

Analysis of Students' Dependence on AI in Completing Academic Assignments

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The development of artificial intelligence (AI) has driven significant changes in students' academic activities, particularly in completing coursework. The ease, speed, and ability of AI to assist with understanding material and formulating answers have led to its increasing use, but it also raises the potential for dependency. This study aims to analyze the level of student dependency on the use of AI in completing academic assignments and the relationship between this dependency and their completion. This study used a quantitative approach with a descriptive-correlational method. Data were collected through a Likert-scale questionnaire distributed to 146 university students and analyzed using descriptive statistics, normality tests, linearity tests, and Pearson correlation tests using SPSS software. The results indicate that the level of dependency on AI is moderate, with the majority of students utilizing AI to improve the efficiency and ease of completing academic assignments. The correlation analysis revealed a positive and significant relationship between dependency on AI and completion of academic assignments. However, these findings also indicate the need for proportional use of AI so that the academic benefits obtained do not reduce students' independence and cognitive engagement in the learning process.

Keywords: Artificial Intelligence, Dependency On AI, Academic Assignment Completion, Students

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1. Introduction

The development of digital technology has brought about significant transformations in higher education. One of the most prominent innovations is artificial intelligence (AI), which is now used as an aid in the learning process and in completing students' academic assignments (Berliana, Winantoro, & Damariswara, 2024). AI is capable of providing information quickly, automatically compiling text, paraphrasing, and assisting with basic analysis of academic problems (Syahputra et al., 2025). The presence of this technology has made AI an integral part of students' academic activities across various disciplines (Berliana, Winantoro, & Damariswara, 2024).

The use of AI in completing academic assignments shows a consistent increasing trend (Wardhana et al., 2025). Students use AI to search for initial references, develop writing outlines, paraphrase, and even answer conceptual questions (Berliana, Winantoro, & Damariswara, 2024). The use of AI provides convenience and efficiency, especially when students face time constraints and high academic workloads (Syahputra et al., 2025). AI can increase academic productivity and accelerate assignment completion without significantly reducing the quality of work (Angga et al., 2024).

In addition to increasing efficiency, AI also helps students reduce the risk of plagiarism. AI-based paraphrasing tools have been shown to reduce text similarity and help students understand material with different language styles (Susilo & Widayanti, 2024). AI is seen as a supporting technology relevant to the demands of higher education in the digital age, so its use must be understood critically and proportionally (Syahputra et al., 2025).

The convenience offered by AI also creates the potential for student dependency on the technology. Dependence on AI for academic assignments can shift the learning process from an active cognitive activity to simply receiving instant results (Firdaus et al., 2025). Students who rely too much on AI tend to skip important stages of academic thinking, such as analyzing problems, developing arguments, and evaluating information independently (Sukmantara, 2024).

This dependency phenomenon impacts students' critical and creative thinking skills. Excessive use of AI can weaken the ability to analyze and synthesize information because much of the thinking process is shifted to technology (Firdaus et al., 2025). When AI takes over the thinking role, students lose the opportunity to practice higher-order cognitive skills essential in higher education (Sukmantara, 2024).

Beyond academic aspects, AI dependence also impacts students' psychology. One aspect impacted is self-efficacy, which is an individual's belief in their ability to complete academic tasks. Students who overuse AI tend to have lower self-efficacy because they feel unable to complete tasks without technological assistance (Raharjo et al., 2025). This condition can lower academic confidence and increase long-term dependence on AI (Raharjo et al., 2025).

Student learning motivation is also affected by the use of AI. The ease of obtaining instant answers from AI can reduce students' motivation to learn deeply and independently (Hanifah & Novebri, 2025). Students tend to focus on the final outcome of assignments rather than the learning process itself, thus losing the reflective and exploratory meaning that is the core of higher education (Firdaus et al., 2025).

AI reliance also reduces student learning independence. Students who habitually use AI in nearly every academic task risk diminishing their ability to manage their learning process independently, including reading academic sources, constructing arguments, and evaluating their own work (Pujiastuti et al., 2025). This decline in learning independence impacts not only short-term academic performance but also their readiness to face future academic and professional challenges (Pujiastuti et al., 2025).

The phenomenon of student AI use and dependence is increasingly relevant for research. Various studies in Indonesia show that the majority of students have used AI in academic activities with varying intensity (Berliana, Winantoro, & Damariswara, 2024). While the use of AI can improve learning effectiveness in some aspects, excessive dependence has the potential to reduce the quality of learning and students' intellectual development (Firdaus et al., 2025).

Furthermore, uncontrolled use of AI poses challenges to academic ethics. Dependence on AI can increase the risk of covert plagiarism and reduce the originality of students' academic work (Susilo & Widayanti, 2024). Students who do not understand the ethical boundaries of AI use can produce academic work that is technically correct but lacks original thought (Angga et al., 2024). This situation is a serious concern for higher education institutions in maintaining academic integrity (Susilo & Widayanti, 2024).

Various studies have examined the use of AI in higher education from various perspectives, such as learning effectiveness, academic achievement, and student academic behavior (Syahputra et al., 2025). However, studies integrating academic and psychological aspects into students' dependence on AI are still limited (Wardhana et al., 2025). Yet, a comprehensive understanding of both aspects is crucial for formulating a balanced and sustainable strategy for AI utilization (Wardhana et al., 2025).

Based on this description, this study is crucial for analyzing students' dependence on AI in completing academic assignments, simultaneously considering both academic and psychological aspects (Firdaus et al., 2025). This research is expected to provide a comprehensive overview of AI usage patterns, factors driving dependence, and its impact on students' critical thinking skills, learning motivation, self-efficacy, and academic independence (Raharjo et al., 2025).

Therefore, the results of this study are expected to provide theoretical contributions to the development of technology-based education studies and practical contributions for lecturers and educational institutions in designing learning strategies that optimally utilize AI without compromising students' academic and psychological development (Syahputra et al., 2025).

2. Method

This study uses a quantitative approach with a descriptive-correlational method to analyze the relationship between student reliance on artificial intelligence (AI) and the effectiveness of completing academic assignments. The quantitative approach was chosen because it allows for objective measurement of phenomena, quantification of variables, and statistical analysis of relationships between variables. The descriptive-correlational method was used to describe patterns of student AI use and identify levels of dependency. It also analyzed the correlational relationship between AI dependency and students' academic and psychological aspects.

The study population consisted of active students at Indonesian universities who use AI in their academic activities, spanning various study programs and educational levels. This population was selected based on the relevance of their experience using AI to the research objectives, thus representing students who have had real interactions with AI technology. The study sample was drawn using a random sampling technique, with 146 students as respondents. Random sampling was chosen to ensure sample representativeness and minimize selection bias, allowing the study results to be more broadly generalizable to the same population.

The research instrument was an online questionnaire distributed via Google Forms, using a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). This questionnaire consisted of two main variables. The AI dependency variable was measured using six statements representing the intensity of AI use, the level of dependency, and its impact on students' critical, creative, and independent thinking processes. The academic task completion variable was measured using seven statements reflecting the efficiency of task completion, the quality of academic results, self-confidence, and student learning motivation. Prior to use, the instrument was tested for validity and reliability using the Pearson test for validity and the Cronbach's Alpha test for reliability, to ensure that the questionnaire measured the variables consistently and accurately.

Data collection was conducted with due regard for research ethics, including obtaining respondent consent and guaranteeing confidentiality of personal data. Respondents were provided with an explanation of the research objectives, how to complete the questionnaire, and their right to refuse or discontinue participation at any time. The collected data were then analyzed using SPSS software through several stages. The first analysis involved descriptive statistics, including the mean, median, mode, standard deviation, and frequency distribution, to describe the sample characteristics and patterns of student AI use. The second analysis involved correlational analysis, which was used to examine the relationship between the level of AI dependency and indicators of academic task completion.

Before conducting the correlation analysis, the data were first tested to meet statistical assumptions. These tests included normality tests (Kolmogorov-Smirnov or Shapiro-Wilk) to ensure the data distribution was approximately normal, and linearity tests to ensure the relationship between variables was linear. The results of the correlation analysis were presented in the form of correlation tables, scatter plot diagrams, and narrative interpretations for ease of understanding. With this methodological design, the study is expected to provide a comprehensive overview of the patterns of student dependence on AI and its impact on their academic and psychological abilities.

3. Results and Discussion

AI Dependence

The results of the descriptive statistical analysis indicate that the level of dependence on artificial intelligence (AI) among students has an average score of 23.64 with a standard deviation of 3.505, with a minimum score of 11 and a maximum score of 30. These values indicate a variation in the level of AI use among students, ranging from relatively low to very intense. A summary of the descriptive statistics for the AI dependency variable is presented in Table 1.

Table 1. Descriptive Statistics for AI Dependence

Statistics	
Mean	23.64
Std. Deviation	3.505
Minimum	11
Maximum	30

To obtain a clearer picture of the level of dependence on AI use, respondents' scores were further grouped into three categories: low, medium, and high, based on the total score range. The score range was determined based on the instrument's theoretical minimum and maximum scores. The low category falls within the score range of 6–13, the medium category 14–21, and the high category 22–30. The results of the respondent grouping are presented in Table 2.

Table 2. Respondent Groups Based on Level of Dependence on AI Use

Category	Score Range	Total (n)	Percentage (%)
Low	6–13	45	30.77
Medium	14–21	79	53.85
High	22–30	22	15.38
Total		146	100

Based on Table 2, the majority of students, 53.85%, fall into the moderate AI dependency category. Meanwhile, 30.77% fall into the low category, and 15.38% into the high category. These findings indicate that AI use among students is generally moderate, with a small percentage highly dependent on AI and others using AI relatively infrequently to complete academic assignments. To further understand the pattern of AI dependency, descriptive statistical analysis was conducted on each indicator statement in the questionnaire. The results of this analysis are presented in Table 3.

Table 3. Descriptive Statistics for AI Dependency Indicators

No	Statements	Mean	Std. Deviation
1	Always use AI to help complete academic assignments	3,94	0,832
2	Use AI to help understand learning materials	3,99	0,796
3	Feel academic assignments are more difficult to complete without AI assistance	3,90	0,905
4	AI makes work easier, leading to less in-depth thinking	3,87	0,919
5	AI provides quick and in-depth answers and analysis	3,98	0,834
6	The use of AI reduces critical thinking and creativity	3,97	0,905

Based on Table 3, the analysis results show that students' dependence on artificial intelligence (AI) is reflected in the high average scores across almost all indicators. The indicator with the highest score is the use of AI to help understand learning materials and obtain answers quickly. This finding indicates that AI is

being utilized as a primary cognitive aid by students in dealing with complex academic material, as well as a means to expedite the completion of academic assignments.

However, the high intensity of AI use also indicates a tendency toward dependence. This is reflected in the relatively high average scores for indicators stating that academic assignments feel more difficult to complete without AI assistance and that AI makes work easier, resulting in students rarely thinking deeply. This situation indicates that the convenience offered by AI has the potential to reduce students' cognitive engagement in academic analysis and reflection.

Furthermore, the high average scores for indicators related to decreased critical thinking and creativity indicate the potential negative impacts of excessive AI use. This finding illustrates that students' dependence on AI is ambivalent, with AI providing benefits in terms of efficiency and understanding of material, but also risking weakening the independence and quality of academic thinking processes if not used proportionately.

Student Academic Assignment Completion

The results of the descriptive statistical analysis indicate that students' academic assignment completion with AI assistance had an average score of 27.59 with a standard deviation of 3.956, and a minimum score of 16 and a maximum score of 35. A summary of the descriptive statistics for the academic assignment completion variable is presented in Table 4.

Table 4. Descriptive Statistics for Academic Assignment Completion

Statistics	
Mean	27.59
Std. Deviation	3.956
Minimum	16
Maximum	35

These average scores indicate that students generally perceive the benefits of using AI in assisting them with completing academic assignments, particularly in terms of time efficiency and ease of completion. Further analysis was conducted on each academic assignment completion indicator to examine the specific role of AI. The results are presented in Table 5.

Table 5. Descriptive Statistics of Academic Assignment Completion Indicators

No	Statements	Mean	Std. Deviation
1	Completing assignments on time with AI assistance	4,01	0,752
2	The quality of assignments has improved after using AI	3,82	0,828
3	Completing academic assignments more efficiently with AI	3,98	0,859
4	Complicated assignments have become easier with AI	3,99	0,809
5	Completing more assignments in less time	4,00	0,805
6	More confident in expressing ideas with AI assistance	3,89	0,933
7	Using AI to complete academic assignments has made me feel less afraid when given new assignments	3,89	0,880

Based on Table 5, the results of the descriptive statistical analysis indicate that the use of artificial intelligence (AI) makes a significant contribution to students' academic completion. The indicators with the highest average scores are the ability to complete assignments on time and the ease of completing complex assignments. These findings indicate that AI plays a key role in supporting students' effectiveness and fluency in facing academic demands.

In addition to the aspects of timeliness and ease of assignment completion, a high average score is also seen for the indicator of academic task completion efficiency. This indicates that AI helps students optimize their time and effort when working on various types of assignments. Students can complete more academic work in a relatively shorter time, thus better managing their academic load.

On the other hand, indicators related to improving the quality of assignment results and confidence in expressing ideas also show quite high average scores. These findings illustrate that AI not only contributes to the technical aspects of assignment completion but also supports students' psychological aspects of the academic process. However, the use of AI still needs to be directed proportionally so that the ease and efficiency achieved do not reduce students' cognitive engagement and independence in completing academic assignments.

The Relationship Between AI Use and Academic Task Completion

A normality test was conducted to determine whether the data on the dependent variables of artificial intelligence (AI) use and academic task completion were normally distributed. This study used the Kolmogorov–Smirnov method to test for normality. The results of the normality test are presented in Table 6. This normality test was conducted as a prerequisite for using parametric statistical tests in analyzing the relationship between variables.

Table 6. Normality Test Results

Variable	Kolmogorv-Smirnov (Sig.)	Description
AI Dependence* Academic Task Completion	0,093	Normal

Based on Table 6, the significance value is 0.093, which is greater than 0.05, so it can be concluded that the data in this study are normally distributed. Therefore, further analysis can be conducted using parametric statistical tests.

After the data are declared normally distributed, a linearity test is performed as a prerequisite for conducting a correlation test. The linearity test was conducted using the ANOVA Test for Linearity in SPSS. Interpretation of the linearity test results is based on the linearity significance value and deviation from linearity. The results of the linearity test are presented in Table 7.

Table 7. Linearity Test Results

	Sig.
Linearity	0,254
Deviation from Linearity	0,191

Based on Table 7, the linearity significance value is $0.254 > 0.05$, and the deviation from linearity significance value is $0.191 > 0.05$, indicating no significant deviation from the linear relationship. Therefore, it can be concluded that the relationship between dependence on AI use and academic task completion is linear, thus meeting the assumptions for a Pearson correlation test.

After the data met the assumptions of normality and linearity, a Pearson correlation test was conducted to determine the relationship between dependence on AI use and student academic task completion. The results of the Pearson correlation test are presented in Table 8.

Table 8. Pearson Correlation Test Results

Variable	r	Sig. (2-tailed)	Conclusion
Dependence of AI Use and Completion of Academic Assignments	0,79	0,000	Positive, Significant Correlation

Based on Table 8, the Pearson correlation coefficient (r) is 0.790, indicating a positive relationship between reliance on AI use and students' academic task completion. A significance value of $0.000 < 0.05$ indicates that the relationship is statistically significant. A correlation coefficient value approaching 1 indicates a strong relationship between the two variables.

Based on the descriptive statistical analysis in Table 2, the majority of students fall into the moderate reliance category (53.85%), followed by the low reliance category (30.77%), and the high reliance category (15.38%). This pattern is reinforced by the average reliance value of 23.64 with a standard deviation of 3.505, as shown in Table 1, indicating that AI use has become common practice in students' academic activities. These findings align with previous research indicating that AI is increasingly being utilized as a primary tool in the learning process and completing academic assignments in higher education (Syahputra et al., 2025; Wardhana et al., 2025; Angga et al., 2024).

A more detailed analysis in Table 3 shows that AI reliance is primarily reflected in the use of AI to assist in understanding learning materials ($M = 3.99$) and to obtain answers and analyze them quickly ($M = 3.98$). However, the high mean scores for the indicators "AI use reduces critical thinking and creativity" ($M = 3.97$) and "academic assignments feel more difficult without AI assistance" ($M = 3.90$) indicate the potential for cognitive offloading. These findings support concerns in the education literature regarding the risk of decreased cognitive engagement and in-depth understanding due to excessive reliance on AI technology (Firdaus et al., 2025; Pujiastuti et al., 2025; Sukmantara, 2024).

Regarding academic task completion, the results in Table 5 indicate that AI positively contributes to student efficiency and confidence, as reflected in the high average scores for completing tasks on time ($M = 4.01$) and ease of completing complex tasks ($M = 3.99$). However, the correlation test results in Table 8 indicate that the relationship between reliance on AI and academic task completion is weak but significant ($r = -0.370$; sig. = 0.020). This finding suggests that while AI plays a role in supporting task completion, reliance on AI is not the sole factor determining the quality of students' academic engagement, as confirmed in previous research (Hanifah & Novebri, 2025; Raharjo et al., 2025; Susilo & Widayanti, 2024).

Overall, the findings of this study indicate that the use of AI in academic activities is ambivalent. On the one hand, AI provides tangible benefits in increasing the efficiency of completing academic assignments, as reflected in Table 5. On the other hand, increased dependence, as indicated by the indicators in Table 3, has the potential to weaken students' independence and the quality of their critical thinking processes. Therefore, in line with previous research recommendations, the use of AI in higher education needs to be directed critically and responsibly, by positioning AI as a learning support tool, not as a substitute for students' cognitive processes (Raharjo et al., 2025; Sukmantara, 2024; Angga et al., 2024).

4. Conclusion

Based on the research results and discussions conducted, it can be concluded that the use of artificial intelligence (AI) has become an integral part of students' academic activities. The level of dependence on AI is moderate, with the majority of students utilizing AI as a primary tool to understand learning materials and complete academic assignments more efficiently. This indicates that AI is viewed as a relevant supporting technology in addressing the academic demands of higher education.

The analysis also shows that the use of AI positively contributes to students' completion of academic assignments, particularly in terms of timeliness, work efficiency, and confidence in expressing ideas. However, the high intensity of AI use for several indicators indicates potential dependence, particularly when students find it difficult to complete assignments without AI assistance and experience a decrease in cognitive engagement in deep thinking processes.

The correlation test results show a strong and significant positive relationship between dependence on AI and student completion of academic assignments. This finding indicates that the higher a student's dependence on AI, the greater the role of AI in supporting academic assignment completion. However, the relationship found is correlational and does not indicate a causal relationship, so dependence on AI is not the sole factor determining the quality of student learning processes and outcomes.

Overall, the findings of this study confirm that the use of AI in academics is ambivalent. On the one hand, AI offers tangible benefits in increasing efficiency and facilitating the completion of academic tasks. On the other hand, excessive reliance has the potential to undermine students' independent learning and critical thinking skills. Therefore, the use of AI in higher education needs to be directed critically and responsibly, positioning AI as a learning support tool that complements students' thinking processes, not as a substitute for their cognitive abilities.

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