



The Ethical Relationship between the Use of Artificial Intelligence in Learning and the Academic Responsibilities of Madrasah Aliyah Students

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Abstract:

This study aimed to examine the relationship between the ethics of Artificial Intelligence (AI) use and the academic responsibility of students at Madrasah Aliyah. A quantitative correlational design was employed involving 25 Grade XII students selected through proportional stratified random sampling. Data were collected using Likert-scale questionnaires measuring AI ethics and academic responsibility and analyzed using descriptive statistics, the Shapiro-Wilk normality test, and Spearman Rank correlation in JASP software. The findings revealed that students demonstrated a very high level of academic responsibility ($M = 4.57$). The Spearman correlation coefficient was 0.648 with a significance value of 0.000 ($p < 0.05$), indicating a strong positive relationship between ethical AI use and academic responsibility. AI ethics explained 42.0% of the variance in academic responsibility, while no significant difference was found between AI users and non-users. The study concludes that ethical use of AI promotes responsible academic behaviour. These findings imply the importance of integrating AI ethics education into school policies and classroom instruction to strengthen academic integrity and responsible digital learning.

INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) has fundamentally transformed educational practices across the world, including the ways students access information, complete academic assignments, and develop learning strategies (An et al., 2025; Dabis & Csáki, 2024). AI-powered applications such as ChatGPT, Gemini, Copilot, and QuillBot have become increasingly accessible, enabling learners to obtain explanations, generate ideas, summarize literature, and produce written content within seconds (Chan & Hu, 2023; Cotton et al., 2023). This technological transformation offers considerable opportunities to improve learning efficiency, personalize instruction, and broaden access to educational resources. Nevertheless, alongside these benefits, AI also raises significant ethical concerns regarding academic integrity, originality, and responsible learning behavior (Malik et al., 2024; Ravšelj et al., 2025). Education is not merely intended to produce correct answers but to cultivate critical thinking, honesty, independence, and accountability. Therefore, understanding

how students use AI ethically has become an urgent concern because inappropriate utilization may undermine the fundamental objectives of education and weaken the moral values that schools seek to develop among future generations (Bouteraa et al., 2024).

Despite the educational potential of AI, its widespread adoption has generated growing concern among educators, policymakers, and researchers regarding students' academic responsibility (Schei et al., 2024). Many learners increasingly rely on generative AI to complete assignments without critically evaluating the generated information or acknowledging AI assistance appropriately (Strzelecki, 2023; Yilmaz & Yilmaz, 2023). Such practices may encourage plagiarism, reduce independent learning, diminish analytical thinking, and weaken students' commitment to academic honesty (Evangelista, 2025). These problems become more serious because many educational institutions have not yet established comprehensive guidelines governing ethical AI use in learning activities (Okaibedi, 2023). Consequently, students often perceive AI simply as a shortcut for completing assignments rather than as a learning support tool. If this situation continues without proper ethical guidance, educational institutions may face declining academic integrity, reduced learning quality, and graduates who possess limited independent problem-solving abilities despite achieving satisfactory academic performance (Perkins, 2023; Wang et al., 2023).

These concerns are also evident at Madrasah Aliyah Balongrejo Sumobito Jombang, where AI has gradually become part of students' daily learning practices. Preliminary observations indicate that many students in Grades X and XI utilize AI applications to complete language assignments, prepare reports, translate texts, and search for academic references. Although these technologies assist students in completing academic tasks more efficiently, several learning behaviors raise ethical concerns (Acosta-Enriquez et al., 2024; Gruenhagen et al., 2024). Some students reportedly submit AI-generated work without revision, fail to acknowledge AI as a learning aid, directly copy generated content, and present it as their own original work (Ortiz-Bonnin & Blahopoulou, 2025). Such practices contradict the principles of academic responsibility, which emphasize honesty, independence, accountability, and authentic intellectual effort (Strzelecki & ElArabawy, 2024). At the same time, teachers have not yet implemented standardized policies regarding acceptable AI use, creating uncertainty among students concerning ethical boundaries in employing AI throughout the learning process (Ada, 2024).

Previous studies have extensively explored the integration of AI within educational settings from various perspectives. Holmes et al. argued that AI contributes positively to personalized learning, adaptive instruction, automated assessment, and increased learning efficiency by supporting individualized educational experiences (Shoukat et al., 2025). Likewise, several empirical studies reported that AI-assisted learning can improve students' productivity, facilitate information retrieval, and enhance engagement during academic activities (Zhang & Tur, 2023). These findings collectively demonstrate that AI possesses substantial potential to strengthen educational quality when implemented appropriately. However, most existing studies primarily emphasize technological effectiveness and learning outcomes while giving comparatively limited attention to ethical dimensions, particularly the development of students'

academic responsibility (Mahapatra, 2024; Zhai et al., 2024). Consequently, current literature provides only a partial understanding of AI implementation because educational success depends not only on technological efficiency but also on ethical learning behavior and responsible academic conduct.

Other researchers have begun examining ethical issues associated with AI use in education. Rahman reported that although most senior high school students had already utilized ChatGPT for completing academic assignments, only a relatively small proportion understood ethical practices such as acknowledging AI assistance, paraphrasing generated content, and verifying information independently (Akter et al., 2026). Similarly, Sari emphasized that academic responsibility consists of honesty, discipline, accountability, and independent learning, all of which may decline when students become excessively dependent on AI-generated outputs (Sari & Nasution, 2025; Yilmaz & Yilmaz, 2023). Meanwhile, Fadillah identified a negative relationship between unethical AI utilization and academic integrity among university students (Munifah et al., 2026). Although these studies contribute valuable insights, they predominantly focus on higher education or general secondary schools, investigate AI usage intensity rather than ethical behavior, and rarely examine Islamic educational institutions (Shloul et al., 2024; Stöhr et al., 2024). Therefore, evidence explaining how ethical AI practices relate to students' academic responsibility within Madrasah Aliyah remains limited, leaving an important empirical gap requiring further investigation.

Based on the existing literature, this study offers several important contributions that distinguish it from previous research. First, it shifts the analytical focus from merely investigating AI utilization toward examining the ethical dimension of AI use as an educational variable. Second, the study specifically investigates students within an Islamic senior secondary educational context, where academic responsibility is closely connected with religious, moral, and character education. Third, instead of evaluating only the consequences of AI adoption, this research analyzes the relationship between ethical AI practices and students' academic responsibility, thereby integrating technological literacy with educational ethics. This perspective is expected to enrich discussions concerning responsible AI implementation in schools while providing empirical evidence that may support policymakers, teachers, and educational institutions in developing ethical AI guidelines consistent with the educational values promoted within Madrasah Aliyah.

Considering the increasing integration of AI into educational activities and the limited empirical evidence available within Islamic secondary education, this study seeks to answer two principal research questions: (1) What is the profile of AI ethics and academic responsibility among students of Madrasah Aliyah Balongrejo Sumobito Jombang during the 2025/2026 academic year? and (2) Is there a significant relationship between ethical AI use and students' academic responsibility? This research is based on the argument that ethical AI utilization encourages responsible learning behaviors because students who understand ethical principles including transparency, honesty, proper attribution, independent verification, and responsible use of AI-generated information are more likely to demonstrate stronger academic responsibility. Conversely, unethical AI practices are expected to weaken students' commitment to honesty, originality, and accountability. Therefore, this study hypothesizes

that ethical AI use is positively associated with students' academic responsibility and may provide valuable evidence for developing ethical AI policies in Islamic educational institutions.

RESEARCH METHOD

This study uses a quantitative approach with a correlational design. The quantitative approach was chosen because the research aims to test the relationship between two variables through data expressed in the form of numbers and analyzed using statistical techniques. According to Creswell (2018), quantitative research is an approach used to test theories through variable measurement and analysis of relationships between variables using statistical procedures. The correlational design was chosen because this study did not provide treatment to the subject, but sought to find out whether or not there was a relationship between the ethics of using Artificial Intelligence (AI) as an independent variable (X) and students' academic responsibility as a bound variable (Y). Through a correlational design, researchers can find out the direction and strength of the relationship between variables so that an empirical picture is obtained regarding the extent to which the application of AI use ethics is related to the academic responsibilities of Madrasah Aliyah Balongrejo students in the 2025/2026 Academic Year.

The research was carried out at Madrasah Aliyah Balongrejo, Sumobito District, Jombang Regency, in the Even Semester of the 2025/2026 Academic Year. The selection of the research location is based on several considerations. First, the madrasah has begun to utilize various Artificial Intelligence applications such as ChatGPT, Gemini, and QuillBot in the learning process so that it is in accordance with the focus of research. Second, based on initial observations, most students have used AI to complete schoolwork, but there are no written guidelines on the ethics of using it. Third, the madrasah provides access and permission to researchers to carry out research so that the data collection process can be carried out optimally.

Data collection was carried out through questionnaire and documentation techniques. The data collected included data on the ethics of using Artificial Intelligence and students' academic responsibilities. The research respondents were grade XII students who were the research sample. Data collection was carried out within the Balongrejo Supreme Court, Jombang Regency. Data collection was carried out after the researcher obtained a research permit from the head of the madrasah in the even semester of the 2025/2026 Academic Year. Data collection was carried out to obtain empirical information regarding the relationship between the ethics of using AI and students' academic responsibilities.

Primary data were obtained through the distribution of questionnaires using the five-level Likert scale, namely strongly disagree (1), disagree (2), hesitate (3), agree (4), and strongly agree (5). The questionnaire of ethical variables for the use of AI is compiled based on indicators of honesty, responsibility, and wisdom in utilizing AI. Meanwhile, the academic responsibility questionnaire was prepared based on indicators of discipline, academic honesty, and learning independence. In addition, documentation is used to obtain supporting data in the form of the number of students, madrasah profiles, and other documents related to research.

The data analysis in this study was carried out using JASP software through several stages. The first stage is descriptive statistics used to describe the characteristics of respondents as well as the ethical level of the use of Artificial Intelligence (AI) and students' academic responsibilities based on average, percentage, standard deviation, maximum and minimum grades. Furthermore, an analysis prerequisite test was carried out in the form of a Shapiro-Wilk normality test to determine the distribution of data. After that, hypothesis testing was carried out using Spearman Rank correlation because the research data was obtained through the ordinal Likert scale. This correlation analysis aims to find out the direction and level of strength of the relationship between the ethics of using AI and students' academic responsibilities. The test decision is based on a significance value of 0.05, that is, if the Sig. value < 0.05, there is a significant relationship between variables. The level of strength of the relationship is interpreted based on the value of the correlation coefficient, namely 0.00–0.199 (very weak), 0.20–0.399 (weak), 0.40–0.599 (moderate), 0.60–0.799 (strong), and 0.80–1.00 (very strong).

To ensure the quality and validity of the research data, the research instrument is first tested before being used in the main study. The validity test was carried out using Pearson's Product Moment correlation to the results of instrument tests on students outside the research sample, with the criterion that the statement item is declared valid if the calculated *r* value is greater than the *r* of the table at a significance level of 5%. Furthermore, the reliability test was carried out using the Cronbach's Alpha coefficient to determine the consistency level of the instrument, with the criterion that the instrument was declared reliable if the Cronbach's Alpha value ≥ 0.70 (Yun et al., 2023). In addition to testing the instruments, the researcher also ensures the validity of the data collection process through the application of the same procedures to all respondents, providing information about the purpose of the research, protecting the confidentiality of respondents' identities, and checking the completeness of the answers before the data is statistically analyzed.

RESULTS AND DISCUSSION

Results

Respondent Characteristics

The respondents of the study were 25 students in grade XII. The characteristics of respondents by gender, major, and use of AI are presented in Table 1.

Table 1. Respondent Characteristics

Features	Category	Quantity	Presentase (%)
Gender	Male	6	24%
	Women	19	76%
Majors	IPA	13	52%
	IPS	12	48%
AI Users	Users	15	60%
	Non-User	10	40%
Total	Students	25	

Source: Primary data processed, JASP 2026

Table 1 presents the characteristics of respondents involved in this study, consisting of 25 Grade XII students at MA Balongrejo Jombang. Based on gender

distribution, the majority of respondents were female students, accounting for 19 students (76%), while male students represented 6 students (24%). Regarding academic majors, the respondents were relatively balanced, with 13 students (52%) from the Science major (IPA) and 12 students (48%) from the Social Science major (IPS). This distribution indicates that the study involved students from different academic backgrounds, allowing the data to represent diverse learning experiences within the school environment.

Furthermore, the table shows that most respondents had experience using Artificial Intelligence (AI) in learning activities. A total of 15 students (60%) were identified as AI users, whereas 10 students (40%) had not used AI for academic purposes. This finding indicates that AI utilization has become relatively common among Grade XII students at MA Balongrejo Jombang. The relatively high proportion of AI users provides relevant empirical support for examining the relationship between ethical AI use and students' academic responsibility.

Description of Variable Statistics

To provide a comprehensive overview of the research variables, a descriptive statistical analysis was conducted on students' responses to each indicator of academic responsibility. This analysis aims to identify the general tendency of respondents' perceptions regarding their academic responsibility during the learning process. The results are presented through the mean score of each statement item and its corresponding category based on the predetermined interpretation criteria. The descriptive findings serve as an initial basis for understanding the level of students' academic responsibility before proceeding to inferential statistical analysis examining its relationship with the ethics of Artificial Intelligence (AI) use.

Table 2. Statistical Description of Variables of Academic Responsibility

No.	Item Statement	Average Score	Category
1	P2. I collect assignments according to the time set by the teacher.	4,72	Very High
2	P3. I try to understand the subject matter before asking for help from others.	4,32	Very High
3	P5. I realized that learning was my responsibility as an MA student.	4,60	Very High
4	P13. I am trying to correct the learning mistakes I have made.	4,52	Very High
5	P15. I realized that the responsibility of learning is part of the morals of a Muslim.	4,68	Very High
Total Average		4,57	Very High

Source: Primary Data processed, 2026

Table 2 presents the descriptive statistics of the Academic Responsibility variable based on five questionnaire items. Overall, the variable obtained a total mean score of 4.57, which falls within the very high category. This finding indicates that the respondents generally demonstrated a strong sense of academic responsibility in carrying out their learning obligations. The consistently high scores across all indicators suggest that students possess positive attitudes

toward discipline, independent learning, and accountability in the educational process.

Among the indicators, the statement “I collect assignments according to the time set by the teacher” (P2) recorded the highest mean score (4.72), followed by “I realized that the responsibility of learning is part of the morals of a Muslim” (P15) with a mean of 4.68, and “I realized that learning was my responsibility as an MA student” (P5) with 4.60. These results indicate that students have developed a strong awareness of discipline and perceive academic responsibility as both an educational obligation and a reflection of Islamic moral values.

The remaining indicators also received very high mean scores, namely “I am trying to correct the learning mistakes I have made” (P13) with 4.52 and “I try to understand the subject matter before asking for help from others” (P3) with 4.32. Although the latter obtained the lowest average among the five items, it still belongs to the very high category, suggesting that most students strive to learn independently before seeking assistance. Overall, these findings demonstrate that Grade XII students at MA Balongrejo Jombang exhibit a high level of academic responsibility, providing a positive foundation for examining its relationship with ethical AI use.

Prerequisite Test and Hypothesis Test

Before testing the research hypothesis, the measurement instrument was evaluated through validity and reliability testing. The results indicated that all questionnaire items met the validity criteria and demonstrated satisfactory internal consistency, with Cronbach’s Alpha values exceeding 0.60, confirming that the instrument was suitable for data collection. Subsequently, a Shapiro–Wilk normality test was conducted to examine the distribution of the research data. The findings revealed that the AI Ethics variable was not normally distributed (Sig. = 0.012 < 0.05). Because the assumption of normality was not satisfied, the hypothesis was analyzed using the non-parametric Spearman Rank Correlation Test to determine the relationship between AI ethics and students’ academic responsibility. The correlation results are presented in Table 3.

Table 3. Spearman Rank Correlation Test Results

Variabel	Spearman’s rho	Say.	Remarks
AI Ethics Academic Responsibility	0,648	0,000	Signifikan

Source: Output JASP, 2026

The results presented in Table 3 indicate that the Spearman Rank correlation coefficient between AI ethics and students’ academic responsibility was 0.648, with a significance value of 0.000 ($p < 0.05$). These findings demonstrate a positive and statistically significant relationship between the two variables, indicating that students with higher levels of ethical AI use tend to exhibit stronger academic responsibility. Based on the interpretation criteria, the correlation falls within the strong category. Therefore, the research hypothesis (H_1) is accepted, confirming that ethical AI practices are significantly associated with students’ academic responsibility.

Furthermore, the coefficient of determination shows that AI ethics accounts for 42.0% of the variance in students’ academic responsibility, while the remaining 58.0% is explained by other factors beyond the scope of this study. In addition, the Mann–Whitney U test comparing AI users and non-users produced

a significance value of 0.165 ($p > 0.05$), indicating no statistically significant difference in academic responsibility between the two groups. This suggests that the level of academic responsibility is influenced more by students' ethical behaviour in using AI than by whether they use AI itself.

Discussion

The findings of this study demonstrate that Grade XII students at MA Balongrejo Jombang generally exhibit a very high level of academic responsibility, as reflected in the overall mean score of 4.57. Students reported strong commitment to completing assignments on time, recognizing learning as their personal responsibility, correcting learning mistakes, and maintaining independent learning habits (Yusuf et al., 2024). These results support the view that academic responsibility is a multidimensional construct encompassing discipline, honesty, accountability, and self-directed learning. The findings are consistent with previous studies emphasizing that responsible learners are more likely to regulate their own learning behaviors and achieve positive educational outcomes (Chen & Gong, 2025; Deric et al., 2025). In the context of Islamic education, the high score on the indicator relating academic responsibility to Islamic moral values further suggests that religious principles may strengthen students' commitment to ethical learning practices, reinforcing the integration of academic responsibility and character education within Madrasah Aliyah (Usher & Barak, 2024).

The correlation analysis revealed a significant positive relationship between AI ethics and academic responsibility (Spearman's $\rho = 0.648$, $p < 0.05$), indicating that students who apply ethical principles when using Artificial Intelligence tend to demonstrate stronger academic responsibility (Chen & Gong, 2025). This finding is consistent with previous research reporting that ethical awareness plays a crucial role in preventing plagiarism, promoting independent learning, and maintaining academic integrity (Khan et al., 2025; Pikhart & Al-Obaydi, 2025). Holmes and colleagues argued that AI has considerable educational potential when used as a learning support tool rather than as a substitute for students' intellectual effort (Chan, 2023). Similarly, studies examining ethical AI implementation have emphasized that responsible AI use encourages students to verify information, acknowledge AI assistance appropriately, and remain actively engaged in learning. Therefore, the present findings strengthen existing evidence that ethical behavior is an essential component of effective AI integration in education.

Although the present findings generally support previous literature, they also extend existing knowledge in several important ways. Earlier studies primarily investigated university students or examined the frequency of AI use without distinguishing between ethical and unethical practices. In contrast, this study specifically focuses on Madrasah Aliyah students and evaluates the ethical dimension of AI utilization rather than simple usage intensity (Mulaudzi & Hamilton, 2025; Sharples, 2023). The finding that AI ethics explains 42% of the variance in academic responsibility indicates that ethical awareness substantially contributes to students' responsible academic behavior, although other educational, psychological, and environmental factors also play important roles (Sajja et al., 2026). Moreover, the absence of significant differences in academic responsibility between AI users and non-users suggests that AI itself is not

inherently beneficial or harmful; instead, educational outcomes depend on how ethically students employ the technology throughout the learning process (Alotaibi, 2024; Msambwa et al., 2025).

From a theoretical perspective, these findings reinforce educational theories emphasizing that technological innovation should be accompanied by ethical literacy and character development (Southworth et al., 2023; Zuhri et al., 2026). The results support the argument that academic responsibility is influenced not only by cognitive competence but also by students' moral decision-making when interacting with digital technologies. Consequently, the study contributes to the growing body of literature on AI ethics by demonstrating that ethical AI use represents an important predictor of responsible learning behavior within Islamic secondary education (Bahroun et al., 2023; Mortlock & Lucas, 2024). This contribution enriches current discussions concerning educational technology by integrating concepts of digital ethics, academic integrity, and character education. Furthermore, the findings provide empirical evidence that responsible AI implementation can complement rather than replace students' independent thinking, thereby supporting balanced educational development in technology-rich learning environments.

The practical implications of this study are equally significant for schools, teachers, and educational policymakers. Since ethical AI use is positively associated with students' academic responsibility, schools should develop clear institutional guidelines governing acceptable AI practices in academic work (Hardie et al., 2026). Teachers should also integrate AI literacy and ethical awareness into classroom instruction by teaching students how to use AI responsibly, evaluate AI-generated information critically, acknowledge AI assistance transparently, and avoid plagiarism (Amini et al., 2025; Perkins et al., 2023). For Madrasah Aliyah, these initiatives should be aligned with Islamic moral values emphasizing honesty (*ṣidq*), trustworthiness (*amānah*), and personal accountability (*mas'ūliyyah*). Ultimately, this study contributes practical evidence supporting the development of AI ethics education as an integral component of digital learning policies, ensuring that technological advancement strengthens rather than weakens students' academic responsibility and character formation.

CONCLUSION

This study concludes that ethical use of Artificial Intelligence is positively and significantly associated with students' academic responsibility, indicating that AI contributes to meaningful learning only when it is used responsibly, honestly, and critically. The findings highlight an important lesson that technological advancement should be accompanied by ethical awareness to preserve academic integrity and foster independent learning. By focusing on Madrasah Aliyah students, this research contributes to the growing literature on AI ethics by extending previous studies beyond higher education and demonstrating the relevance of ethical AI practices within Islamic secondary education. Nevertheless, this study is limited by its relatively small sample size and its focus on a single institution, which may restrict the generalizability of the findings. Future research should involve larger and more diverse samples, incorporate additional variables influencing academic responsibility, and employ longitudinal or mixed-methods approaches to provide a more

comprehensive understanding of ethical AI use in education.

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