IMPLEMENTATION OF ARTIFICIAL INTELLIGENCE IN INCREASING THE QUALITY OF LEARNING

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Abstract:

The focus of this paper is on the implementation of Artificial Intelligence or artificial intelligence in improving the quality of learning. Artificial Intelligence is a process of modeling human thinking and designing a machine so that it can behave like a human or another term called cognitive tasks, namely how machines can learn automatically from data and information that has been programmed. The digital and dynamic nature of Artificial Intelligence also offers opportunities for user engagement that cannot be found in often out-ofdate documents or in fixed environments. Artificial Intelligence will collect data from learning activities that have been carried out by users, and then will provide alternative learning solutions that suit user needs. Artificial Intelligence has the potential to encourage and accelerate the discovery of new learning boundaries and the creation of innovative technologies in learning, this is expected to improve the quality of learning.

Keywords: *Artificial Intelligence, Quality, Learning*

INTRODUCTION

The digital era 5.0 is a concept that comes as a development from the industrial revolution 4.0 which is considered to have the potential for technology to duplicate human roles. One of the main characteristics of society 5.0 is increasingly sophisticated technology and the use of artificial intelligence. Artificial intelligence (artificial intelligence) will transform big data collected via the internet in all areas of human life (the Internet of Things) into a new order, /which will be applied to be able to help humans in various aspects of their lives by providing various convenience services through technology. Artificial Intelligence or artificial intelligence is the process of modeling human thinking and designing a machine so that it can behave like a human or another term called cognitive tasks, namely how machines can learn automatically from data and information that has been programmed. Apart from that, Artificial intelligence can also be interpreted as part of technology that makes machines (computers) able to do jobs like those done by humans.

By using Artificial Intelligence directly or indirectly, we have implemented technology in our daily life. Many applications already use artificial intelligence as an advantage of these applications. Examples of applications that we often use based on artificial intelligence such as video/music streaming, search engines, selfie features on smartphones, Global Positioning System (GPS), Video Games, Social Media. In the era of technology 5.0 learning activities will apply more artificial intelligence. The digital and dynamic nature of artificial intelligence also creates opportunities for users to further interact with the use of technology. Artificial intelligence will collect data from more learning activities from the user, and then will offer alternative learning solutions that suit the user's needs. Artificial intelligence has the opportunity to accelerate new learning processes and create innovative technologies in learning. This is of course very instrumental in improving the quality of learning in educational institutions. This

paper uses the literature method with a focus on the application of artificial intelligence in improving the quality of learning in educational institutions.

RESULTS AND DISCUSSION

Intelligence is the ability used to understand information, solve problems, and form knowledge and awareness and create products and works. Intelligence is the perfection of the development of reason, namely the ability to solve a problem or create something of value to a particular culture. According to Daryanto (2014), intelligence is a person's ability to solve the problems faced, in this case, problems that require the ability of the mind. According to Bustomi (2012), intelligence is an ability used to understand information in forming knowledge and awareness; and intelligence as the ability to process information so that problems encountered can be solved and increase knowledge. Meanwhile, according to Gardner (2013), intelligence is a general ability that is found at various levels possessed by an individual to solve a problem. The definition of intelligence can be explained in two methods, namely quantitative intelligence is the intelligence of the learning process to solve problems that can be measured by intelligence tests, whereas qualitatively intelligence is a way of thinking in constructing how to connect and manage information from outside that is adapted to oneself. According to Desmita (2015), in general the development of intelligence consists of four stages, namely as follows:

Intelligence Quotient (IQ)

Intelligence Quotient (IQ) or intellectual intelligence describes intelligence or intelligence as the ratio between mental age (MA) and chronological age (CA). Mental age (MA) can be interpreted as brain capacity which is measured based on the average age of children who have the same standard of thinking while chronological age (CA) is the age of the child when an IQ test is carried out. In the view of IQ, a person's intelligence or intelligence is measured using a test and the results are calculated using a certain formula. The test results obtained determine the level of one's intelligence. The higher the test results obtained, the higher the intelligence level of a person, and vice versa.

Emotional Intelligence (EQ)

Emotional Intelligence (EQ) refers to the ability to recognize one's own feelings and the feelings of others, the ability to motivate oneself, and the ability to manage emotions well in oneself and relationships with others. Emotional intelligence is a development of intelligence theory popularized by Daniel Goleman. This intelligence was discovered based on the results of research on neurologists and psychologists which showed that emotional intelligence is as important as intellectual intelligence. Emotional intelligence is a person's ability to control every activity or upheaval of thoughts, feelings, passions, every overflowing mental state based on a healthy mind.

Multiple Intelligence

Multiple intelligence is an assessment that looks at descriptively how individuals use their intelligence to solve problems and produce things. This approach is a tool to see how the human mind operates the world, both concrete and abstract things.

With the development of technology comes a new term artificial intelligence, where artificial intelligence is included in the category of artificial intelligence which is applied to machines or Human Artificial Intelligence tools. Artificial Intelligence can be interpreted as skills in overcoming human problems, learning efforts, taste, imagination, emotion, creativity, and courage. Furthermore, to overcome the various problems above, the experts returned to related fields, such as philosophy, psychology, linguistics, and neuroscience (neuroscience) and of course computer science itself. This, gave birth to the field of interdisciplinary cognitive science. The purpose of duplicating the human brain will never be realized through any advanced technology,

incl artificial intelligence technology.

Human technology can only imitate a small part of the work of the human brain.This would be more useful and better than nothing because our ultimate goal in making artificial intelligence is not to emulate the human brain, but simply just to be a human tool in living his life. Next, that will happen with intelligence technology. Research and development of artificial intelligence techniques will continue and all sub-aspects will become more sophisticated and advanced. New software techniques will begin to unfold. Software development tools (software tools) that are more advanced and facilitate the development of expert systems and other artificial intelligence programs.

The concept of scientific integration is increasingly advanced. The concept of scientific integration will occur in the development of artificial intelligence technology in the future. Collaboration techniques between sub-sectors of artificial intelligence technology can form an integrated advanced system that will become material for future development of artificial intelligence. There will be more and more sophisticated technology as a form of implementing scientific integration, with intelligent systems to address a wider range of information in dealing with more complex problems. The role of artificial intelligence used to support learning, both at school and for self-learning. In the future learning activities will apply more artificial intelligence, artificial intelligence can be used to convey learning material, conduct assessments, provide learning feedback. The following are some examples of the application of artificial intelligence to support learning.

With the development of technology comes a new term artificial intelligence, where artificial intelligence is included in the category of artificial intelligence that is applied to machines or tools of artificial intelligence. Artificial Intelligence can be interpreted as skills in overcoming human problems, learning efforts, taste, imagination, emotion, creativity, and courage. Furthermore, to overcome the various problems above, the experts returned to related fields, such as philosophy, psychology, linguistics, and neuroscience (neuroscience) and of course computer science itself. This, gave birth to the field of interdisciplinary cognitive science. The purpose of duplicating the human brain will never be realized through any advanced technology, incl artificial intelligence technology.

Intelligent Tutoring System (ITS)

Intelligent Tutoring System (ITS) or commonly known as Intelligent Computer Aided Instruction is a system for providing teaching that can adapt to students' abilities. ITS is one of the developments of expert systems in artificial intelligence in the field of learning. For example: Intelligent Tutoring System (ITS) Based on Augmented Reality (AR) for Dimensional Geometry Materials, Intelligent Tutoring System for studying the laws of Nun Sukun or Tanwin, Intelligent Tutoring System (ITS) for circle learning for class VIII SMP, and various other ITS.

Virtual Mentors

Artificial intelligence has now been widely applied to various educational technology platforms, especially online-based ones, such as virtual mentors. AI can provide feedback from students' learning activities and practice questions, providing recommendations for material that needs to be studied again like a teacher or tutor.

Voice Assistant

The application of artificial intelligence to voice assistants is similar to a virtual mentor. It's just that Voice Assistant relies more on voice functions as a center for interaction and communication. Voice Assistant is also one of the most widely known AI technologies and is used in various fields, including learning. Examples of voice assistants that are commonly known are Google Assistant (Google), Siri (Apple), and others. Voice Assistant allows students to search for material, reference questions, articles, to books by simply speaking or mentioning keywords. Several current Edutech

platforms have also adopted Voice Assistant technology to help students find content and materials more quickly and practically.

Smart Content

The application of artificial intelligence to smart content functions to share and find digital content material and 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.

Auto Assessment

At present, artificial intelligence is widely used for online automated assessment and correction purposes. The use of features like this makes it easier for teachers and tutors to prepare and hold quizzes and tests easily and practically. Teachers and tutors no longer need to make questions and correct questions manually

Personalized Learning

The application of this technology is quite common. Personalized Learning actually bears similarities to other examples of AI technology. In essence, this AI technology allows students or users to get services like personal assistants. AI will collect data from learning activities that have been carried out by users, and then will provide alternative learning solutions that suit user needs. AI will also provide content recommendations, notify users' study schedules, and various other important functions. AI will learn to optimize user learning methods so that the learning process can be better and more effective. An example of implementing Perzonalized Learning is what has been implemented by Khan Academy (https://www.khanacademy.org/), Duolingo (https://www.duolingo.com/), Ruanguru (https://www.ruangguru. com/) , and others.

Educational Games

Marc Prensky (2012), 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 educational experiences or learning experiences to the players of these games. that are educationally loaded.

Furthermore, there are 5 main roles of artificial intelligence in education, namely; 1) Personalization of Education, Artificial Intelligence helps find out what students do and don't know, building a personalized study schedule for each learner taking into account the knowledge space. Artificial intelligence will adapt learning according to the special needs of learners, increasing learner efficiency. 2) produce intelligent content, 3) Contribute To Task Automation Simplification of administrative tasks: assessing, assessing and answering students is a time-consuming activity that teachers can optimize using artificial intelligence 4) do tutoring, utilizing artificial intelligence will save time for tutors and teachers in carrying out guidance. 5) Ensure access to education for students with special needs, adopt innovative artificial intelligence technology, open up new ways to help students who have learning disabilities, especially students who have special needs such as children with hearing, visual impairments and others.

From the discussion above, it shows that the use of artificial intelligence to support learning is very necessary, especially in the technological era 5.0. And it must be realized that the use of artificial intelligence in learning is a must, besides that it is very important that the ability of teachers and students in the field of informatics technology must also be improved so that the use of artificial intelligence gives a new nuance in the learning process which will have a positive effect on the quality of learning in schools.

CONCLUSION

Artificial Intelligence (Artificial Intelligence) is part of technological developments that seek to apply from a small part of the work of the human brain, the purpose of this artificial intelligence is to help humans in various aspects of their lives. In the learning process, the application of artificial intelligence has become a necessity, especially in dealing with the development of the digital 5.0 era. Collaboration between existing learning systems and supported by the application of artificial intelligence will make the learning process in educational institutions of higher quality.

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