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AN ANALYSIS OF STUDENTS' ETHICAL AWARENESS AND CRITICAL THINKING IN THE UTILIZATION OF ARTIFICIAL INTELLIGENCE

Rafiud Ilmudinulloh^{1*}, Shoffan Fatkhulloh², Puput Tri Anggara³

¹ Institut Agama Islam Negeri Manado, Manado, Sulawesi Utara, Indonesia, rafiud.ilmudinulloh@iain-manado.ac.id

² Universitas Negeri Makassar, Makassar, Sulawesi Selatan, Indonesia, shoffan.fatkhulloh@unm.ac.id

Universitas Negeri Yogyakarta, Yogyakarta, Indonesia, puputtri70@gmail.com

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Abstrak

Penelitian ini bertujuan menganalisis kesadaran etis dan daya kritis mahasiswa dalam pemanfaatan Artificial Intelligence (AI) pada konteks akademik. Latar belakang penelitian didasari oleh maraknya penggunaan AI, seperti ChatGPT, yang mempermudah mahasiswa menyelesaikan tugas tetapi sekaligus menimbulkan persoalan etika, plagiarisme digital, serta potensi melemahnya daya kritis. Penelitian menggunakan pendekatan kualitatif deskriptif dengan pengumpulan data melalui angket yang melibatkan 39 mahasiswa Fakultas Tarbiyah dan Ilmu Keguruan (FTIK) IAIN Manado. Instrumen terdiri dari 29 pernyataan mencakup kebiasaan, tujuan, kesadaran etis, plagiarisme, daya kritis, kreativitas, dan kecenderungan kemalasan intelektual. Data dianalisis secara deskriptif berbasis frekuensi dan persentase, kemudian diperdalam dengan interpretasi naratif. Hasil penelitian menunjukkan seluruh responden memanfaatkan AI, terutama untuk penulisan esai, laporan penelitian, dan presentasi. Meskipun 87,2% mahasiswa menyadari isu plagiarisme digital, 43,6% masih menyalin hasil AI tanpa parafrasa maupun sitasi, bahkan 30,8% menganggap produk AI bebas digunakan. Sebanyak 41% mengaku kesulitan menjawab pertanyaan kritis tanpa bantuan AI, dan 35,9% lebih memilih copy-paste daripada membaca literatur primer. Temuan ini menegaskan bahwa AI berperan ganda: mendukung produktivitas sekaligus berpotensi melemahkan etika akademik, daya kritis, dan kemandirian intelektual. Penelitian ini merekomendasikan penguatan literasi etis, integrasi pendidikan digital, serta

strategi pembelajaran yang mendorong keseimbangan antara pemanfaatan teknologi dan pengembangan kemampuan berpikir mandiri mahasiswa.

Kata kunci: Kecerdasan Buatan, Kesadaran Etis, Daya Kritis, Mahasiswa, Plagiarisme Digital

Abstract

This study aims to analyze students' ethical awareness and critical thinking in the utilization of Artificial Intelligence (AI) within academic contexts. The background of this research is rooted in the increasing use of AI tools, such as ChatGPT, which assist students in completing assignments but simultaneously raise issues of ethics, digital plagiarism, and the potential decline of critical thinking. This research employed a descriptive qualitative approach with data collected through questionnaires involving 39 students from the Faculty of Tarbiyah and Teacher Training at IAIN Manado. The instrument consisted of 29 questions covering habits, purposes, ethical awareness, plagiarism, critical thinking, creativity, and tendencies of intellectual laziness. Data were analyzed descriptively using frequencies and percentages, then further interpreted narratively. The findings reveal that all respondents utilized AI, particularly for essay writing, research reports, and presentations. Although 87.2% of students recognized the issue of digital plagiarism, 43.6% still copied AI outputs without paraphrasing or citation, and 30.8% considered AI-generated texts free to use. Furthermore, 41% admitted difficulties in answering critical questions without AI, while 35.9% preferred copy-paste practices over engaging with primary literature. These results highlight AI's dual role: enhancing productivity while potentially weakening academic ethics, critical thinking, and intellectual independence. The study recommends strengthening digital literacy, integrating ethical education, and adopting pedagogical strategies that balance technological use with the development of students' independent thinking skills.

Keywords: Artificial Intelligence, ethical awareness, critical thinking, students, digital plagiarism

Introduction

In recent years, the development of technologies such as Generative Artificial Intelligence (Gen AI) has progressed rapidly and extensively, accompanied by a significant increase in the number of users of Gen AI-based platforms. In Indonesia, Gen AI adoption has risen markedly from 24.5 percent to 27.34 percent, with the majority of users dominated by the Millennial and Generation Z cohorts (Aranditio, 2025). Among various sectors, education has emerged as the primary beneficiary of Gen AI advancements, particularly in supporting students' academic tasks (Holmes & Tuomi, 2022). Gen AI refers to a form of artificial intelligence capable of producing new content—such as text, images, audio, and even programming code—by leveraging large language models (LLMs) trained on massive datasets (Yusuf et al., 2024). Unlike conventional AI systems, which generally focus on analysis or classification, Gen AI is capable of generating novel information that resembles human-created work (Giannakos et al., 2025).

In the context of higher education, Gen AI is frequently utilized by students to compose essays, generate reading summaries, answer critical questions, and even assist with basic programming tasks (Chiu, 2024). For example, a student may use ChatGPT to design the framework of a research proposal, while another might employ Gemini to interpret literature written in foreign languages. These practices illustrate that Gen AI functions not only as a technical aid but also as a catalyst for enhancing critical thinking and academic efficiency (Heinsfeld & Veletsianos, 2025). However, alongside these positive potentials, emerging concerns have been raised regarding students' ethical awareness and critical judgment in their use of AI technologies (Cordero & Cordero-Castillo, 2025; Khan Monib et al., 2024; Ng et al., 2025).

Ethical awareness in the use of AI refers to students' sense of responsibility in employing technology honestly, wisely, and in accordance with academic integrity principles (Efthymiou et al., 2025). This includes the understanding that AI functions solely as an assistive tool rather than a replacement for critical thinking or original intellectual effort (Đerić et al., 2025). Students who possess ethical awareness will use AI to enrich their understanding and support their own analytical processes, rather than merely copying its outputs in full, which may lead to digital plagiarism or academic misconduct (Quince & Nikolic, 2025).

Students' critical capacity in using AI refers to their ability to evaluate, analyze, and verify AI-generated information rationally rather than accepting it at face value (Hikmawati & Mohammad, 2025; Zhou et al., 2024). This involves the skills to compare AI responses with other scholarly sources, question the validity of its arguments, and construct logically grounded conclusions (Melisa et al., 2025). Meanwhile, student creativity denotes the ability to generate new ideas, solutions, or original work by using AI as a source of inspiration rather than merely replicating its outputs.

Previous studies have shown that the use of AI in academic settings has helped students improve task efficiency, the quality of scientific writing, and access to scholarly literature, as demonstrated by Asyura (2025); Fitri (2025); Rahmah & Ramli (2025); Wiarta et al. (2025). These four studies also highlight several risks, including technological dependence, diminished critical thinking, potential plagiarism, and broader ethical challenges associated with AI use. However, although issues related to ethics and declining critical reasoning frequently emerge within their findings, none of the studies examined in a specific, systematic, and in-depth manner how students understand ethical boundaries, evaluate the reliability of AI-generated information, and sustain a critical stance in its application. These gaps become particularly relevant when considering the factual conditions observed at IAIN Manado.

This research gap forms the foundation for the present study, *"An Analysis of Students' Ethical Awareness and Critical Disposition in the Use of Artificial Intelligence (AI)"*, which seeks to address this void by focusing on the moral awareness and critical capacities of AI users in academic contexts. Such an investigation ensures that emerging technologies are not employed merely for short-term convenience but contribute to the cultivation of responsible and intellectually grounded academic character.

Research Method

This study employed a descriptive quantitative design to examine students' ethical awareness and critical thinking in the utilization of Artificial Intelligence (AI) in academic activities. The research involved 39 undergraduate students from the Faculty of Tarbiyah and Teacher Training (FTIK), IAIN Manado, who were selected using total sampling. Data were collected through a questionnaire consisting of 29 statements developed based on the research objectives. The instrument measured six dimensions, namely AI usage habits, types of academic tasks supported by AI, purposes of AI utilization, ethical awareness and plagiarism, critical thinking, and intellectual laziness. These dimensions were intended to provide a comprehensive description of students' ethical attitudes and critical responses toward AI-assisted learning.

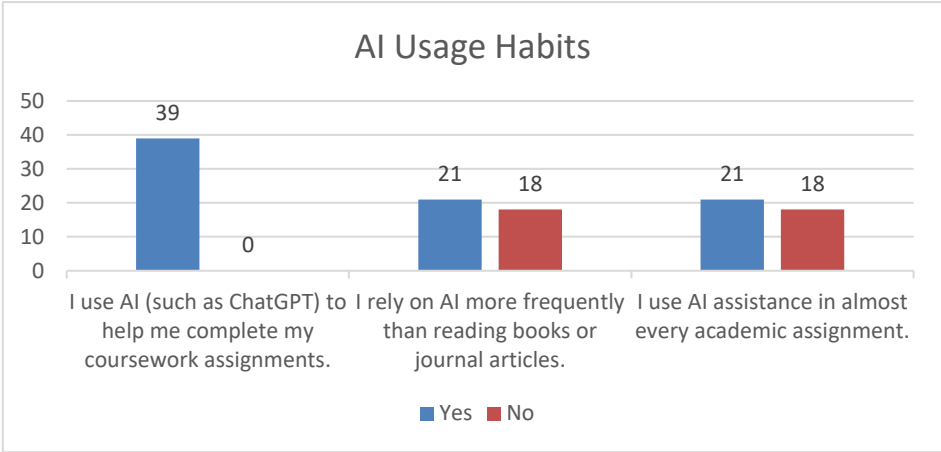
The questionnaire responses were analyzed using descriptive statistics in the form of frequencies and percentages to identify patterns of AI utilization among students. The statistical findings were subsequently interpreted narratively by relating each dimension to the research objectives, particularly in explaining students' ethical awareness in the responsible use of AI and their critical thinking tendencies when evaluating AI-generated information. Through this approach, the study was able to describe not

only the extent of AI use but also its implications for academic integrity, independent thinking, and students' learning behavior.

Result and Discussion

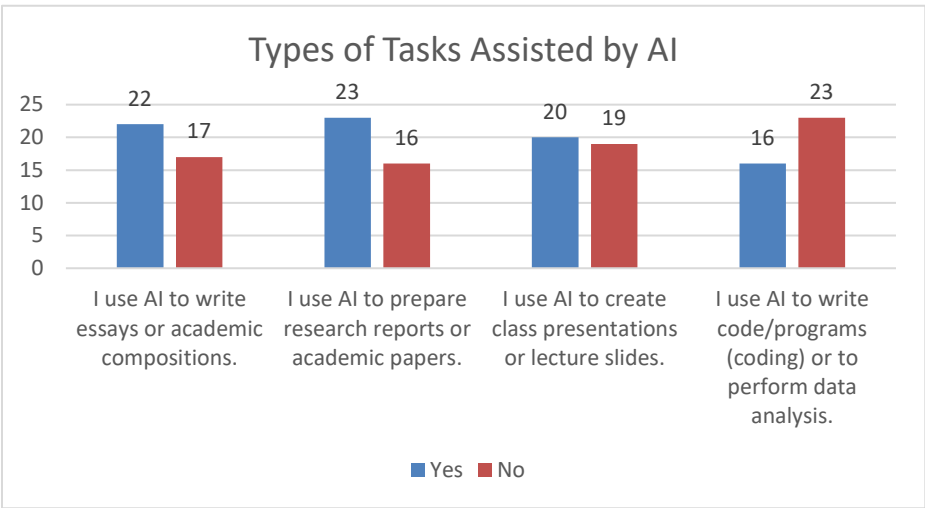
Table 1. AI Usage Habits Among Students

All 39 respondents (100%) reported using AI (such as ChatGPT and similar platforms) to complete various types of coursework. AI is most frequently utilized for writing essays or academic



papers, preparing research reports, developing presentation materials, and generating additional ideas for writing. The intensity of its use varies: some students rely on AI as a constant companion for nearly every assignment, while others use it only occasionally as a supplementary tool. There is a noticeable tendency for students to depend more on AI than on reading primary literature or scholarly journals. This indicates a shift in learning patterns—from exploring scientific sources to instant, technology-based consumption.

Table 2. Types of Task Assisted by AI

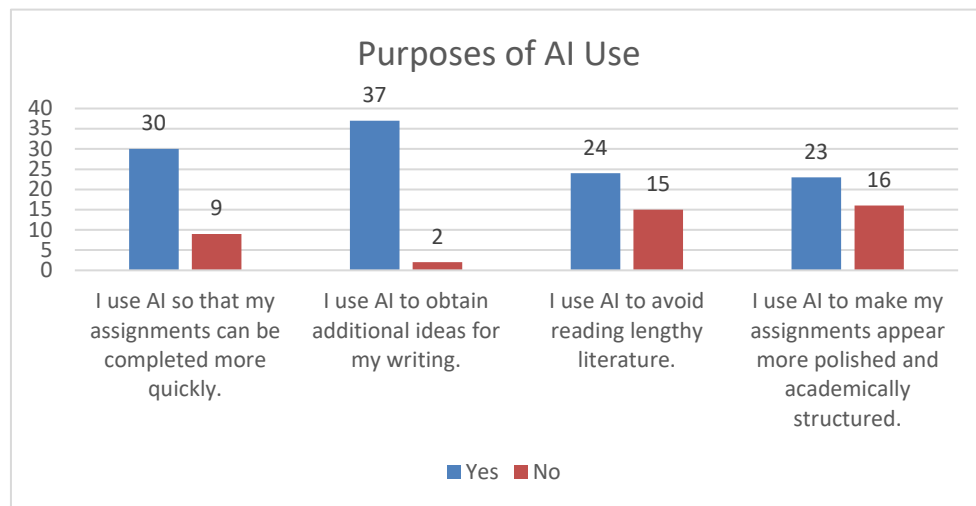


The data show that students use AI for a wide range of academic tasks. The most frequently completed tasks with AI assistance are essay and academic paper writing, followed by research reports

and the preparation of presentation materials. Some respondents also mentioned using AI to help generate initial ideas, develop writing outlines, and even draft research abstracts.

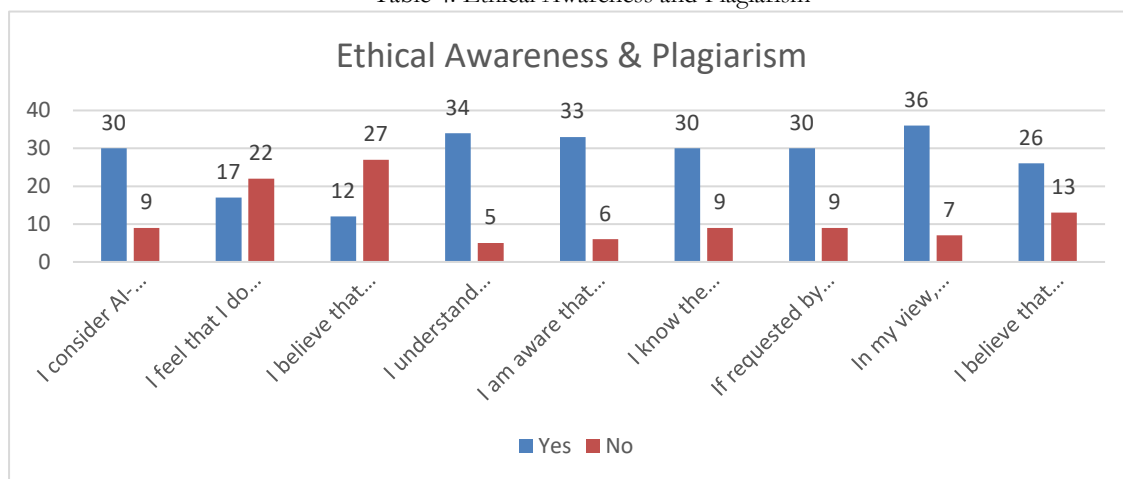
Interestingly, although some students rely on AI for nearly all types of assignments, there is variation in the intensity of its use. For example, long-form writing tasks (such as essays, papers, and reports) are more commonly produced with AI support, whereas tasks requiring deeper analysis (such as case studies or literature interpretation) are less likely to be fully delegated to AI. This suggests that students still differentiate between tasks they consider “safe” to assign to AI and those that require greater personal involvement.

Table 3. Purposes of AI Use



Overall, students' purposes for using AI can be categorized into two main forms. First, productive purposes, which include enhancing creativity, gaining new perspectives, and constructing more structured arguments. In this category, AI is treated as an idea catalyst that helps enrich learning outcomes. Second, instant purposes, such as reducing the burden of reading, saving time, or even replacing intellectual effort that should ideally be carried out independently.

Table 4. Ethical Awareness and Plagiarism

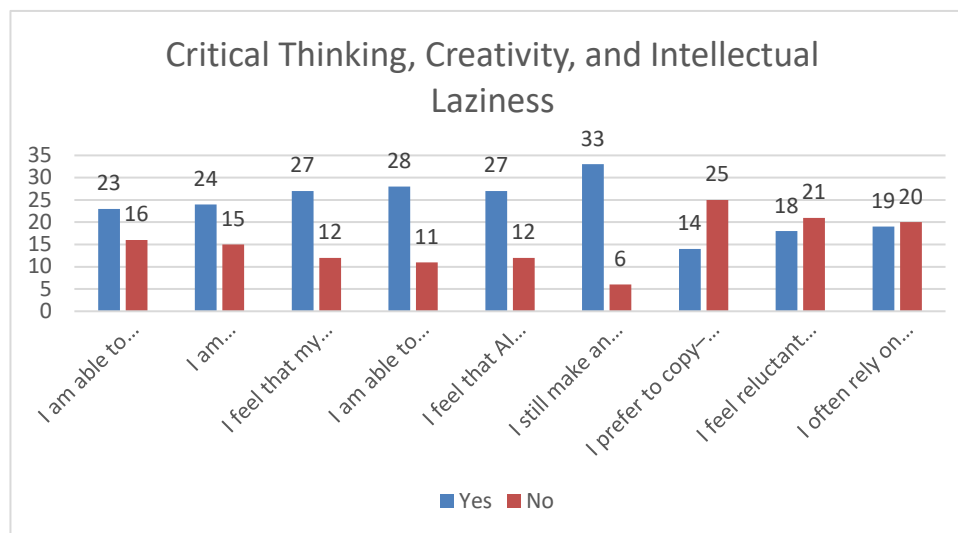


AI thus holds a dual role in students' academic activities. On the one hand, it can accelerate understanding and support creativity; on the other hand, its use has the potential to foster intellectual laziness when it is relied upon merely as a shortcut for completing assignments. Pada bagian ini, penulis menyampaikan hasil penelitiannya.

The data indicate that students already possess basic knowledge regarding the ethics of AI use, with approximately 34 students (87.2%) demonstrating awareness, particularly concerning issues of digital plagiarism. The majority of respondents understand that AI-generated text is not an original work and should not be claimed as their own, as reflected by 30 students (76.9%). However, this awareness remains largely at the cognitive level and has not been fully translated into actual practice.

A notable phenomenon is the gap between knowledge and action. A portion of students, 17 (43.6%), continue to copy AI-generated output without editing, paraphrasing, or providing attribution. Only a small number make an effort to add personal interpretation, modify the text, or use AI merely as an initial source of inspiration. From an academic perspective, this indicates that students do not yet fully understand the concept of digital plagiarism as a violation of scholarly integrity. They tend to perceive plagiarism solely as copying someone else's work, while AI-generated content is viewed as a grey area—something “authorless” and therefore freely usable—by about 12 students (30.8%).

Table 5. Critical Thinking, Creativity, and Intellectual Laziness



The data show that the use of AI in academic contexts has a direct impact on students' critical thinking abilities. A considerable portion of respondents, 16 students (41%), reported difficulty answering critical questions in class without the assistance of AI. This indicates a dependency on technology to generate ready-made responses, while analytical and argumentative skills have not been fully cultivated.

In terms of creativity, AI does help provide additional ideas, linguistic variations, and more systematic writing structures. However, the creativity that emerges tends to be derivative of the machine rather than genuine originality from the students, as indicated by around 15 respondents (38.5%). This means that while AI can serve as an idea stimulator, excessive reliance on it may blunt students' ability to independently generate new insights.

Regarding intellectual laziness, the data reveal a tendency among students to prefer copying and pasting AI-generated content rather than reading books, articles, or journals—reported by about 14

students (35.9%). This phenomenon reflects a shift in learning behavior from exploring primary sources toward instant consumption, reported by 18 students (46.2%). Although AI can improve time efficiency, this trend risks weakening academic traditions grounded in research, literature engagement, and critical reasoning. The findings of this study indicate that the use of Artificial Intelligence (AI), such as ChatGPT, has become an inevitable phenomenon in students' academic life. Almost all respondents rely on AI to complete various assignments, including essay writing, research reports, and presentations.

These findings highlight a shift in learning patterns—from the tradition of engaging with primary literature to instant, technology-based consumption. Although AI has been shown to enrich ideas and simplify academic processes, several issues emerge regarding ethics, critical thinking, creativity, and the potential for intellectual laziness.

From an ethical standpoint, the data show that 87.2% of respondents are aware of issues related to digital plagiarism, and 76.9% recognize that AI-generated text is not an original work. However, this awareness remains purely cognitive. This is evident from the fact that 43.6% of students still copy AI output verbatim without paraphrasing or providing attribution, and 30.8% consider AI-generated content a grey area that can be freely used. When examined through the lens of the revised Bloom's Taxonomy (Krathwohl & Anderson), these findings indicate that students' awareness of digital plagiarism remains at the lower cognitive levels—namely *remember* and *understand*. Their awareness has not progressed to the next stages, *apply* and *evaluate*, where ethical knowledge should be translated into actual practice through paraphrasing, citation, or the refusal to engage in plagiarism. A review based on Rest's Four-Component Model of Moral Development (1986) leads to similar conclusions. Students appear to have reached the stages of *moral sensitivity* and *moral judgment*. However, they have not advanced to *moral motivation* and *moral implementation*, where ethical understanding is transformed into concrete moral action.

In line with the study by Ali et al. (2023), students' perceptions of AI use show a positive tendency, in which they view it as an effective tool for saving time and supporting the learning process in higher education. However, the study also highlights doubts regarding the overall effectiveness of AI and emphasizes potential violations of academic integrity—such as plagiarism and academic misconduct—which necessitate clear regulations and ethical education on AI usage. Sianturi et al. (2024) underscore the role of Christian ethics in navigating AI use in education by emphasizing honesty, integrity, and balance. According to their perspective, AI can be utilized to enrich the learning process and support the development of critical thinking, but it should not replace the role of teachers or essential social interactions. Excessive reliance on AI risks weakening students' independence, creativity, and problem-solving abilities. Although AI offers significant benefits in terms of personalized learning, administrative efficiency, and educational accessibility, its use also generates serious ethical risks, including violations of student data privacy, algorithmic bias, technological access disparities, and the reduction of social interaction within the teaching–learning process (Chayati et al., 2025).

Regarding critical thinking, 41% of respondents reported difficulty answering critical questions in class without the assistance of AI. This dependency suggests a weakening of

students' analytical abilities, as they have become accustomed to relying on instant, machine-generated responses rather than constructing arguments independently. In terms of creativity, although 38.5% of respondents acknowledged that AI helps provide additional ideas, writing frameworks, or linguistic variations, the creativity that emerges tends to be derivative. In other words, students' ideas are heavily influenced by the machine rather than stemming from their own intellectual exploration, leading to the erosion of originality. Hakim et al. (2024) argue that the use of AI in Islamic Education can produce several negative effects, including the distortion of religious understanding and a decline in students' creativity. This loss of creativity is attributed to learners' tendency to rely on instant answers from AI, which ultimately hampers the processes of idea exploration, deep reasoning, and the ability to generate original insights (Abu Owda et al., 2023). As a consequence, students risk losing essential critical and imaginative thinking skills—abilities that are fundamental in religious learning, which demands reflection and contextual understanding (Nguyen et al., 2023; Triayomi & Murwanto, 2025).

Meanwhile, in the context of intellectual laziness, the data show that 35.9% of respondents prefer to copy–paste information from AI rather than read books or journals, and 46.2% have begun shifting from exploring primary sources to instant consumption. This pattern clearly indicates a shift in students' learning behavior, increasingly neglecting academic traditions grounded in research and scholarly literature. This finding aligns with Ivanov (2023) discussion of *the dark side of AI*, which argues that excessive AI use can lead to a loss of skills and intellectual laziness, as students no longer engage in scientific literacy or critical thinking. AI, which should function as a learning support tool, instead risks creating a passive generation that relies on instant answers rather than constructing research-based understanding (Faisal, 2024). Excessive dependence on AI tools to achieve academic goals can reduce critical thinking abilities (Murwanto & Triayomi, 2025), and contribute to the disappearance of traditional skills such as handwriting, memorization, and basic problem-solving in mathematics—skills that remain essential in academic settings (Basha, 2024; Vieriu & Petrea, 2025).

Alier et al. (2024) highlight that GenAI in education is not only an opportunity but also the “elephant in the room,” encompassing issues such as ethics, plagiarism, bias, privacy, and technological dependence. Education must respond not by rejecting the technology, but by redesigning pedagogy, ethics, and regulatory frameworks so that this technology genuinely supports learning (Anggi Fatmadiwi et al., 2025; García-Peñalvo et al., 2024). The use of AI in education needs to be governed by an ethical framework grounded in the values of wisdom, justice, and stewardship (wisdom, justice, stewardship) (Musengimana, 2025). The Indonesian government, through the Ministry of Education, Culture, Research, and Technology, has developed the 2024 Guidelines for the Use of Generative Artificial Intelligence (GenAI) in Higher Education. These guidelines need to be translated into concrete academic regulations across universities so that the use of AI becomes more ethical and clearly regulated (Hanjani et al., 2025).

The need for a comprehensive strategy to ensure that the implementation of AI in education is not only effective but also ethical and responsible (Revalya Nadya et al., 2025). First, the capacity of educators must be strengthened through training so that they can integrate AI effectively while still guiding students to develop critical thinking skills without becoming fully dependent on the technology (Marlin et al., 2023). Second, digital literacy and the ethics of AI use need to be reinforced within the curriculum so that students understand the limitations of the technology as well as the importance of academic integrity (Ramli, 2023). Third, the development of transparent and accountable AI systems should be prioritized, supported by regulations established through collaboration among developers, educators, and the government (Astuti et al., 2025; Ummah et al., 2025). Fourth, AI-based adaptive learning should be integrated with human interaction so that content personalization remains balanced with deeper meaning-making and understanding (Muarifin, 2024).

This study has several limitations. First, the number of respondents—limited to 30 students from a single faculty—means that the findings cannot yet be generalized to a broader student population. Second, the use of questionnaires as the primary instrument tends to produce self-reported data, which may contain subjective bias in respondents' answers. Third, the analysis employed is limited to qualitative-descriptive approaches using frequencies and percentages, and therefore has not been able to explore in depth the psychological dynamics or contextual factors that influence students' ethical awareness and critical thinking. Fourth, this study focuses on ethical awareness and critical thinking, leaving other dimensions such as the impact of AI on academic outcomes or social interaction unexplored.

Conclusion

This study found that Artificial Intelligence has become an integral part of students' academic activities, particularly in completing writing assignments, research reports, and presentations. Although most students demonstrated an awareness of ethical issues related to AI use, this awareness remained largely at the cognitive level and was not consistently reflected in responsible academic practices, as some students continued to use AI-generated content without adequate paraphrasing or citation. The findings also indicate that students' dependence on AI tends to reduce their critical engagement, as many rely on AI-generated responses rather than independently analyzing information and constructing arguments.

These findings suggest that AI should be positioned as a learning support tool rather than a substitute for students' intellectual effort. Therefore, higher education institutions need to strengthen ethical AI literacy, promote responsible academic practices, and design learning strategies that encourage critical thinking, independent reasoning, and the responsible integration of AI into the learning process.

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