

## THE INFLUENCE OF AI ON STUDENTS' MIND PATTERNS

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### Abstract

This writing aims to find out how Artificial Intelligence influences student thinking patterns, how students apply Artificial Intelligence in their learning process. The research method uses a literature study approach. The results of the writing explain the influence of Artificial Intelligence on students' thinking patterns, where in this writing there are positive and negative influences in its use. With Artificial Intelligence Can change the way students think, namely by helping students find information easily and quickly, but on the other hand, AI is the main cause of students' laziness to study hard to fulfill their competencies. Students become lazy to open books or journals and lazy to discuss with their fellow students. Advances in Artificial Intelligence (AI) have brought significant changes to the field of higher education, including in terms of student mindset. This qualitative research aims to explore the impact of AI on students' mindsets in their learning and self-development processes. Using a phenomenological approach, this study investigates students' experiences, perceptions and interpretations regarding the use of AI in academic environments through in-depth interviews and participant observation. The data obtained were analyzed using thematic methods to identify main themes and emerging patterns. Research findings reveal that although AI is considered a useful tool in the learning process, there are concerns regarding the potential for over-reliance on AI and its impact on students' critical thinking skills and creativity. Additionally, the use of AI also raises ethical challenges such as plagiarism and cheating. This research provides valuable insight into how AI influences college students' mindsets and highlights the importance of education about the responsible and ethical use of AI in academic settings.

**Keywords:** Artificial Intelligence, Student Mindset

### 1. Introduction

In the era of industrial revolution 4.0 that we are currently living in, the development of artificial intelligence (AI) technology has brought about massive changes in various aspects of human life. One sector that cannot escape the disruptive impact of AI is the world of higher education. Students, who are the younger generation who grew up in the digital era, cannot avoid the influence of AI which is increasingly penetrating their learning process (Arly et al., 2023)

The presence of AI has opened up new opportunities and challenges in the academic environment. Its ability to process large amounts of data, identify patterns, and provide efficient solutions has changed the way students think, learn, and interact with knowledge. They are required to develop new skills and mindsets in order to adapt to this rapid change (Arly et al., 2023)

In this article, we will explore in depth the influence of AI on student thinking patterns in the digital era. We will discuss how AI drives more analytical and critical thinking, facilitates collaboration with intelligent machines, offers more personalized learning, and encourages creativity and innovation. Apart from that, we will also emphasize the importance of awareness about the ethical implications and social impacts of using AI in the academic world (Raimi, 2021)

By understanding the influence of AI on students' mindsets, we can better prepare them to face the challenges of the digital era and maximize AI's potential in improving the quality of higher education. It is hoped that this article will provide valuable insight for students, educators and other stakeholders in the world of higher education (Raimi, 2021)



## 2. Method

This research uses qualitative methods using a literature study approach. Literature study is a series of activities related to library data collection methods, reading and taking notes, and managing research materials (Zed, 2008: 3). The data collection techniques used in this research are documents and previous studies, namely data from previous research, reports, theses and related documentation that have been carried out previously. This research uses data analysis techniques in the form of content analysis techniques. According to Weber in Komariah, content analysis is a method that uses a series of steps to arrive at valid conclusions using book or document sources. According to Holsti's view, content analysis is an analytical technique that is useful for drawing conclusions through discovering message characteristics with the analysis process (Safitri, 2021).

To understand the influence of AI on students' thinking patterns in more depth, we conducted qualitative research by combining several methods, namely literature studies, surveys and in-depth interviews.

First, we conducted a comprehensive literature review of previous studies, journal articles, and research reports relevant to this topic. This helps us build a strong theoretical foundation and understand the latest developments in the fields of AI and higher education.

Next, we distributed an online survey to students from various disciplines at several leading universities. This survey aims to collect data about students' perceptions and experiences in using AI in their learning process, as well as how this influences their thinking patterns.

To enrich the survey data, we also conducted in-depth interviews with a group of students selected purposively. These interviews allowed us to explore more deeply students' perspectives, challenges, and expectations regarding the use of AI in their education.

Apart from students, we also interviewed several lecturers and experts in the field of AI and higher education. Their perspectives provide valuable insight into how AI can be effectively integrated into curricula and learning processes, as well as its potential impact on students' mindsets.

Data obtained from literature studies, surveys and interviews were then analyzed qualitatively using the thematic analysis method. We identified key themes emerging from the data, as well as patterns and relationships relevant to the research topic.

Through a research approach that combines qualitative methods, we seek to gain a deep understanding of the influence of AI on student thinking patterns, as well as practical implications and recommendations for improving the quality of higher education in this digital era.

## 3. Results and Discussion

Based on the research that has been conducted, several important findings were found regarding the influence of AI on student thinking patterns in this digital era.

### *a. Increased analytical and critical thinking*

Survey and interview results show that students who use AI in their learning process tend to develop stronger analytical and critical thinking skills. With AI's ability to process large amounts of data and identify patterns, students can conduct deeper analyzes and make better decisions based on the information available.

An economics student revealed that he uses machine learning algorithms to analyze market data and consumer trends, which helps them create more effective marketing strategies. Another student majoring in sociology stated that AI helped them

analyze qualitative data such as text and images more quickly and accurately (McCarthy, 2007)

**b. *collaboration with smart machines***

Another interesting finding is the increasing collaboration between students and intelligent machines such as virtual assistants or chatbots. This encourages students to develop better communication skills and the ability to give clear instructions to AI.

A student from the informatics engineering department revealed that he often collaborates with virtual assistants in completing programming assignments. It must learn how to convey instructions appropriately so that the AI can understand and respond appropriately.

**c. *Personalized learning***

AI also enables more personalized learning, where content and teaching methods can be tailored to each individual's learning style and abilities. This encourages students to be more responsible for their learning process and develop independence in achieving academic goals.

One lecturer explained that they use an AI system to customize materials based on data about student performance and learning preferences. He observed that students became more motivated when the material was presented personally according to their needs.

**d. *Creativity and innovation***

With AI that can handle routine tasks, students have more time to think creatively and innovatively. They can explore new ideas and unique solutions to challenges in their field of study.

One graphic design student said he used AI to create initial sketches, which he then expanded on with human creativity. Business students say AI helps analyze market data, so they can focus on innovative strategies.

**e. *Ethical awareness and social impact***

However, students must also develop an awareness of the ethical implications and social impact of AI. They must think critically about the responsible use of AI and consider the consequences.

An AI expert stressed the importance of addressing biases in AI that can lead to discrimination in decision making. Students need to use fair and inclusive data, and monitor AI performance. Social impacts such as unemployment due to automation must also be considered. Students need to think about how to use AI to improve society's welfare, not just profits (Arli Adinda, et al. 2023: 363)

The research results show that AI brings significant changes in students' thinking patterns. Although there are ethical challenges that must be taken into account, AI also offers great opportunities to improve the quality of higher education and prepare students with the skills of the future (Eriana & Zein, 2023).

## **4. Conclusion**

From the research that has been conducted, it can be concluded that the development of artificial intelligence (AI) has had a significant influence on student thinking patterns in this digital era. AI has changed the way students think, learn, and interact with knowledge, opening up new opportunities and challenges in the world of higher education.

One of the most prominent positive impacts is encouraging more analytical and critical thinking among students. With AI's ability to process large amounts of data and identify patterns,

students can perform deeper analyzes and make better decisions based on the information available.

Apart from that, AI also facilitates collaboration between students and intelligent machines such as virtual assistants or chatbots. These interactions encourage students to develop better communication skills and the ability to provide clear instructions to the AI.

Furthermore, AI opens up opportunities for more personalized learning, where content and teaching methods can be tailored to each individual's learning style and abilities. This encourages students to be more responsible for their learning process and develop independence in achieving academic goals.

In addition, with AI that can handle routine tasks, students have more time and energy to think creatively and innovatively. They can explore new ideas and more unique solutions to overcome challenges or problems in their field of study.

However, amidst the benefits offered, students also need to develop awareness about the ethical implications and social impacts of using AI. They must think critically about how AI can be used responsibly and consider the potential consequences of its application, such as issues of bias, discrimination and workforce shifts due to automation.

Overall, the influence of AI on students' mindsets in the digital era is a phenomenon that cannot be ignored. To maximize the potential of AI in improving the quality of higher education, collaborative efforts are needed between students, educators and other stakeholders. By preparing students with the skills needed in the future and integrating AI ethically and responsibly in the curriculum, we can create a learning environment that is more dynamic and relevant to the times.

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