingly still used to do the quite difficult work, yet it means a lot to slice time to zero in on other, more extensive exercises. Utilizing AI, the learning stage can plan tasks or convey learning assets in light

of the consequences of every understudy's singular evaluation or reenactment. It can establish a learning climate that permits it to naturally foresee the learning map for every understudy signed up for a class, and we can transform it when required (Abdeldayem & Aldulaimi, 2020).

3.3 Computer-Based Artificial Intelligence

Computer-based Intelligence requires constant information infusion to be more successful. Consider AI a student: the more information it gets, the more intelligent it gets, so little errands like finishing customized learning and robotizing managerial undertakings will turn out to be more assertive because AI has been in the learning stage for quite a while (Goldenberg & Salcudean, 2019). To plan AI that will assist with customizing learning, it is essential to open AI to a few factors used to finish jobs, utilizing different information. Some AI frameworks make their undertakings after recognizing the reason for the information they get. For instance, in a learning setting, the viability of the auto-labeling capability relies on how reliably the information stream is streaming and fit to be perused. Auto-labeling tunes in for content resources and comprehends different catchphrases to create various labels that assist with order and search without doing it physically, so administrators and understudies do not require much chance to transfer content. When a piece of content is refreshed, AI slithers that piece of content and updates its labels depending on the situation (Gero, 2012).

This is very useful when applied to learning in a workplace, where understudies look for replies to direct inquiries when they are generally required. Take, for instance, a movement salesman: somebody in a vehicle or at the air terminal, and there is a significant solicitation from a potential purchaser concerning the specialized parts of the item. Over the long haul, the more AI makes labels, which can likewise be changed physically, the more powerful their capabilities become, empowering patterns of constant improvement in the background of learning stages without human mediation (Azizi, 2020).

3.4 AI Making Customized Learning Genuine

Customized learning implies giving students some control, giving them a method for overseeing how they progress during the educational experience. By utilizing AI, the educator's learning is still up in the air; however, the actual understudies set the heading of their learning (Chassignol et al., 2018). Computer-based Intelligence gathers information to decide a student's information on specific expertise, then makes a developing learning way that understudies can follow. Simulated Intelligence not just improves the learning stage; it is additionally receptive to student needs by adjusting to student requests (Kannan & Munday, 2018).

3.5 AI for Students Learning Progress

Aside from wellbeing, training is one of the significant regions impacted by mechanical improvements—for instance, HarukaEdu, an electronic learning startup or e-learning in Indonesia. In the traditional schooling period a long time back, for instance, distance learning was challenging. However, presently, HarukaEdu has become one of the evidence of how distance learning should be possible. What about abroad? China has even distributed an AI manual for secondary school understudies. The Chinese government intends to coordinate AI in essential and auxiliary training. In Singapore, International Business Machines (IBM) additionally featured the utilization of AI by each instructive foundation, particularly in expecting the computerized economy (Verma et al., 2021).

3.6 Simulated Artificial Intelligence in Education Result

The utilization of AI in schooling expects to make accomplices for understudies. For instance, PC Assisted Instruction (CSI) is a PC that goes about as a mentor to convey illustration content, give activities, and check understudy learning progress (Murphy, 2019). CSI takes different structures, which might be a game contingent upon the engineer of the example and the creator's expertise. Other than CSI, there is likewise the Intelligent Tutoring System (ITS) which has comparative advantages. Marginally unique, the Expert System is made to have the option to respond to questions and give guidance as per its insight base - for instance, MACSYMA, which is utilized to tackle math errands. Indeed, even now, numerous colleges on the planet have utilized Blackboard Learn. Speakers utilize this internet-based stage to deliver address notes, tasks and schoolwork, tests, and even tests for understudies. Then again, understudies can likewise pose inquiries about address materials, task subtleties, and the evaluation instrument through a similar stage. Cool once more, Blackboard can likewise distinguish the reasons for hardships in understanding talk material experienced by students (Carpio Cañada et al., 2015).

3.7 Artificial Intelligence in Digital Days

Artificial Intelligence is about perceiving how the human cerebrum functions and how people learn. In light of Computer Science, this wise framework essentially applies human knowledge to machines and robots (Yawalkar, 2019). Given the ongoing events, numerous researchers accept that in 2021 there will be a blast of new advances of which AI is a section. They even accept that robots could be more astute than people by 2040. Fostering knowledge that equivalents or even surpass human abilities requires multidisciplinary inclusion. Besides Computer Science, AI likewise depends on Psychology, Biology, Engineering, Mathematics, and Linguistics (Zhao et al., 2021).

3.8 AI Development in Education Practices

As an understudy, how would we prepare for the long periods of state-of-the-art innovation, as referenced prior? Fundamentally, the 12-year mandatory schooling we go through establishes the knowledge development and advancement prior to entering advanced Education (Masters, 2019). This introductory instruction period is best for us to perceive our capacities, vital interests, and decisive reasoning. This period is likewise a significant time where we can foster the capacity to take care of issues. Thus, do not be quickly deterred or even bothered with learning materials that occasionally feel weighty. It is not without reason that we are 'compelled' to meet High Order Thinking Skills (HOTS) materials and questions. Is it safe to say that we will be less brilliant with machines tomorrow (Jerome et al., 2017).

3.9 Artificial Intelligence Achieves Results

Advancing as a course of communication among understudies and teachers and learning assets in a learning climate requires effective learning techniques. Determining the proper technique causes understudies not to feel exhausted or exhausted while partaking in educating and learning exercises in the homeroom. Including understudies through intuitive exercises, conversations, questions and replies, and mechanical help outfitted with artificial consciousness (AI) expand scholarly accomplishment contrasted with traditional education and educational experiences (Hekler et al., 2019). The end is achieved by dissecting an example set of exploration on dynamic learning in schools where understudies are posed numerous inquiries by AI that welcomes them to think, so they become dynamic.

Nedra Yannier, a brain research teacher and human-PC connection at HCII Carnegie Mellon University, expressed interest in dynamic learning developed when the Covid-19 pandemic provoked instructors to track down better approaches to draw in students (Mozer et al., 2021)."Schools and instructors are integrating innovations to adjust, while understudies face the negative mental impacts of segregation, tension, and mindlessness brought about by isolation and distance learning. As indicated by Yannier, the Covid-19 pandemic has clarified that conventional ways to deal with instruction are not the most effective way to learn. The following inquiry is about how to make a dynamic discovery and energizes understudies? In a paper entitled Active learning: 'Involved' meets 'minds-on' distributed in the diary Science, Yannier and his partner Ken Koedinger, a teacher of human-PC communication and HCII brain research, recommend that a functioning learning approach can be compelling and appealing during a pandemic (Huang & Rust, 2018).

People needed to see what we gained from instructing and picking up during Covid-19 and what it could carry into the homeroom," Coronavirus is compelling teachers to draw in understudies in new ways and educators to explore different avenues regarding new advancements. Gathered examinations show that dynamic learning places understudies in the "driver's seat" in their subjects. Dynamic learning procedures urge understudies to produce considerations and help input through intuitive settings (Laird et al., 2017). Dynamic learning and expanding actual work likewise support the development of thoughts. This is not similar to the regular learning model with other long stretches of concentration; however, less comes with improved results. The contribution of AI in the review alludes to the consequences of exploration by Scott Hudson, a teacher at HCII. It utilizes an AI-based virtual partner to address understudies. This urges them to think fundamentally and try to reach out (Timms, 2016).

Specialists directed a controlled trial to perceive how much kids realized when they interfaced with NoRILLA, a blended reality learning stage where youngsters lead and decipher simple tests with customized intelligent criticism. In exploring different avenues regarding the assistance of media or other intelligent actual gear, understudies are posed by enacted and deactivated computerized reasoning. At the point when crippled, incidentally, understudies learn considerably less effectively. "We have done a ton of exploration around this (Laird & Rosenbloom, 2017). If we do not have AI direction, kids cannot grasp the fundamental ideas, and learning does not mean this present reality. Yannier et al., (2020) said their review clarifies dynamic learning approaches and how to explore them. They trust their paper will move instructors to incorporate more dynamic learning.

3.10 Artificial Intelligence as Learning Media

Age Z, the computerized local age, is the age brought into the world between 1996 and 2009 or when innovation was accessible in our lives (Dewi et al., 2018). The z-age is likewise called the advanced locals age due to their capacity and availability to utilize mechanical gadgets. Sacconi et al., (2013) states that computerized locals can involve innovation as commonly as relaxing. They do numerous things through innovation, like tracking down learning assets for school tasks, web-based entertainment, messing around, and only searching for web data. This is likewise upheld by the consequences of pre-perceptions led by analysts who viewed that 96.1% of 203 students matured 13-15 years in Badung Regency, Bali, expressed their status and closeness to utilizing innovation in their regular routines (Putra et al., 2020).

As per the comprehension of 21st-century learning capacities, innovation plays a vital part in the education and educational experience (Amini & Mohaghegh, 2019). This is quite difficult for the present educators. Educators should have the option to answer these difficulties by having the option to comprehend and give innovation-based learning media to suit the requirements and interests of age z understudies. One innovation that is accepted to have a phenomenal future expected in the realm of training is artificial consciousness innovation. A few examinations have been done on artificial brainpower in training. There are a few sorts of computerized reasoning applied in the realm of training, one of which is the double educator study hall. Double educator homeroom is going on where two educators are in the study hall, the general class educator and the artificial reasoning-based educator (Van Vaerenbergh & Pérez-Suay, 2022).

Artificial brainpower-based instructors are entrusted with helping the education and educational experience. As opposed to traditional educators, artificial brainpower-based educators are accepted to have the option to give help understudies in advancing productively (Hermawan, 2018). This wise framework is supposed to help educators respond to understudies' inquiries while staying zeroed in on things like believing about the training techniques to be utilized in the following class. The utilization of artificial reasoning frameworks in the growing experience is additionally accepted to build understudies' capacity to complete autonomous growing experiences. Murphy (2019) states that by involving a knowledge framework in training, understudies can complete dynamic and free learning exercises. This is as per the idea of 21st-century training, which centers around the job of understudies in learning. Due to the advantages that can be gotten, the specialists chose to involve artificial reasoning in this review (Cope et al., 2021).

IV. Conclusion

Arriving at our end, this goalkeeper will summarize the gist of the findings and discussion that we described in the results section above. We repeat that this study aims to get a deep understanding in the form of support for how artificial intelligence can accelerate student learning in the era of all-digital applications. We believe this finding is valid in answering the research problem because the findings are supported by white-and-white scientific evidence. We present the main result, namely how the meaning of the intelligence story leads learning to the organ, which is very interactive and exciting. Furthermore, we also learned how essential learning outcomes are in an all-instant era, meaning that learning must be genuinely supported by existing feelings and artificial intelligence-based computer skills.

Furthermore, we print that this artificial Intelligence indeed provides very original and dynamic payment results where students can see their learning progress. Furthermore, Intelligence in the digital era is an era that develops humans to continue to work, especially in learning. The next point is to provide the achievement of student learning outcomes leading to improvements in improving and accelerating learning outcomes. Next is an application that provides learning assistance in various ways, such as media, allowing the millennial generation to love virtual-based learning. Thus, among other things, we can briefly describe it in the hope that this study has limitations, so we need constructive feedback and criticism.

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