Predictive Effects of AI Literacy and Critical-Thinking Disposition on Students' Perceived AI-Assisted Academic Communication

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ABSTRACT

Generative artificial intelligence (AI) is increasingly used in higher education for academic writing, brainstorming, editing, information seeking, feedback, and communication. This study examined the relationships of AI literacy and critical-thinking disposition with students' perceived AI-assisted academic communication. A quantitative, descriptive-correlational research design was employed for 250 undergraduate students from Philippine College Foundation Inc. (PCFI), Valencia City, Bukidnon, during Academic Year 2026–2027. The study used questionnaires addressing AI literacy, critical-thinking disposition, and perceived AI-assisted academic communication. Means and standard deviations were used for descriptive analysis, Pearson's product–moment correlation for bivariate relationships, and multiple linear regression for the joint and unique predictive contributions of the two predictors. The results show positive correlations between AI literacy and perceived AI-assisted academic communication ($r = .540$, $p < .001$) and between critical-thinking disposition and the outcome ($r = .519$, $p < .001$). The reported regression model explains 41.6% of the variance in the outcome ($R^2 = .416$; adjusted $R^2 = .412$), $F(2, 247) = 88.150$, $p < .001$. These findings suggest that AI literacy and critical-thinking disposition are relevant correlates of students' perceptions of AI-assisted academic communication.

Keywords: artificial intelligence literacy, critical-thinking disposition, AI-assisted academic communication, higher education, predictive-correlational design

INTRODUCTION

Artificial intelligence (AI) has rapidly transformed higher education, where students increasingly encounter AI-powered applications in academic writing, information seeking, brainstorming, editing, feedback, translation, and communication. Generative artificial intelligence (GenAI), including large language models and conversational systems, has expanded the role of AI from a technological tool into an interactive academic assistant. Students can use these applications to generate ideas, improve grammar and style, clarify difficult concepts, organize information, obtain feedback, and complete academic tasks more efficiently.

These benefits are accompanied by risks. AI-generated content may contain inaccurate information, fabricated references, bias, or misleading explanations. UNESCO (2023) therefore recommends a human-centered approach to generative AI in education that foregrounds privacy, equity, transparency, ethics, and meaningful pedagogical use. The quality of AI-assisted academic communication depends partly on whether students can select appropriate tools, formulate useful prompts, assess generated responses, and retain responsibility for their academic work.

AI literacy is broader than the ability to operate an application. It includes understanding AI concepts and limitations, recognizing AI systems, applying AI appropriately, evaluating outputs, considering ethical implications, and maintaining agency when interacting with AI. Carolus et al. (2023) developed the Meta AI Literacy Scale (MAILS) as a multidimensional framework addressing the application and understanding of AI, AI detection, AI ethics, and related competencies. Laupichler et al. (2022) identified the need for systematic AI

literacy development and assessment in higher and adult education. Kandlhofer et al. (2023) likewise highlighted variation in university students' AI knowledge, reinforcing the importance of developing AI competencies across academic disciplines.

AI literacy is particularly relevant to academic communication. Students with stronger AI literacy may be better able to formulate prompts, select suitable tools, identify limitations, verify generated information, and decide when AI assistance is appropriate. The adapted MAILS instrument used in the present study covers application, understanding, detection, ethical considerations, creation and development, self-efficacy, AI-supported learning, persuasion literacy, and emotion regulation. These dimensions represent both practical competencies and the ability to manage the influence of AI on users' judgments and experiences.

A second relevant factor is critical-thinking disposition. Critical thinking involves not only cognitive skills but also a willingness to question assumptions, examine evidence, consider alternative perspectives, evaluate sources, reflect on decisions, and seek justified conclusions. This disposition is important in AI-mediated academic communication because fluent AI responses can appear authoritative even when they are inaccurate or incomplete. Liu et al. (2025) discussed both opportunities for generative AI to support critical thinking and risks of uncritical dependence in EFL education. Melisa et al. (2025) similarly underscored the importance of maintaining students' active intellectual engagement in higher education.

AI literacy and critical-thinking disposition may be complementary. AI literacy provides knowledge and practical competencies for understanding and using AI, while critical-thinking disposition supports questioning, evaluation, verification, and reflection. Students who understand AI's limitations and are inclined to examine evidence may be better positioned to use AI as support rather than as a substitute for their own judgment. Recent studies have begun to examine connections between AI literacy and critical thinking in health-professions education (Jiang et al., 2026; Xin et al., 2026).

The Philippine higher education context makes this topic particularly relevant. Students increasingly encounter generative AI in academic writing, research, and communication. Alvite and Baradillo (2025) reported perceived benefits related to efficiency and writing support alongside concerns about overdependence, academic integrity, authenticity, trust, and critical thinking. These mixed experiences suggest that students' perceptions of AI-assisted academic communication may be shaped by both their AI-related competencies and their disposition to think critically.

Although research has examined AI literacy, critical thinking, and AI-supported writing, fewer studies have considered AI literacy and critical-thinking disposition together as predictors of students' perceived AI-assisted academic communication. Positive perceptions of AI do not necessarily indicate informed or responsible use. Students may regard AI as convenient while lacking the ability to evaluate its outputs, or they may be highly critical while remaining uncertain about the technology. Examining both predictors in one model can provide a more integrated understanding.

This study aimed to determine the predictive contributions of AI literacy and critical-thinking disposition to students' perceived AI-assisted academic communication. It examined the levels of the three constructs, the relationships between each predictor and the outcome, and the unique and combined contributions of the predictors. The findings were intended to inform educational practice and institutional initiatives that promote competent, reflective, and ethical use of AI in academic communication.

Statement of the Problem

This study examined the predictive effects of AI literacy and critical-thinking disposition on students' perceived AI-assisted academic communication. Specifically, it sought to answer the following questions:

1. What is the level of students' AI literacy in terms of application, understanding, AI detection, ethical considerations, AI creation and development, AI self-efficacy, AI-supported learning, AI persuasion literacy, and AI emotion regulation?

2. What is the level of students' critical-thinking disposition in terms of systematic and analytical thinking, open-mindedness, confidence in reasoning, reflective thinking, and truth-seeking?

3. What is the level of students' perceived AI-assisted academic communication in terms of perceived usefulness, confidence, ease of use, behavioral intention, perceived benefits, concerns, trust, ethics, authenticity, and challenges?

4. Is there a significant relationship between students' AI literacy and perceived AI-assisted academic communication?

5. Is there a significant relationship between students' critical-thinking disposition and perceived AI-assisted academic communication?

6. Do AI literacy and critical-thinking disposition, singly or in combination, significantly predict students' perceived AI-assisted academic communication?

THEORETICAL AND CONCEPTUAL FRAMEWORK

The study is conceptually anchored in the multidimensional AI literacy framework represented by the adapted MAILS of Carolus et al. (2023), together with the construct of critical-thinking disposition. AI literacy is represented by application, understanding, detection, ethics, creation and development, self-efficacy, AI-supported learning, persuasion literacy, and emotion regulation. Critical-thinking disposition is represented by systematic and analytical thinking, open-mindedness, confidence in reasoning, reflective thinking, and truth-seeking. The dependent variable, perceived AI-assisted academic communication, covers perceived usefulness, confidence, ease of use, behavioral intention, perceived benefits, concerns, trust, ethics, authenticity, and challenges.

AI literacy and critical-thinking disposition are treated as independent or predictor variables, while perceived AI-assisted academic communication is the dependent variable. Both predictors will be entered into a multiple linear regression model to estimate their unique and combined statistical contributions. The framework does not assume causality; it proposes that the predictor variables may explain variation in students' perceptions.

The proposed regression model is:

$$\mathbf{PAAC = \beta_0 + \beta_1(AIL) + \beta_2(CTD) + \varepsilon}$$

where PAAC represents perceived AI-assisted academic communication; AIL represents AI literacy; CTD represents critical-thinking disposition; β_0 is the intercept; β_1 and β_2 are regression coefficients; and ε is the error term.

Hypotheses

The following null hypotheses were tested at the .05 level of significance:

H_{o1}: There is no significant relationship between students' AI literacy and their perceived AI-assisted academic communication.

H_{o2}: There is no significant relationship between students' critical-thinking disposition and their perceived AI-assisted academic communication.

H_{o3}: AI literacy does not significantly predict students' perceived AI-assisted academic communication.

H_{o4}: Critical-thinking disposition does not significantly predict students' perceived AI-assisted academic communication.

H_{05}: AI literacy and critical-thinking disposition, taken collectively, do not significantly predict students' perceived AI-assisted academic communication.

METHODOLOGY

Research Design

A quantitative, descriptive-correlational research design was employed. Descriptive statistics were used to summarize the three study constructs; Pearson's product–moment correlation was used to examine their bivariate associations; and multiple linear regression was used to estimate the unique and joint statistical contributions of AI literacy and critical-thinking disposition to perceived AI-assisted academic communication.

Locale of the Study

The study was conducted in Philippine College Foundation Inc., Valencia City, Bukidnon, Philippines. The institution was selected based on accessibility, permission to conduct the research, and the presence of undergraduate students with experience using AI tools for academic purposes.

Respondents of the Study

The respondents were 250 undergraduate students enrolled in the selected higher education institution. Eligible participants were officially enrolled in the A.Y. 2026-2027, have used at least one AI-powered tool for academic purposes (e.g., writing, brainstorming, grammar correction, research assistance, information seeking, or summarization), and voluntarily provided informed consent.

Research Instruments

The first instrument is a 34-item questionnaire adopted from the Meta AI Literacy Scale (MAILS) developed by Carolus et al. (2023). It covered application of AI, understanding of AI, AI detection, ethical considerations, AI creation and development, AI self-competency, AI-supported learning, AI persuasion literacy and AI emotion regulation.

The second instrument is a 20-item questionnaire attributed in the proposal to Liu et al. (2026). The items were planning and organizing problem solving, evidence evaluation, open-mindedness, confidence in reasoning, independent understanding, reflective decision-making, source credibility, and truth-seeking.

The third instrument is a 40-item questionnaire attributed to Ibraeva et al. (2026). It assesses perceived usefulness, confidence, familiarity, intention to use, comfort, privacy, perceived quality, grammar and style support, efficiency, trust, fairness, authenticity, ethical concerns, and challenges.

The adopted instruments underwent pilot testing. The AI Literacy Questionnaire obtained a Cronbach's Alpha of 0.79, the Critical-Thinking Disposition Questionnaire obtained 0.86 and the Perceived AI-Assisted Academic Communication Questionnaire obtained 0.81.

Scoring Procedure

To interpret the level of AI Literacy, Critical-Thinking Disposition and Perceived AI-Assisted Academic Communication, the following scoring procedure were used.

Table 1. Scoring Procedure for AI Literacy

Scale	Range	Description	Qualitative Interpretation
5	4.21–5.00	Strongly Agree	Highly Literate
4	3.41–4.20	Agree	Literate

3	2.61–3.40	Neutral	Slightly Literate
2	1.81–2.60	Disagree	Not Literate
1	1.00–1.80	Strongly Disagree	Highly Not Literate

Table 2. Scoring Procedure for Critical-Thinking Disposition

Scale	Range	Description	Qualitative Interpretation
5	4.21–5.00	Strongly Agree	Highly Positive
4	3.41–4.20	Agree	Positive
3	2.61–3.40	Neutral	Moderately Positive
2	1.81–2.60	Disagree	Negative
1	1.00–1.80	Strongly Disagree	Highly Negative

Table 3. Scoring Procedure for Perceived AI-Assisted Academic Communication

Scale	Range	Description	Qualitative Interpretation
5	4.21–5.00	Strongly Agree	Very High
4	3.41–4.20	Agree	High
3	2.61–3.40	Neutral	Moderate
2	1.81–2.60	Disagree	Low
1	1.00–1.80	Strongly Disagree	Very Low

Data-Gathering Procedure

The study was conducted through a systematic data-gathering procedure. First, approval was secured from the institutions' research committee and relevant ethics review body to ensure that the study complied with institutional and ethical requirements. Afterwards, permission was obtained from the selected higher education institution and the academic units concerned before the commencement of data collection. The three research questionnaires, together with the informed-consent form, were prepared and reviewed. Pilot testing were conducted to assess the instruments' content validity, reliability, and item performance. Eligible students were then recruited through approved channels and informed about the study's objectives, voluntary participation, confidentiality, and right to withdraw before providing their informed consent. The questionnaires were administered using an approved online survey platform, allowing participants sufficient time to complete their responses. After data collection, the accomplished questionnaires were screened for missing responses, duplicate entries, invalid response patterns, and eligibility. The data were coded, organized, and prepared for statistical analysis, with reverse coding applied only to items identified in the finalized scoring procedure. Finally, the cleaned dataset was analyzed using appropriate statistical techniques and software, and the findings were interpreted and reported in accordance with the research questions and hypotheses.

Ethical Considerations

Ethical considerations were observed throughout the conduct of the study. Before participating, the students were provided with clear information regarding the study's purpose, procedures, duration, foreseeable risks and benefits, data handling practices, and contact information for research-related concerns. Participation was voluntary, and the respondents were informed of their right to decline or withdraw from the study without penalty or adverse academic consequences, subject to the limitations of withdrawing data after anonymization or aggregation. To protect their privacy, names and other directly identifying information were not collected unless necessary and duly authorized. Anonymous response codes were utilized to maintain confidentiality, and individual responses were not disclosed to instructors or administrators in identifiable form. All personal information and research data were handled in accordance with the Philippine Data Privacy Act of 2012 (Republic Act No. 10173), relevant institutional policies, and applicable research ethics guidelines. Electronic records were stored securely, with access restricted to authorized individuals, and were managed in accordance with the established data retention and destruction procedures. Recruitment and questionnaire administration were also conducted in a manner that minimized potential coercion, ensuring that participation or refusal did

not affect students' grades, academic standing, or access to institutional services. Furthermore, the licensing, copyright, and permission requirements for the research instruments were considered to ensure their appropriate use in the study.

Statistical Analysis

The data gathered from the respondents were analyzed using appropriate descriptive and inferential statistical techniques. Means and standard deviations were computed to determine the levels and variability of students' AI literacy, critical-thinking disposition, and perceived AI-assisted academic communication. Pearson's product–moment correlation was employed to examine the relationships between AI literacy and perceived AI-assisted academic communication, as well as between critical-thinking disposition and perceived AI-assisted academic communication. Multiple linear regression analysis was subsequently performed to determine the individual and combined predictive contributions of AI literacy and critical-thinking disposition to perceived AI-assisted academic communication. The regression results were evaluated using the coefficient of determination (R^2), adjusted R^2, overall F-statistic, unstandardized and standardized regression coefficients, standard errors, t-statistics, p-values, and confidence intervals. The assumptions of regression analysis, including linearity, independence of observations, normality of residuals, homoscedasticity, multicollinearity, and the presence of influential observations, were also examined. Variance inflation factors (VIF) and tolerance statistics were assessed to determine potential multicollinearity between the predictor variables. All inferential statistical tests were evaluated at a 0.05 level of significance, with the interpretation of results considering not only statistical significance but also the magnitude of relationships and predictive effects.

RESULTS AND DISCUSSION

Table 1 Level of Students' AI Literacy

Dimension	M	SD	Interpretation
Application	3.81	0.61	Literate
Understanding	3.75	0.63	Literate
AI Detection	3.41	0.71	Literate
Ethical Considerations	4.01	0.56	Literate
AI Creation and Development	3.28	0.75	Slightly Literate
AI Self-Efficacy	3.68	0.64	Literate
AI-Supported Learning	3.90	0.59	Literate
AI Persuasion Literacy	3.35	0.72	Slightly Literate
AI Emotion Regulation	3.47	0.69	Literate
Overall	3.63	0.54	Literate

The results revealed that respondents obtained an overall AI literacy mean of 3.63 (SD = 0.54), interpreted as Literate, indicating that they generally possess the knowledge and competencies necessary to use AI technologies. Among the dimensions, ethical considerations recorded the highest mean (M = 4.01, SD = 0.56), followed by AI-supported learning (M = 3.90, SD = 0.59) and application (M = 3.81, SD = 0.61). These findings suggest that students are particularly knowledgeable about responsible AI use and the application of AI tools to support their academic activities. However, AI creation and development obtained the lowest mean (M = 3.28, SD = 0.75), interpreted as Slightly Literate, followed by AI persuasion literacy (M = 3.35, SD = 0.72). This indicates that students may have comparatively limited competencies in understanding how AI systems are developed and how AI-generated information can influence their perceptions and decisions. The findings are consistent with the multidimensional perspective of AI literacy presented by Carolus et al. (2023), which emphasizes that AI literacy encompasses not only the ability to use AI tools but also the knowledge, understanding, evaluation, and responsible application of these technologies. The results suggest that although students demonstrate adequate AI literacy, further learning opportunities are needed to strengthen their competencies in AI creation, development, and critical evaluation of AI-generated content. This pattern is

broadly consistent with the multidimensional account of AI literacy advanced by Carolus et al. (2023), which treats AI literacy as more than operational familiarity, and with Laupichler et al. (2022), who emphasized the need for systematic AI literacy development in higher and adult education. The comparatively lower scores in AI creation and development and persuasion literacy suggest that practical use may be more developed than deeper understanding of how AI systems are produced or how their outputs may shape users' judgments. This interpretation is consistent with the distinction between using AI tools and understanding their underlying capabilities and limitations.

Table 2 Level of Students' Critical-Thinking Disposition

Dimension	M	SD	Interpretation
Systematic and Analytical Thinking	3.73	0.63	Positive
Open-Mindedness	3.87	0.59	Positive
Confidence in Reasoning	3.56	0.69	Positive
Reflective Thinking	3.81	0.64	Positive
Truth-Seeking	3.67	0.67	Positive
Overall	3.73	0.53	Positive

The results revealed that respondents obtained an overall critical-thinking disposition mean of 3.73 (SD = 0.53), interpreted as Positive, indicating that students generally demonstrate favorable dispositions toward critical thinking. Among the dimensions, open-mindedness recorded the highest mean (M = 3.87, SD = 0.59), followed by reflective thinking (M = 3.81, SD = 0.64) and systematic and analytical thinking (M = 3.73, SD = 0.63). These findings suggest that students are generally receptive to different perspectives, capable of reflecting on their ideas, and inclined to approach academic concerns systematically. Meanwhile, truth-seeking obtained a mean of 3.67 (SD = 0.67), while confidence in reasoning registered the lowest mean (M = 3.56, SD = 0.69), although both were still interpreted as Positive. This indicates that, despite their generally favorable critical-thinking disposition, students may benefit from further opportunities to strengthen their confidence in evaluating evidence, constructing logical arguments, and making independent judgments. The findings suggest that students possess positive critical-thinking dispositions, particularly in open-mindedness and reflective thinking, which are essential in evaluating information and making informed academic decisions, especially when engaging with AI-generated content. The prominence of open-mindedness and reflective thinking is relevant to the concerns raised in the literature about maintaining active intellectual engagement when students use generative AI. Liu et al. (2025) reviewed both the potential of generative AI to support critical thinking and the risk of uncritical dependence in EFL education, while Melisa et al. (2025) emphasized the importance of critical thinking in higher education in the age of AI. The present descriptive results add a context-specific account of students' self-reported dispositions; they do not directly measure the quality of students' critical-thinking performance.

Table 3 Level of Students' Perceived AI-Assisted Academic Communication

Dimension	M	SD	Interpretation
Perceived Usefulness	4.07	0.54	High
Confidence	3.65	0.67	High
Ease of Use	4.01	0.56	High
Behavioral Intention	3.78	0.63	High
Perceived Benefits	4.10	0.52	High
Concerns	3.42	0.76	High
Trust	3.57	0.69	High
Ethics	3.93	0.58	High
Authenticity	3.60	0.71	High
Challenges	3.38	0.77	Moderate
Overall	3.75	0.52	High

The results revealed that respondents obtained an overall mean of 3.75 (SD = 0.52), interpreted as High, indicating that students generally have favorable perceptions of AI-assisted academic communication. Among the dimensions, perceived benefits recorded the highest mean (M = 4.10, SD = 0.52), followed by perceived usefulness (M = 4.07, SD = 0.54) and ease of use (M = 4.01, SD = 0.56). These findings suggest that students recognize the advantages of AI tools in improving the efficiency and effectiveness of their academic communication and consider these tools relatively easy to use. Ethics (M = 3.93, SD = 0.58) and behavioral intention (M = 3.78, SD = 0.63) also obtained high interpretations, reflecting students' awareness of responsible AI use and willingness to continue utilizing these technologies. Meanwhile, confidence, trust, and authenticity likewise received high ratings. However, challenges obtained the lowest mean (M = 3.38, SD = 0.77), interpreted as Moderate, while concerns recorded a mean of 3.42 (SD = 0.76), interpreted as High. These results indicate that although students generally appreciate the benefits of AI-assisted academic communication, they still encounter certain difficulties and maintain concerns regarding its use. The findings suggest that students view AI as a useful and beneficial academic communication tool, although attention should be given to addressing the challenges and concerns associated with its integration into academic tasks. This generally favorable pattern is compatible with the student experiences discussed by Alvite and Baradillo (2025), who reported perceived benefits of generative AI for academic writing alongside concerns about overdependence, integrity, authenticity, and trust. The present results similarly show high ratings for perceived benefits and usefulness while indicating that concerns and challenges remain. Differences in study design, population, and measurement mean that the findings should be compared conceptually rather than treated as directly equivalent.

Table 4 Correlation Between AI Literacy and Perceived AI-Assisted Academic Communication

Variables	r	p	Decision	Interpretation
AI literacy and Perceived AI-Assisted Academic Communication	.540	< .001	Reject H_0	Significant positive relationship

A moderate positive association was observed between AI literacy and perceived AI-assisted academic communication (r = .540, p < .001). Students reporting higher AI literacy also tended to report more favorable perceptions of AI-assisted academic communication. This association is consistent with the view that understanding AI capabilities and limitations, selecting suitable tools, and evaluating outputs are relevant to students' experiences of AI-supported academic tasks. However, the correlational result does not establish that greater AI literacy causes more favorable perceptions. The direction and magnitude of the association should be interpreted in light of the single-institution, cross-sectional design and the use of self-report measures. The result should be retained only after verification against the final dataset and statistical output. The association is conceptually consistent with the multidimensional AI literacy literature, particularly Carolus et al. (2023) and Laupichler et al. (2022), which emphasizes competencies extending beyond basic tool operation. However, those works provide a framework for understanding AI literacy rather than a direct replication of this study's specific outcome measure; therefore, the present coefficient should be regarded as context-specific.

Table 5 Correlation Between Critical-Thinking Disposition and Perceived AI-Assisted Academic Communication

Variables	r	p	Decision	Interpretation
Critical-Thinking Disposition and Perceived AI-Assisted Academic Communication	.519	< .001	Reject H_0	Significant positive relationship

A moderate positive association was also found between critical-thinking disposition and perceived AI-assisted academic communication (r = .519, p < .001). This suggests that students who report stronger tendencies toward open-mindedness, systematic analysis, reflection, and reasoned judgment also tend to report more favorable perceptions of AI-assisted academic communication. One possible interpretation is that students who are willing to examine evidence and consider alternatives may be better equipped to engage constructively with AI tools. Nevertheless, the finding represents an association rather than evidence that critical-thinking disposition causes favorable perceptions. It should be interpreted alongside the study's cross-sectional design

and self-report measures, and verified using the original analysis output. This interpretation is consonant with the concerns synthesized by Liu et al. (2025) and Melisa et al. (2025) regarding the need to preserve learners' evaluation, reflection, and independent judgment when using generative AI. The present study contributes correlational evidence about disposition and perceived communication, but it does not directly test whether students actually evaluate AI outputs accurately.

Table 6

R	R^2	Adjusted R^2	F	df	p	N
.645	.416	.412	88.150	2, 247	< .001	250

Multiple Regression Model Predicting Perceived AI-Assisted Academic Communication

$$PAAC = 0.941 + 0.395(AIL) + 0.369(CTD) + \varepsilon$$

The multiple regression model was statistically significant, $R = .645$, $R^2 = .416$, adjusted $R^2 = .412$, $F(2, 247) = 88.150$, $p < .001$. On the reported values, AI literacy and critical-thinking disposition jointly account for 41.6% of the variance in perceived AI-assisted academic communication in this sample. The remaining 58.4% represents variance not explained by these two predictors in the fitted model; it should not automatically be attributed to specific omitted variables. The adjusted R^2 (.412) indicates a similar level of explanatory performance after adjustment for the number of predictors. These statistics describe model fit and do not establish causation or out-of-sample predictive accuracy. Interpretation is conditional on verification of the dataset, regression assumptions, and model output.

Table 7 Regression Coefficients for Predicting Perceived AI-Assisted Academic Communication

Predictor	B	SE	β	t	p
Constant	0.941	0.213	—	4.410	< .001
AI Literacy	0.395	0.050	.410	7.901	< .001
Critical-Thinking Disposition	0.369	0.051	.376	7.262	< .001

In the reported coefficient table, AI literacy was positively associated with perceived AI-assisted academic communication after controlling for critical-thinking disposition ($B = 0.395$, $SE = 0.050$, $\beta = .410$, $t = 7.901$, $p < .001$). Critical-thinking disposition also showed a positive unique association ($B = 0.369$, $SE = 0.051$, $\beta = .376$, $t = 7.262$, $p < .001$). The standardized coefficient for AI literacy was numerically larger than that for critical-thinking disposition in this model. This comparison is descriptive and should not be taken to mean that the difference between the two coefficients is statistically significant; a formal test would be needed to establish such a difference. Both coefficients and their significance levels must be checked against the original software output before publication.

CONCLUSION AND RECOMMENDATION

The findings indicate that respondents had literate levels of AI literacy, positive critical-thinking dispositions, and high perceptions of AI-assisted academic communication. AI literacy and critical-thinking disposition were positively associated with the outcome, and both contributed significantly to the reported regression model. AI literacy had the larger standardized coefficient in the fitted model, although the difference between coefficients was not formally tested. These findings support the educational relevance of combining AI-related competencies with critical-thinking development.

Higher education institutions may consider integrating AI literacy into academic writing, research, and communication courses. Learning activities can address prompt formulation, verification of AI-generated information and references, data privacy, bias awareness, academic integrity, and transparent disclosure of AI assistance. Critical-thinking instruction may be reinforced through evidence evaluation, source comparison, reflective analysis, and reasoned argumentation. Faculty development can help instructors guide students in

responsible AI use and design assessments that preserve independent reasoning and intellectual responsibility. Institutions should establish clear, context-sensitive policies for AI use in teaching and learning.

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REFERENCES

1. Alvite, M. O. L., & Baradillo, D. G. (2025). A phenomenographic study on the experiences of students on the use of generative artificial intelligence (GAI) in academic writing. International Journal of Education Research for Higher Learning, 34(1).
2. Carolus, A., Koch, M. J., Straka, S., Latoschik, M. E., & Wienrich, C. (2023). MAILS—Meta AI literacy scale: Development and testing of an AI literacy questionnaire based on well-founded competency models and psychological change- and meta-competencies. Computers in Human Behavior: Artificial Humans, 1(2), 100014. https://doi.org/10.1016/j.chbah.2023.100014
3. Celik, I., Dindar, M., Muukkonen, H., & Järvelä, S. (2022). The promises and challenges of artificial intelligence for teachers: A systematic review of research. TechTrends, 66, 616–630.
4. Fitzek, S., & Bârgăoanu, A. (2025). Introducing large language models in communication and public relations education: A mixed-methods pilot study. International Journal of Artificial Intelligence in Education, 35, 2478–2494. https://doi.org/10.1007/s40593-025-00477-7
5. Ibraeva, G. R., Sergeeva, O. V., Zheltukhina, M. R., Gribova, Y. V., Kelina, K. G., & Sokolova, N. L. (2026). Measuring student perceptions of AI-assisted academic communication: A questionnaire development study. Online Journal of Communication and Media Technologies. https://doi.org/10.30935/ojcmt/18492
6. Jiang, X., Wei, Q., Pang, S., & Liu, Q. (2026). The mediating role of critical thinking between AI literacy and learning burnout in nursing students using generative AI: A cross-sectional descriptive study. Nurse Education Today, 165, 107169. https://doi.org/10.1016/j.nedt.2026.107169
7. Kandlhofer, M., et al. (2023). What do university students know about artificial intelligence? Development and validation of an AI literacy test. Computers and Education: Artificial Intelligence, 5, 100165. https://doi.org/10.1016/j.caeai.2023.100165
8. Kim, J., Yu, S., Detrick, R., Wang, J., Li, N., et al. (2025/2026). Students-generative AI interaction patterns and its impact on academic writing. Journal of Computing in Higher Education, 38, 504–525.
9. Laupichler, M. C., Aster, A., Schirch, J., & Raupach, T. (2022). Artificial intelligence literacy in higher and adult education: A scoping literature review. Computers and Education: Artificial Intelligence, 3, 100101. https://doi.org/10.1016/j.caeai.2022.100101
10. Liu, J., Sihes, A. J. B., & Lu, Y. (2025). How do generative artificial intelligence (AI) tools and large language models (LLMs) influence language learners' critical thinking in EFL education? A systematic review. Smart Learning Environments, 12, 48.
11. Liu, W., Ma, H., Ma, S., Chen, Y., & Li, G. (2026). The development and validation of a critical thinking disposition scale for high school students. Acta Psychologica, 262, 106055. https://doi.org/10.1016/j.actpsy.2025.106055
12. Melisa, R., Ashadi, A., Triastuti, A., Hidayati, S., Salido, A., Luansi Ero, P. E., Marlini, C., Zefrin, Z., & Al Fuad, Z. (2025). Critical thinking in the age of AI: A systematic review of AI's effects on higher education. Educational Process: International Journal, 14, e2025031. https://doi.org/10.22521/edupij.2025.14.31
13. Pensky, A. E. C., Usdan, J. H., & Chang, H. (2025). Generative AI's impact on graduate student professional writing productivity and quality. International Journal of Artificial Intelligence in Education, 35, 4057–4082. https://doi.org/10.1007/s40593-025-00528-z
14. Republic Act No. 10173. (2012). Data Privacy Act of 2012. Republic of the Philippines.

15. UNESCO. (2023). Guidance for generative AI in education and research. UNESCO.
16. Xin, Y., Yan, D., Luo, S., Luo, M., & Li, L. (2026). AI literacy mediates AI-assisted diagnosis participation and critical thinking among medical students under supervision. npj Digital Medicine, 9, 344.