

The Role of Student Literacy in Guiding the Wise Use of AI

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Abstract: *The development of digital technology and artificial intelligence (AI) has brought significant changes to the field of education, particularly for university students in the digital era. This research was conducted because digital literacy and artificial intelligence have become essential skills that support the learning process in higher education. The purpose of this study is to determine the level of students' understanding and attitudes toward digital literacy and the use of AI in academic activities. The research employed a descriptive quantitative method with an online survey distributed to 30 respondents from various study programs at Telkom University Purwokerto. Data were analyzed using a percentage formula ($P = F/N \times 100\%$) to describe the respondents' tendencies for each research indicator. The results showed that students' understanding of digital literacy and AI was high, the frequency of AI usage was fairly frequent, and students' attitudes toward AI were positive with a good sense of ethics. These findings are expected to serve as a basis for higher education institutions in developing ethical digital literacy policies.*

Keywords : *Digital Literacy , Artificial Intelligence, Digital Ethics, Students, Higher Education.*

Abstrak: Perkembangan teknologi digital dan kecerdasan buatan (AI) telah membawa perubahan signifikan dalam dunia pendidikan, khususnya bagi mahasiswa di era digital. Penelitian ini dilakukan karena literasi digital dan kecerdasan buatan kini menjadi keterampilan dasar yang penting dalam mendukung proses belajar di perguruan tinggi. Tujuan penelitian ini adalah untuk mengetahui tingkat pemahaman dan sikap mahasiswa terhadap literasi digital serta penggunaan AI dalam kegiatan akademik. Metode penelitian yang digunakan adalah kuantitatif deskriptif dengan teknik survei melalui kuesioner daring yang diisi oleh 30 responden dari berbagai program studi di Universitas Telkom Purwokerto. Analisis data dilakukan menggunakan rumus persentase ($P = F/N \times 100\%$) untuk menggambarkan kecenderungan responden pada setiap indikator penelitian. Hasil penelitian menunjukkan bahwa tingkat pemahaman mahasiswa terhadap literasi digital dan AI tergolong tinggi, frekuensi penggunaan AI cukup sering, dan sikap mahasiswa terhadap AI bersifat positif dengan kesadaran etika yang baik. Hasil ini diharapkan dapat menjadi dasar bagi perguruan tinggi dalam mengembangkan kebijakan literasi digital yang beretika.

Kata kunci: Literasi Digital, Kecerdasan Buatan, Etika Digital, Mahasiswa, Perguruan Tinggi.

Introduction

The development of digital technology and artificial intelligence (AI) has had a significant impact on the world of education, particularly in increasing the efficiency of the learning process. Digital literacy is now an essential 21st-century skill that every individual, especially students, must possess. This literacy encompasses the ability to understand, use, and critically evaluate information through digital technology (Ng et al., 2020: 45). The urgency of this research lies in the increasing reliance of students on AI-based technology, yet not all have a good understanding of how to use it responsibly and ethically.

According to Tuomi (2018: 37), AI literacy is a further development of digital literacy, where individuals not only understand how to use technology but are also able to recognize the logic and potential impact of AI-based systems on social and academic life. In the context of higher education, digital literacy and AI skills are crucial assets for students facing the era of the 4.0 industrial revolution, which demands technological mastery and digital ethical integrity (UNESCO, 2022: 12).

Several previous studies have shown that digital literacy influences students' readiness to use learning technology. Kaplan and Haenlein (2019: 18) emphasize the importance of understanding AI concepts so that users act not only as technology consumers but also as intelligent, critical, and responsible users. This research reinforces the fact that digital literacy skills are not only related to technical abilities but also to the character development of technology users.

On the other hand, the ethical issue of AI use is also a significant concern in modern education. According to Holmes and Mallick (2003: 21), technological advances must be balanced with moral responsibility in their use to prevent misuse such as plagiarism or information manipulation. Therefore, AI literacy encompasses not only technical abilities but also ethical awareness in the use of digital technology. The main issue that arises is the ongoing gap between students' level of understanding of digital literacy and how they ethically apply AI in the learning process.

Based on this background and problems, this study aims to analyze the level of understanding, frequency of use, attitudes, and ethics of Telkom University Purwokerto students towards digital literacy and artificial intelligence (AI). This research is expected to contribute to the development of ethical digital literacy policies and serve as a reference in designing more effective digital learning strategies in higher education environments.

Research Method

This study used a quantitative descriptive method, which aims to describe phenomena objectively based on numerical data. This approach is appropriate for explaining social phenomena based on respondents' perceptions without testing causal relationships between variables (Sugiyono, 2015: 8). According to Creswell (2018: 121), descriptive quantitative methods are used to describe a phenomenon occurring in a specific population or group based on statistical data.

The data in this study were obtained through an online questionnaire (Google Form) distributed to 30 students from various study programs at Telkom University Purwokerto. The questionnaire instrument was structured using a Likert scale with five response categories: Strongly Agree, Agree, Neutral, Disagree, and Strongly Disagree.

Data analysis was performed using a percentage formula to determine the tendency of respondents' responses to each research indicator. The formula used is: Where:

P = Percentage

F = Frequency of Respondents' Answers

N = Number of Respondents

The analysis results are presented in tabular form and descriptive descriptions to facilitate interpretation. This method is used to assess students' level of understanding, frequency of use, attitudes, and ethics in using artificial intelligence (AI).

Results and Discussion

Respondent Overview

This study involved 30 students from Telkom University Purwokerto from various study programs, including Informatics Engineering, Information Systems, Digital Business, Software Engineering, Product Design, and Industrial Engineering. All respondents demonstrated active involvement in digital technology and artificial intelligence (AI) in their academic activities. This diverse background provides a good representation of the level of AI literacy among students in the university environment.

Pemahaman Mahasiswa terhadap Literasi Digital dan AI

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)
I understand what digital literacy means	24.1	69.0	6.9
I understand what AI literacy means	24.1	55.2	20.7
I understand the benefits of AI in education	31.0	51.7	17.2
I understand the importance of critical thinking when using AI	55.2	34.5	10.3

The majority of students demonstrated a high level of understanding of the concepts of digital literacy and AI. 93.1% of respondents understood the meaning of digital literacy, while 79.3% understood the concept of AI literacy. These results support Tuomi's (2018: 37) assertion that AI literacy is the ability to understand the basic principles and social implications of using intelligent technology. This means that Telkom University Purwokerto students are able to recognize the concepts and benefits of AI in an academic context.

Penggunaan AI oleh Mahasiswa

Statement	Very Frequently (%)	Frequently (%)	Sometimes (%)	Rarely (%)	Never (%)
I frequently use AI (ChatGPT, Copilot, etc.)	27.6	34.5	27.6	3.4	6.9
I use AI to understand course material	20.7	51.7	17.2	6.9	3.4
I use AI to find ideas/inspiration	24.1	37.9	27.6	10.3	0.0
I double-check the accuracy of information provided by AI	41.4	44.8	10.3	3.4	0.0

AI use among university students is quite high. As many as 62.1% of students use AI frequently to very frequently, particularly to understand course material (72.4%) and find inspiration for assignments (62%). However, only around 55% consistently check the accuracy of the information provided by AI. According

to Kaplan and Haenlein (2019: 18), this phenomenon indicates that AI users need to develop critical awareness to avoid being trapped by biased information generated by algorithms. These findings indicate that AI utilization is still dominated by practical aspects, while the aspect of information verification needs to be strengthened.

Sikap Mahasiswa terhadap AI

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)
AI is useful in the learning process	41.4	48.3	10.3
AI helps improve learning efficiency	48.3	41.4	10.3
AI should not be used for cheating	58.6	34.5	6.9
Campus guidelines are needed regarding the use of AI	41.4	48.3	10.3
AI should be used ethically and responsibly	65.5	31.0	3.4

Students' attitudes toward the use of AI are positive. More than 80% of respondents agree that AI contributes to learning efficiency and encourages educational innovation. However, they also recognize the importance of academic ethics, with 93% of respondents rejecting the use of AI for academic cheating. These results align with Holmes and Mallick's (2003: 21) assertion that moral responsibility is essential in the application of technology. These findings demonstrate that academic ethics awareness is well-established among students.

Etika dan Tanggung Jawab Penggunaan AI

Statement	Strongly Agree (%)	Agree (%)	Neutral (%)
I feel guilty if I copy AI results without understanding them	37.9	48.3	13.8
I edit AI results to suit my own understanding	41.4	44.8	13.8
Students should be given AI ethics training	44.8	48.3	6.9
Students who understand AI literacy are better prepared for work	48.3	44.8	6.9
Digital literacy can prevent AI misuse	44.8	44.8	10.3

The majority of students (85–90%) demonstrated good ethical awareness in the use of AI. They edited AI output before use and supported digital ethics training for students. This view is consistent with Popkewitz (1994: 9), who emphasized that professionalism in education must be grounded in moral integrity and social responsibility. This suggests that the use of AI among students is quite ethical, although a deeper understanding of the limits of use still needs to be expanded.

Overall, the results of this study indicate that students at Telkom University Purwokerto have a high level of AI literacy in terms of understanding, use, and ethics. However, critical thinking and information evaluation skills still need to be improved to ensure more optimal and responsible use of AI.

This study is limited by the relatively small number of respondents (30) and the coverage of only one institution, so the results cannot be broadly generalized. Nevertheless, this study has important implications for higher education, namely the need to improve digital literacy programs and AI ethics training among students to foster a more critical and integrated academic culture.

Conclusion

Students at Telkom University Purwokerto have a high level of understanding and positive attitudes toward digital literacy and artificial intelligence (AI). They not only understand the concept of AI but also actively utilize it in their learning activities. Awareness of the ethical use of AI is also high, although information verification still needs improvement. In general, students' AI literacy skills demonstrate readiness to face the challenges of the digital era and support the principles of innovative, critical, and responsible learning. Based on these results, it is recommended that universities continue to strengthen digital literacy programs and AI ethics training for students, lecturers, and educators. An increased understanding of the reliability of digital information and how to use technology critically also needs to be developed through an integrated curriculum and academic activities, so that students can become intelligent, ethical, and competitive technology users in the era of artificial intelligence.

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