

THE INFLUNCE OF USING AI ON STUDENTS` CRITICAL THINKING ABILITIES

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ABSTRAK

Berpikir kritis merupakan suatu proses berpikir intelektual dimana si pemikir menggunakan pemikiran yang reflektif, mandiri, jernih dan rasional. Berpikir kritis mencakup keterampilan dalam menafsirkan, menilai pengamatan, informasi dan argumentasi. Berpikir kritis mendorong seseorang untuk mampu membandingkan, mengklasifikasikan, memberikan alasan, membuat rencana atau hal-hal lain dalam aktivitas sehari-hari yang memerlukannya. Penelitian ini menggunakan metode penelitian kualitatif dengan mengumpulkan data observasi, wawancara, kuesioner dan dokumentasi. Perkembangan teknologi menjadi landasan munculnya Artificial Intelligence (AI) sebagai sebuah konsep dan teknologi yang revolusioner. Kemampuan teknologi dalam memproses data secara efisien dan menyelesaikan masalah dengan cepat menjadi pendorong utama kemajuan AI. Pemanfaatan AI tidak hanya terbatas pada satu sektor saja, namun sudah merambah ke berbagai sektor antara lain kesehatan, pendidikan, keuangan, industri, dan masih banyak lagi. Kesimpulannya, meskipun AI telah menjadi bagian integral dalam kehidupan akademis, terdapat faktor lain yang memengaruhi kemampuan berpikir kritis siswa. Pendekatan yang bijaksana dalam mengintegrasikan teknologi AI dalam pembelajaran dan memberikan

penekanan kuat pada pengembangan keterampilan berpikir kritis sangat penting dalam mengatasi potensi dampak penggunaan AI yang berlebihan dalam pembelajaran.

Kata Kunci: berpikir kritis, AI ,teknologi.

ABSTRACT

Critical thinking is an intellectual thinking process where the thinker uses reflective, independent, clear and rational thinking. Critical thinking includes skills in interpreting, assessing observations, information and argumentation. Critical thinking encourages an individual to be able to compare, classify, give reasons, make plans or other things in daily activities that require it. This research uses qualitative research methods by collecting observation data, interviews, questionnaires and documentation. Technological developments have become the basis for the emergence of Artificial Intelligence (AI) as a revolutionary concept and technology. Technology's ability to process data efficiently and solve problems quickly has become the main driver for AI progress. The use of AI is not limited to one sector, but has penetrated various sectors including health, education, finance, industry, and many more. In conclusion, while AI has become an integral part of academic life, there are other factors that influence students' ability to think critically. A thoughtful approach in integrating AI technology in learning and placing a strong emphasis on developing critical thinking skills is essential in addressing the potential impact of excessive AI use in learning.

Keywords: critical thinking, AI, technology

INTRODUCTION

Technological developments that have developed rapidly in human life in everyday life, especially for students such as university students, technological advances are very beneficial and helpful in finding things. Increasingly advanced technological developments have given rise to the latest technology which is usually called Artificial Intelligence (AI). Artificial Intelligence is a concept where machines/electronics are equipped with the ability to perform tasks that usually require human intelligence. AI appears in various forms such as virtual assistants, data analyzers, complex prediction makers and other things that facilitate and replace human intelligence. The existence of AI brings great potential to improve efficiency, productivity and quality of human life. However, along with these benefits, there are also challenges related to ethics, privacy and security that need to be carefully considered in implementing this technology.

Current technological developments are inversely proportional to the aim of technological development which should make it easier for humans in their daily lives, but in reality it actually causes many things that should not happen, such as students being lazy to think critically because they think everything can be solved using AI. Other examples include the role of humans being replaced by machines, thus creating unemployment in certain job sectors that should be human and ultimately replaced by machines. The rapidly increasing dependence on the use of technology today is also one of the negative impacts of technology because it can give rise to mental health problems such as internet addiction and make people anti-social or reduce interactions with others in society or the surrounding community.

With the emergence of these problems, it is something we need to be careful about because if we look at it from an academic perspective, the AI used by students can be misused in creating scientific works so that it can be said to violate digital ethics. Apart from that, it can interfere with the development of students' critical reasoning and creativity in compiling scientific work. So it is necessary to strengthen students regarding the advantages and disadvantages of AI itself, so that its use is within reasonable limits and does not violate digital ethics.

Especially when we look at human resources or students who are not wise and are not balanced with knowledge in technology, it can interfere with students' critical thinking in solving problems.

Critical thinking is an intellectual thinking process where the thinker uses reflective, independent, clear and rational thinking. Critical thinking includes skills in interpreting, assessing observations, information and argumentation. Critical thinking encourages an individual to be able to compare, classify, give reasons, make plans or other things in daily activities that require it. Critical thinking requires continuous efforts to analyze and examine beliefs, knowledge held, and conclusions made, using supporting evidence. Critical thinking is influenced by 4 factors in the form of interpretation or interpreting, analysis or examination, evaluation or assessment and conference or finding solutions.

RESEARCH METHODS

This research uses qualitative research methods by collecting observation data, interviews and questionnaires.

1. Observation

Observation is a process where researchers observe an object or situation that will be studied. In this study, researchers observed several students of Tadris Mathematics UIN K.H Abdurrahman Wahid Pekalongan in carrying out assignments both individually and in groups.

2. Interview

Interviews are the process of researchers interviewing subjects who will be observed by asking several questions that can support their research. In this research, researchers conducted interviews with several Tadris Mathematics students at UIN K.H Abdurrahman Wahid Pekalongan.

3. Questionnaire

questionnaire is a process where the researcher creates several questions in online form such as Google form and then distributes them to the subject. In this research, researchers created 10 questions on Google form in the form of selected answers and then short answers, then distributed them to Tadris Matematics student at UIN KH.ABDURRAHMAN WAHID PEKALONGAN via the WhatsApp application.

DISCUSSION

Based on the results of the questionnaire conducted, there are several significant findings regarding the influence of the use of AI on students' critical thinking:

The majority of respondents indicated that they use AI technology in their learning, especially through search engines and virtual assistants. However, some respondents also stated that they tend to rely on AI to complete academic tasks. Although most respondents admitted to frequently using critical thinking skills, there was a small group who indicated that they rarely used these skills. This may indicate variability in the use of critical thinking skills among students.

Most respondents stated that the use of AI technology did not significantly affect their ability to think critically. However, there were several respondents who admitted that they tend to become less active in critical thinking because they depend on AI technology. A number of respondents expressed concern about the potential that excessive use of AI could make them lazy in their thinking. They acknowledge that reliance on AI can reduce motivation to think critically and independently.

From the conclusions of the results of this questionnaire, it appears that there is a real concern regarding the potential for excessive use of AI in learning, which could reduce students' motivation to think critically. Therefore, it is important for educational institutions and lecturers to closely monitor the use of AI technology in learning and ensure that students are directed to develop strong critical thinking skills. This conclusion highlights the potential impact of excessive use of AI in learning, which can trigger lazy tendencies in students' thinking. This emphasizes the importance of a thoughtful approach in integrating AI technology in learning and placing a strong emphasis on developing critical thinking skills.

Technological developments have become the basis for the emergence of Artificial Intelligence (AI) as a revolutionary concept and technology. Technology's ability to process data efficiently and solve problems quickly has become the main driver for AI progress. The use of AI is not limited to one sector,

but has penetrated various sectors including health, education, finance, industry, and many more.

In the healthcare sector, for example, AI is used to quickly and accurately analyze massive medical data, aiding in disease diagnosis, designing personalized treatment plans, and even predicting an individual's potential illnesses or health risks. In education, AI has been utilized to create adaptive learning platforms, provide personalized feedback, and provide learning resources tailored to each student's needs and learning style. The use of AI in various sectors has increased efficiency in carrying out tasks that previously required a lot of time and effort. For example, in the manufacturing industry, the use of AI-based robotics has enabled production processes to become more efficient and automated, resulting in products of better quality and lower costs.

The advancement of AI has expanded the scope of its use to various aspects of daily life, from virtual assistants that help us carry out daily tasks to smart home automation technology that increases comfort and security at home. With continued progress, it is expected that AI will have an increasingly greater role in changing and enriching various aspects of human life in the future. Thus, technological developments have paved the way for the emergence of AI, and its increasingly widespread use in various sectors has increased efficiency and made a significant impact in various aspects of human life. Most students have been actively involved in adopting and utilizing advances in AI technology in their academic lives. This phenomenon is not surprising considering the rapid development of AI and the availability of various tools and platforms that facilitate students' access to this technology. One of the main ways in which students utilize AI is as a tool for finding answers or solutions to various tasks and problems they face. With AI's ability to process and analyze information quickly, students can easily find answers to the questions they face in their studies. For example, they can use AI search engines to find relevant reference sources, answer complex questions, or perform tasks that require data analysis.

Apart from that, AI is also used as a solution to solve complex problems. Students are often faced with assignments that require creative thinking and complex problem solving. With the help of AI, they can use algorithms and machine

learning techniques to analyze data, make predictions, or discover patterns that may be difficult to detect manually. This allows students to complete their assignments more efficiently and accurately.

Some students may feel compelled to use AI due to the tight time demands of completing academic assignments. In a competitive environment, students are often faced with tight deadlines in completing assignments or exams. In situations like this, the use of AI can be an attractive solution as it can help them complete these tasks quickly and efficiently. The results of the questionnaire that have been processed show that the influence of Artificial Intelligence (AI) technology on students' critical thinking abilities is not completely dominant. Even though AI has become an integral part of academic life, there are many other factors that influence students' ability to think more critically even when using AI in carrying out assignments, namely:

1. Demands from the university, such as the use of Turnitin to check the authenticity of assignments. Even though students can use AI in their assignments, they still have to ensure that the results of their work are the result of their own thinking and analysis. The requirement to produce original work can encourage students to carry out deeper filtering and analysis of the material they work on, thereby strengthening their critical thinking abilities.
2. Demands for detail from lecturers who require students to explain their answers in detail using their own language can also be a factor that influences students' ability to think more critically. Even though students can use AI to help them find answers, they still need to be able to explain the concepts in a way that they understand themselves. This allows students to deepen their understanding of the material studied and improve their critical thinking skills.
3. Demands for additional reading sources or references. In some cases, lecturers also require students to include reading sources or references that support their thinking. This encourages students to conduct more in-depth research and consider different points of view, thereby improving their ability to think critically. Even though AI can help in finding references or reading sources, students' ability to select and assess the usefulness of this information is still important in developing critical thinking skills.

Apart from the factors above, AI also has several significant impacts on students, both positive and negative.

A. Positive impacts include:

1. Have precision and accuracy in doing what you do. This technology is set to help make human work easier, including students. Work will be more flexible and time consuming. short one. Everything students ask will be answered in it.
2. Replace repetitive and routine human tasks. Not only is he flexible, AI can be a student assistant who can work repeatedly and continuously. Students don't need to bother looking to do it.
3. Can be used at any time and for a long period of time. Also has no time limit. Students can use it at any time even for long periods of time. This is interesting data for AL
4. Cheaper By using AI, students do not need to pay money to complete it. AI really knows the ins and outs of the problems he faces. Because AI is designed the same as humans.
5. Can do work faster and better. Using AI will shorten the time spent doing something. Students will have more free time because of AI's ease in doing work.

B. Negative impacts include:

1. Makes students much lazier than before because the features offered make it very easy for students to complete their college work. Students will easily underestimate the work given.
2. Artificial Intelligence (AI) does not have Common Sense, AI is able to learn and work on its own like a human, but AI cannot understand the purpose for which the information was made. Because comprehensive understanding can only be had by humans. Even though he is designed like a human, AI also has shortcomings.
3. AI is still lagging behind in processing information that is vertical and requires complex sense. Behind the convenience offered, AI

It is still technology that basically still requires time for such information.

4. Student literacy will decrease because they don't have to bother reading journals or books. AI has an attraction that makes students' attention prefer the easy way rather than having to read references

5. Using AI for a long time can potentially lead to addiction. Just like online games, AI does the same. If using. too long, then a person can become addicted. (Sulistia, 2023).

CONCLUSION

The use of AI in education is prevalent, with students utilizing it for finding answers and solving complex problems. However, there is variability in the use of critical thinking skills among students. While most students stated that AI does not significantly affect their critical thinking ability, some admitted to becoming less active in critical thinking due to reliance on AI. This raises concerns about the potential for excessive AI use to reduce students' motivation to think critically.

Educational institutions must closely monitor the use of AI technology in learning and ensure that students are directed to develop strong critical thinking skills. The impact of excessive AI use in learning can lead to lazy thinking tendencies, emphasizing the importance of a thoughtful approach in integrating AI technology in learning.

The advancement of AI has expanded its use to various sectors, including healthcare, education, finance, and industry. AI has increased efficiency in carrying out tasks and made a significant impact in various aspects of human life. Students actively utilize AI in their academic lives, using it as a tool for finding answers or solutions to various tasks and problems.

However, the influence of AI technology on students' critical thinking abilities is not completely dominant. Demands from universities, such as the use of Turnitin to check the authenticity of assignments, and detailed explanations required by lecturers can encourage students to strengthen their critical thinking abilities. Additionally, the requirement for additional reading sources or references can improve students' ability to think critically.

In conclusion, while AI has become an integral part of academic life, there are other factors that influence students' ability to think critically. A thoughtful approach in integrating AI technology in learning and placing a strong emphasis on developing critical thinking skills is essential in addressing the potential impact of excessive AI use in learning.

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