

Reliance on AI tools and comprehension and writing skills of first year students at selected HEIs

Rosalie Delantes Buban, Ed.D.^a, Olga Jara Domingo, PhD^b,

Jomarie Torres Suamen^c, John Paul Dolosa Pelojero^d,

Josephine Calisay Bermudez, PhD^e

roseerbuban@gmail.com^a, domingoolga1217@gmail.com^b, suamenjomarie@gmail.com^c,
johnpaulpelojero@gmail.com^d, jojie72002@yahoo.com^e
Laguna University^{abde}, City College of Calamba^c, Laguna, Philippines

Abstract

The study examined first-year students' reliance on AI tools and their relationship with their comprehension and writing skills, addressing a gap in research on how AI affects students transitioning to higher education. Using a quantitative approach with surveys, comprehension assessments, and writing tests analyzed via SPSS, the study measured AI usage, reading comprehension, and writing skills. Students were moderately reliant on AI tools for gadgets (49.6%) and Wi-Fi (73.4%), but less so for app subscriptions. Moderate reliance was observed in both reading (mean = 2.88) and writing (mean = 2.89). Students demonstrated good to excellent reading comprehension and adequate writing skills (mean = 3.03). AI reliance showed a very weak correlation with comprehension and a moderate positive correlation with writing skills. AI use did not significantly affect reading comprehension but moderately influenced writing skill development. The study recommends guided AI use, training workshops, reflective exercises, and further exploration of AI applications to enhance the students' writing skills and not overly reliant on AI tools.

Keywords: artificial intelligence tools, reading comprehension, writing skills, AI reliance

1. Introduction

1.1 Rationale

Artificial intelligence (AI) has increasingly become part of students' academic routines, particularly in tasks related to writing and comprehension. In the Philippine setting, students commonly rely on AI tools for functions such as grammar correction and plagiarism checking, with their usage influenced more by personal attitudes than by deeply held beliefs about learning (Fabro et al., 2024). Although these technologies provide convenience and support in completing academic requirements, concerns have been raised about their potential to produce generalized or inaccurate outputs and to encourage academic dishonesty when misused (Bacallo et al., 2024). In some institutions, including FEU Manila, Philippines, students tend to depend on AI due to limited time for academic tasks; however, this dependence may reduce opportunities for independent thinking and skill development (Dela Rosa et al., 2024).

Studies conducted locally further show that while students are somewhat familiar with AI tools such as ChatGPT, many still lack sufficient training on how to use them effectively and responsibly (Balahadia et al., 2023). Likewise, writing tools like QuillBot have been found helpful in improving sentence-level

accuracy, particularly grammar, but they do not significantly enhance overall writing quality (Lucas et al., 2025). In contrast, when AI tools are used appropriately and with guidance, they can contribute positively to the organization of ideas and increase learners' confidence in writing (Brozo et al., 2025). These findings suggest that the impact of AI largely depends on how students utilize these technologies in their learning process. Despite the growing body of research, there remains a limited understanding of how AI influences students during their transition to higher education, especially in relation to comprehension and writing skills (Espartinez, 2025). This lack of evidence is more apparent in provincial higher education institutions (HEIs), where studies examining students' cognitive engagement and independent learning in AI-assisted environments are still scarce. In Laguna, Philippines, higher education continues to adapt to ongoing digital advancements, with AI tools becoming more accessible to students. First-year college students, who are adjusting to the demands of tertiary education, often face difficulties that require strong reading comprehension and writing abilities. These skills are essential for academic success, yet they may be affected by students' increasing reliance on AI technologies.

Given these conditions, it is important to investigate how the use of AI relates to students' comprehension and writing performance. This study seeks to address the existing gap in local research by examining the extent to which first-year college students in selected HEIs in Laguna, Philippines depend on AI tools and how this reliance influences their academic skill development. The findings aim to provide evidence that can guide educators and institutions in designing effective teaching strategies and policies for the responsible integration of AI in higher education.

The objectives were (i) to determine the AI reliance of the first-year students on AI tools based on the demographic profile in terms of (a) gadgets, (b) internet connection, (3) app subscription; (ii) to determine the comprehension and writing skills of the respondents; (iii) to analyze the relationship between the reliance on AI tools and the comprehension of the respondents, (iv) to analyze the relationship between the reliance on AI tools and the writing skills of the respondents.

The hypotheses are testable statements about the relationship between variables. The research design is described as quantitative, descriptive, and correlational. The numerical data measures the AI reliance, comprehension, and writing skills. The hypotheses ask whether relationships between variables exist, while the correlational design is the method used to test those relationships statistically.

1.2. Theoretical Implications

The study contributes to the existing theories and literature in education, language learning, and educational technology. This may support or challenge the idea that students learn effectively through active engagement and independent knowledge construction. If excessive dependence on AI tools reduces critical thinking and comprehension, the findings may suggest that technology should complement not replace active learning processes. The study may contribute to theories such as the Technology Acceptance Model (TAM) by explaining how perceived usefulness and ease of use influence students' reliance on AI tools in academic tasks. It may also expand understanding of how AI integration affects learning behaviors among first-year college students. The findings may provide insights into how AI-assisted writing affects students' development of grammar, organization, vocabulary, and originality. The study can help determine whether AI enhances writing proficiency or weakens students' independent writing abilities.

1.3. Practical Implications

The findings of the study may provide valuable applications for students, teachers, schools, and policymakers regarding the responsible use of AI tools in education.

For Students - The study may help students become aware of the advantages and disadvantages of excessive reliance on AI tools. It can encourage balanced and responsible use of AI to improve learning while still developing independent comprehension and writing skills.

For Teachers and Instructors - The findings may guide educators in designing instructional strategies

and assessment methods that promote critical thinking, originality, and authentic student outputs despite the growing use of AI technologies.

For Schools and Higher Education Institutions (HEIs) - The study may help institutions develop policies and guidelines regarding ethical AI use in academic work. Schools may also strengthen digital literacy programs and provide training on responsible AI integration in learning.

For Curriculum Developers - The results may encourage the inclusion of AI literacy, critical reading, and academic writing enhancement programs in the curriculum to ensure students use AI as a learning aid rather than a substitute for learning.

For Policymakers and Educational Administrators - The study may serve as a basis for creating educational policies that regulate the use of AI tools while promoting academic integrity, innovation, and quality education.

For Future Researchers - The study may provide baseline data and research directions for further investigations on AI dependence, academic performance, critical thinking, and technology-assisted learning among students.

1.4 Related Studies and Literature

1.4.1. AI, AI Reliance, and Comprehension Skills

In the field of education, AI has emerged as a transformative tool that supports adaptive and personalized learning. AI-driven systems can analyze students' learning patterns and provide customized instructional content, thereby improving engagement and comprehension (eSchool News, 2024). These systems enable timely feedback and targeted interventions, which contribute to more efficient learning experiences. Similarly, McGehee (2024) emphasized that AI integration in education promotes individualized learning by aligning instructional strategies with students' needs, preferences, and abilities. AI-powered tools, such as virtual tutors, further support independent learning and critical thinking development.

Despite various benefits, the concept of AI reliance has gained increasing attention in recent literature. Zhang et al. (2024) define AI reliance as the frequent and excessive use of AI tools to the extent that it interferes with independent learning and academic skill development. Existing studies have primarily focused on factors influencing AI adoption, such as perceived usefulness and ease of use (Acosta-Enriquez et al., 2024), while fewer studies have explored its relationship with academic outcomes like comprehension, self-efficacy, and critical thinking (Acosta-Enriquez et al., 2024b).

The widespread adoption of AI tools such as ChatGPT highlights both opportunities and risks. On one hand, AI enhances comprehension by simplifying complex information and improving learning efficiency (Adiguze et al., 2023; Bacallo et al., 2024). On the other hand, excessive reliance may weaken critical thinking, creativity, and independent analysis (Habib et al., 2023). Additional concerns include plagiarism, data privacy, and unequal access to technology, which may further widen educational disparities (Mhlanga, 2022; eSchool News, 2024). In language learning contexts, AI tools have been shown to improve technical skills, yet they may limit deeper cognitive engagement when overused (Avsheniuk et al., 2024). Social influences and ethical considerations also play a role in shaping students' reliance on these technologies (Zhu et al., 2024).

As AI technologies become increasingly embedded in daily life, there is a growing tendency for users to depend on them, sometimes without recognizing their limitations. This widespread integration underscores the need for responsible use and critical awareness. Moreover, ethical challenges such as algorithmic bias, misinformation, and job displacement highlight the importance of maintaining human oversight in AI applications (Dwivedi et al., 2023).

1.4.2. AI Tools, AI Reliance, and Writing Skills

AI-powered writing assistants, such as QuillBot, further exemplify the integration of technology in writing development. Alharbi (2023) noted that AI writing tools provide real-time suggestions and human-like text generation, making them valuable for both novice and experienced writers.

Empirical findings on the effectiveness of AI tools in improving writing skills, however, remain mixed. Conversely, other research highlights potential drawbacks, including reduced originality, overdependence, and limited skill development (Liu et al., 2023). Lo (2023) further emphasized that while AI tools support academic writing, they also raise concerns related to plagiarism and academic integrity. Recent studies reinforce this dual perspective. Brozo et al. (2025) found that tools such as Grammarly, QuillBot, and ChatGPT improved writing structure and organization, enhancing overall efficiency. However, Lucas et al. (2025) reported that although QuillBot assisted students in completing writing tasks, it did not significantly improve their overall writing skills. Local studies similarly indicate that while students benefit from AI tools for grammar checking and content organization, these tools do not necessarily lead to long-term skill development.

The increasing reliance on AI in writing tasks also raises concerns about students' ability to develop independent writing competencies. Avila (2023) argued that excessive dependence on AI may hinder students from fully developing their potential, as they rely on machines to perform tasks traditionally requiring human effort and creativity. This concern is echoed in studies highlighting that overreliance may diminish critical thinking and originality in academic writing (Seo et al., 2021; Dela Rosa et al., 2024). The reviewed literature indicates that AI technologies have become integral to modern education, particularly in supporting comprehension and writing tasks. AI-powered tools such as ChatGPT, Grammarly, and QuillBot provide significant benefits, including improved efficiency, accessibility, and personalized learning experiences. These tools enable students to process information more quickly, enhance writing quality, and manage academic tasks more effectively.

However, the literature also underscores the potential risks associated with excessive reliance on AI. Overdependence may negatively affect comprehension, critical thinking, and independent learning skills. While AI can facilitate learning, it may also reduce students' cognitive engagement and limit the development of essential academic competencies when used excessively. Furthermore, ethical concerns such as plagiarism, data privacy, and unequal access highlight the need for responsible integration of AI in education.

Overall, the relationship between AI reliance and academic skills remains complex and inconclusive. While AI offers substantial advantages in enhancing comprehension and writing efficiency, its long-term impact on students' independent learning abilities requires further investigation. This gap in the literature supports the need for studies that examine the relationship between AI reliance and students' comprehension and writing skills, particularly within specific educational contexts.

1.5. Hypotheses

The hypotheses were (i) There was no significant relationship between the reliance on AI tools and their comprehension skills; and (ii) There was no significant relationship between the reliance on AI tools and their writing skills.

The hypotheses were testable statements about the relationship between variables. The hypotheses asked whether relationships between variables exist, while the correlational design was the method used to test those relationships statistically.

2. Methods

2.1. Research Design

The research design was described as quantitative, descriptive, and correlational. This study employed a quantitative descriptive–correlational research design. The descriptive component was used to determine the level of students' reliance on AI tools, as well as their comprehension and writing skills. The numerical data measured the AI reliance, comprehension, and writing skills. The correlational component examined the relationship between reliance on AI tools and students' comprehension and writing skills. No variables are manipulated, as the study focused on naturally occurring conditions.

2.2. Research Locale

The study was conducted in selected Higher Education Institutions (HEIs) in the 4th District of Laguna, Philippines. Educational institutions were chosen based on accessibility and the presence of first-year students who actively engage in academic writing and comprehension tasks namely ACTS Computer College, Laguna State Polytechnic University (LSPU), Laguna University (LU), and Philippine Women's University (PWU)–Sta. Cruz campuses. These institutions were selected due to their diverse student populations, the presence of academic programs that require substantial reading and writing tasks, and their geographical proximity, which facilitated data collection.

ACTS Computer College is located along P. Guevarra Avenue, Santa Cruz, Laguna, Philippines approximately 200 meters from PWU. It is a private institution recognized as a pioneer computer school in the area, offering undergraduate programs in Computer Studies, Business Management, and Teacher Education. Philippine Women's University (PWU)–Sta. Cruz is situated along M.H. del Pilar Street, Santa Cruz, Laguna. It is a private academic institution offering four baccalaureate programs.

Laguna State Polytechnic University (LSPU)–Sta. Cruz Main Campus is located in Barangay Bubukal, Santa Cruz, Laguna. The university offers 26 undergraduate programs and is approximately two kilometers from Laguna University.

Laguna University (LU), also located in Barangay Bubukal, Santa Cruz, Laguna, is a recognized local university established in 2006. It offers 16 collegiate programs catering to a wide range of academic disciplines.

2.3. Population and Sampling

The respondents of the study were first-year students enrolled in selected HEIs. A sample was drawn using the stratified random sampling technique to ensure representation across different programs or sections. Using Slovin's formula with a 5% margin of error, a total sample size of 379 respondents was determined. The participants were selected through random sampling to ensure that each member of the population had an equal chance of being included in the study. Participation was voluntary, and respondents were informed of the purpose of the research prior to data collection.

2.4. Research Instrument

The study utilized a combination of instruments, including a survey questionnaire, a reading comprehension assessment, and a writing test, to gather the necessary data.

Data was collected using a structured questionnaire divided into three main parts. Part I contained the demographic profile of the respondents. Part II contained the questions on the level of reliance on AI tools. Part III was about comprehension. And Part IV contained the questions on writing skills.

The study established the validity and reliability of the instrument, making it suitable for measuring

students' dependency on AI tools in academic contexts.

To further assess students' competencies, two sets of tests were administered. One for comprehension and another for writing skills. These assessments provided objective measures to complement the self-reported data obtained from the questionnaire.

A Likert scale of 1-5 was used to measure responses. Prior to data collection, permission was obtained from the school administrators of the selected HEIs. Ethical considerations were strictly observed throughout the study, including ensuring voluntary participation, maintaining confidentiality, and protecting the anonymity of the respondents.

Data were collected through an online survey administered via Google Forms. The questionnaire link was distributed to the selected respondents, resulting in a total of 379 completed responses. The adapted questionnaire measured the frequency and extent of AI tool usage, including applications such as Grammarly,

ChatGPT, and QuillBot, using a Likert scale to capture the respondents' level of reliance.

Additionally, demographic information such as type of device used, internet connectivity (e.g., Wi-Fi, mobile data, computer rentals), and application subscriptions was collected. The reading comprehension and writing assessments were administered to evaluate the respondents' actual performance, allowing for a more comprehensive analysis of the relationship between AI reliance and academic skills.

2.5. Validity and Reliability of the Instrument

Parts I and II were developed by the researchers and underwent content validation by experts in education and research. Parts II and IV of the instrument were adapted from the instrument developed by Capinding (2024). To complement the self-reported data obtained from the questionnaire, another set of tests was administered on comprehension and writing skills.

Reliability of the responses was measured using Cronbach's alpha. A pilot test was conducted among respondents who possessed similar characteristics to the actual participants of the study but were not included in the final sample. The collected responses were analyzed using Cronbach's alpha coefficient to determine the internal consistency of the questionnaire items. For questionnaire Set A, with 30 selected students, the Cronbach's alpha on reliance on AI tools for comprehension is 0.914, and for writing is 0.896, which are interpreted as excellent and good, respectively. For questionnaire Set B (self-reported responses), the Cronbach's alpha on reliance on AI tools for comprehension is 0.960, and for writing is 0.976, which are interpreted as excellent, respectively.

2.6. Data Gathering Procedure

Permission was secured from school authorities before the data collection. The questionnaires in Google Forms were distributed to the respondents at the selected HEIs online through the college deans. The purpose of the study was explained, and informed consent was obtained, along with other ethical considerations. Sufficient time was afforded to all respondents to complete the survey. The responses were collected, organized, and analyzed.

2.7. Statistical Treatment of Data

The frequency and percentage were used to describe the respondents' demographic profile. Mean and standard deviation were used to determine the level of reliance on AI tools, comprehension, and writing skills. Pearson Product-Moment Correlation (r), was used to determine the significant relationship between (a) AI tool reliance and comprehension skills and (b) AI tool reliance and writing skills.

2.8. Ethical Considerations

Participation was purely voluntary. Respondents' identities remained confidential and anonymous. The data collected were used strictly for academic purposes. Informed consent was obtained before participation. Respondents had the right to withdraw from the study at any stage without any form of penalty.

2.9 Research Participants

The participants of the study consisted of first-year college students enrolled in selected Higher Education Institutions (HEIs). The respondents were selected using a stratified random sampling technique to ensure proportional representation from different academic programs and sections within the participating institutions. This sampling method was considered appropriate because it allowed the researchers to obtain a more representative sample of first-year students who utilize AI tools for academic purposes.

Prior to data collection, permission to conduct the study was secured from the administrators of the selected HEIs. After approval was granted, the researchers coordinated with department heads and class advisers regarding the distribution of the survey questionnaire. The respondents were identified by the HEI's class advisers. 379 respondents gave their consent to participate in the study. Approximately, 10% of the respondents were from PWU; another 10% from LSPU, Santa Cruz Campus; 21% from ACTS Computer College, and 59% from Laguna University. The participation of the respondents was entirely voluntary, and they had the right to withdraw from the study at any point without any form of penalty. No participants were forced or coerced into joining the research, and those who participated effectively selected themselves into the study by providing informed consent and completing the questionnaire.

Data were collected from the selected HEIs online using Google Forms. The link was sent to the class advisers in the selected HEIs together with the approved letter of consent from the head of the HEI. No monetary compensation or payment was provided to the participants. However, the respondents were informed that their participation would contribute to understanding the effects of reliance on AI tools on students' comprehension and writing skills.

The study strictly adhered to ethical standards in research. Approval and clearance were obtained from the appropriate institutional authorities before the conduct of the study. The researchers ensured compliance with institutional ethical guidelines and research protocols. Informed consent was secured from all participants before data collection. The purpose of the study, procedures, potential benefits, and respondents' rights were clearly explained.

Confidentiality and anonymity were strictly observed. The questionnaires did not require personal identifiers such as names or student numbers. All collected data were stored securely and used solely for academic and research purposes. Safety monitoring procedures included ensuring that participation posed no physical, psychological, or emotional harm to the respondents. The study involved minimal risk, as it only required respondents to answer survey questions related to their use of AI tools and their perceived comprehension and writing skills.

2.10 Sample size, power, and precision

The target sample size was determined using a stratified random sampling method to ensure that the number of participants was sufficient to represent the population and provide reliable statistical results. A total of 379 respondents agreed to participate in the study. Since the study employed a quantitative descriptive–correlational research design, no separate experimental conditions or treatment groups were used.

The sample size was considered adequate to achieve sufficient statistical power for detecting significant relationships between students' reliance on AI tools and their comprehension and writing skills. The selected respondents were expected to provide reliable information regarding their experiences and perceptions related to the use of AI tools in academic tasks.

The achieved sample generally reflected the characteristics of the target population, particularly in terms of being first-year students enrolled in the selected HEIs. However, minor differences may have existed due to variations in course enrollment, availability of respondents, a change of mind to participate, and accessibility during data collection. These differences were acknowledged as limitations of the study. To maintain precision and validity, the researchers ensured that the conclusions and interpretations of the findings were limited only to the respondents included in the study. Therefore, the results cannot be generalized to all college students or to institutions outside the selected HEIs without further investigation. The findings are applicable only within the context and scope of the participants involved in the research.

2.11 Measures and covariates

This study examined the relationship between students' reliance on AI tools and their comprehension and writing skills among first-year students in selected Higher Education Institutions (HEIs). The primary variables measured in the study were: (1) level of reliance on AI tools, (2) comprehension, and (3) writing skills. Demographic variables such as the number of gadgets owned, means for internet connection, subscription to AI tools, and AI tool reliance were also collected and treated as covariates to provide additional descriptive information and to identify possible variations among respondents.

The methods used to collect data were written questionnaires. The study utilized a structured written questionnaire designed to measure the respondents' level of reliance on AI tools and their comprehension and writing skills. The instrument was composed of four major sections: (1) demographic profile, (2) reliance on AI tools, (3) comprehension, and (4) writing skills. The questionnaire employed a five-point Likert scale ranging from strongly disagree to strongly agree to assess the respondents' perceptions and experiences regarding the use of AI tools in academic activities.

Parts I and II were developed by the researchers and underwent content validation by experts in education and research. Parts II and IV of the instrument were adapted from the instrument developed by Capinding (2024). To complement the self-reported data obtained from the questionnaire, another set of tests was administered on comprehension and writing skills. The adapted research instrument from related studies and existing literature was modified to ensure alignment with the objectives of the study and the context of first-year college students in selected Higher Education Institutions (HEIs). To further assess students' competencies, two sets of tests were administered: one for reading comprehension and another for writing skills. These assessments provided objective measures to complement the self-reported data obtained from the questionnaire. The primary outcome measures included the respondents' perceived comprehension and writing skills, while the predictor variable was the level of reliance on AI tools for comprehension and writing. Some of the demographic information collected was used only for descriptive purposes and not included in the final correlational analysis.

To establish the psychometric properties of the instrument, the questionnaire underwent content validation by education, language, technology, and research experts. To ensure the reliability of the research instrument, a pilot test was conducted among respondents who possessed similar characteristics to the actual participants of the study but were not included in the final sample. The collected responses were analyzed using Cronbach's alpha coefficient to determine the internal consistency of the questionnaire items. For questionnaire Set A, with 30 selected students, the Cronbach's alpha on reliance on AI tools for comprehension is 0.914, and for writing is 0.896 which are interpreted as excellent and good respectively. For questionnaire Set B (self-reported responses), the Cronbach's alpha on reliance on AI tools for comprehension is 0.960, and for writing is 0.976 which are interpreted as excellent, respectively.

In terms of biometric and measurement properties, the instrument demonstrated stability and consistency in measuring the intended constructs through standardized administration procedures and uniform response scales. The use of closed-ended items minimized ambiguity and improved the accuracy of responses. Evidence of cultural validity was ensured by adapting the language and content of the questionnaire to the educational and sociocultural context of Filipino first-year college students. The instrument was reviewed to

ensure that the terms, examples, and statements used were understandable, relevant, and appropriate for students in selected HEIs in the Philippines. This process helped ensure that the instrument accurately reflected the experiences and perspectives of the respondents within their local academic environment.

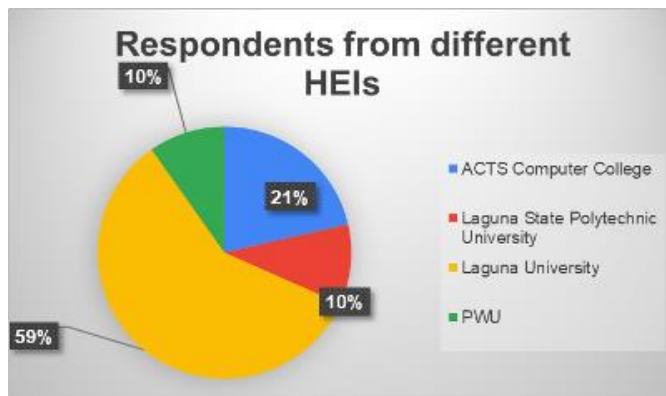
2.12 Experimental manipulations or interventions

No interventions or experimental manipulations were used in this study.

4. Results and Discussion

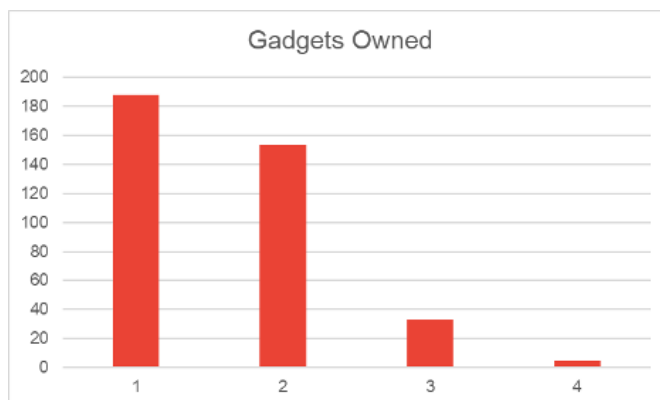
This section present the empirical findings from the analysis and interpretation of the data gathered from the responses through the research instruments with relevant statistical analysis supporting the interpretation of the results.

Figure 2 Number of Respondents from Different HEIs



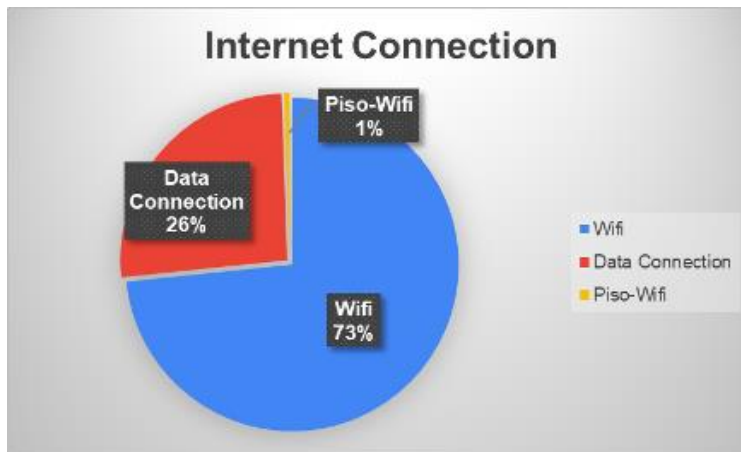
Laguna University had the highest representation in the study, while the other three institutions contributed smaller but still significant portions of the sample. The data ensures that perspectives from multiple institutions were included, which adds to the diversity and generalizability of the findings.

Figure 3 Number of Gadgets Owned



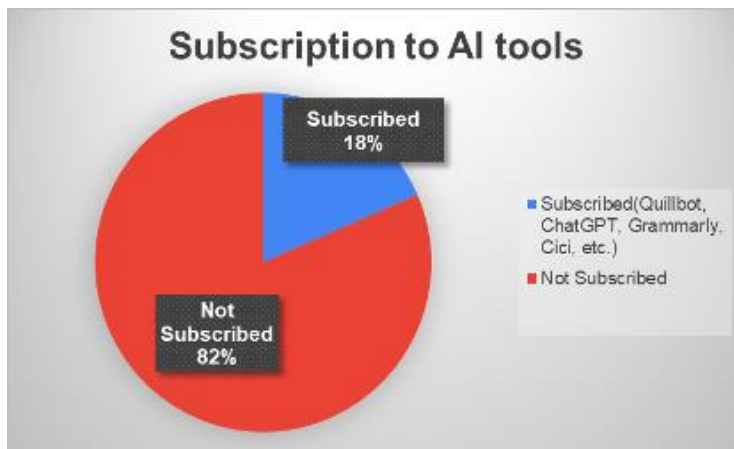
The majority of respondents have access to at least one digital device, which is essential in the context of AI tool usage, online learning, and digital academic tasks.

Figure 4 Means for Internet Connection



The data shows that while a strong majority of students benefit from Wi-Fi connectivity, a substantial portion still depends on mobile data, which may present challenges for consistent access to online academic resources.

Figure 5 Subscription to AI Tools



The data imply that while AI tools are known and used among students, subscription-based access remains limited, potentially due to financial constraints, lack of awareness, or limited perceived need for premium features.

Table 1. Reliance on Artificial Intelligence in the Domain of Reading and comprehension

Reliance on artificial intelligence in the domain of reading and comprehension	Score	SD	Descriptive Interpretation
I use AI-generated summaries to understand lengthy articles or documents.	3.17	1.12	Moderately Agree

I rely on AI-powered tools for language translation when reading content in a foreign language.	2.99	1.20	Moderately Agree
I depend on AI-driven recommendations to discover new books, articles, or other reading materials.	2.71	1.11	Moderately Agree
I use AI-driven audiobook or text-to-speech applications to consume written content	2.32	1.14	Disagree
AI-driven news aggregators help me stay updated on current events.	2.56	1.17	Moderately Agree
I rely on AI-enhanced tools for extracting key information from research papers or academic articles.	3.03	1.14	Moderately Agree
AI-driven language comprehension tools assist me in understanding complex texts.	3.29	1.07	Moderately Agree
AI-driven search engine suggestions help me find relevant reading materials more efficiently.	2.99	1.12	Moderately Agree
AI-powered content curation tools assist me in organizing and managing my reading list.	2.71	1.15	Moderately Agree
I use AI-powered educational platforms for personalized learning experiences.	2.32	1.15	Moderately Agree
AI-driven accessibility tools help me consume written content more comfortably (e.g., screen readers).	2.56	1.14	Moderately Agree
AI-generated transcripts or subtitles assist me when watching videos or listening to podcasts.	3.03	1.29	Moderately Agree
I use AI-driven language learning apps to improve my reading skills in different languages.	3.29	1.18	Moderately Agree
I depend on AI-generated book reviews or ratings when deciding what to read.	3.18	1.09	Disagree

Table 1 presents the data about the reliance of the respondents on artificial intelligence in the domain of reading. It reflects the respondents' level of agreement with various statements about their use of AI tools for reading comprehension. The overall average mean score is 2.86, with a standard deviation of 0.83, which corresponds to the interpretation "Moderately Agree." This suggests that students, on average, moderately rely on AI tools to support their reading and understanding of texts. The highest mean score is for the statement "AI-driven language comprehension tools assist me in understanding complex texts" ($M = 3.32$, $SD = 1.07$), indicating a strong moderate agreement. Similarly, high scores were observed for the use of AI-generated summaries ($M = 3.31$), AI-powered educational platforms ($M = 3.17$), and AI-driven search engine

suggestions ($M = 3.20$), which shows that students frequently use AI tools for simplifying and supporting academic reading tasks. The lowest mean scores were reported for "I use AI-driven audiobook or text-to-speech applications" ($M = 2.30$) and "I depend on AI-generated book reviews or ratings when deciding what to read" ($M = 2.35$), both interpreted as "Disagree." These indicate that such tools are less commonly used or relied upon by students in the context of reading comprehension. The results suggest that while students do not fully rely on AI tools, there is a moderate level of engagement with AI-driven platforms to aid their reading and learning. Tools that directly assist in comprehension, summarization, and academic search are more frequently used compared to those involving audiobooks or automated recommendations. The results are in line with the study made by Bacallo et al. (2024) that AI technologies help them comprehend a topic, as well as gain or increase their knowledge regarding a subject matter. The potential bias and threat to the internal validity of the results are attributed to the authenticity of the self-reported responses of the respondents and the amount of time they spent in answering the questionnaires. and threat to the internal validity of the results are attributed to the authenticity of the self-reported responses of the respondents and the amount of time they spent in answering the questionnaires.

Table 2. Reliance on Artificial Intelligence in the Domain of Writing

Reliance on artificial intelligence in the domain of writing	Mean	SD	Descriptive Interpretation
I utilize AI-based spelling and grammar checkers when composing written content.	2.32	1.14	Disagree
I rely on AI tools for generating ideas or suggestions when drafting written documents.	2.56	1.05	Moderately Agree
I use AI-driven writing assistants to enhance the overall quality of my written work.	3.03	1.11	Moderately Agree
AI-generated templates or frameworks assist me in structuring my written content.	3.29	1.12	Moderately Agree
I depend on AI-powered paraphrasing tools to rephrase sentences in my written work.	3.18	1.16	Moderately Agree
I use AI-driven auto-complete features when composing emails or other written correspondence.	2.76	1.10	Moderately Agree
AI-driven content creation tools help me generate creative or promotional written materials.	2.32	1.12	Disagree
AI-driven content creation tools help me generate creative or promotional written materials.	2.56	1.11	Moderately Agree
I rely on AI-enhanced proofreading tools to identify errors in my written work.	3.03	1.15	Moderately Agree
AI-based sentiment analysis tools assist me in gauging the tone of my written communication.	3.29	1.11	Moderately Agree
I use AI-powered social media management tools to generate or schedule written posts.	3.18	1.16	Moderately Agree
AI-generated suggestions for email subject lines improve the effectiveness of my written communication.	2.76	1.13	Moderately Agree
I depend on AI-based content summarization tools for condensing lengthy written materials.	3.10	1.11	Moderately Agree

AI-powered writing prompts or exercises help me overcome writer's block.	2.56	1.11	Moderately Agree
I rely on AI-generated suggestions for enhancing the clarity and coherence of my written content.	3.03	1.13	Moderately Agree
I depend on AI-based content summarization tools for condensing lengthy written materials.	3.29	1.10	Moderately Agree

The data in table 2 shows that students have a moderate level of dependence on AI tools to assist in writing tasks, with an overall average mean score of 2.89 and a standard deviation of 0.86, interpreted as "Moderately Agree" (Table 2). This suggests that AI is commonly used as a writing aid, though not fully relied upon by the majority. The highest mean scores ($M = 3.29$) were recorded for statements such as "*AI-generated templates or frameworks assist me in structuring my written content*," "*AI-based sentiment analysis tools assist me in gauging the tone of my written communication*," and "*I depend on AI-based content summarization tools for condensing lengthy written materials*." These results reflect that students find value in using AI to improve structure, clarity, and tone in their written outputs. The lowest mean scores were found in statements like "*I utilize AI-based spelling and grammar checkers*" ($M = 2.32$) and "*AI-driven content creation tools help me generate creative or promotional written materials*" ($M = 2.32$), both interpreted as "Disagree." This implies that students either do not frequently use these features or may not perceive them as particularly helpful or necessary.

Overall, the findings indicate that while students were not heavily dependent on AI for all aspects of writing, they do moderately rely on AI tools for improving quality, organization, and clarity of their written content. These tools are viewed more as enhancers rather than complete writing replacements. These findings align with Brozo et al. (2025), demonstrating AI's effectiveness for improving writing structure and organization when used responsibly. Additional studies confirm AI tools enhance academic writing through text generation and editing support (Alharbi, 2023; Kurniati & Fithriani, 2022), with students showing strong AI literacy and satisfaction (Dingal, 2024). The potential bias and threat to the internal validity of the results are attributed to the authenticity of the self-reported responses of the respondents and the amount of time they spent in answering the questionnaires.

Table 3. Reading Comprehension Test Scores

Score	Respondents
15	124
14	71
13	66
12	27
11	23
10	5
9	15
8	19
7	12
6	12
5	7
4	3
Average	12.55

Table 3 shows strong reading comprehension performance, with an average score of 12.55 (likely out of 15). Most students scored highly: 124 achieved perfect/near-perfect scores (15), followed by 71 (14) and 66 (13). Only 10 scored below 5, indicating a few low performers. These results demonstrate robust comprehension skills overall and align with research showing AI's educational benefits (Kopp & Thomsen, 2023).

Table 4. Assessed Writing Skills

Self-Assessed Writing Skills	Mean	SD	Descriptive interpretation
I can write a good academic paragraph	3.18	0.86	Moderately Agree
I can write a clear topic sentence that identifies the topic and controlling idea of a paragraph.	2.76	0.84	Moderately Agree
I can logically organize my ideas when I write a paragraph.	3.10	0.82	Moderately Agree
I can logically support and develop my main point when I write a paragraph.	2.88	0.83	Moderately Agree
I can write using an academic style and tone.	3.03	0.83	Moderately Agree
I can use appropriate vocabulary and word forms to effectively communicate with the reader.	3.29	0.86	Moderately Agree
I can use a variety of sentence structures.	3.18	0.82	Moderately Agree
I can use appropriate spelling, capitalization, and punctuation.	2.76	0.91	Moderately Agree
I can write an accurate summary of information that I have read in English.	3.10	0.83	Moderately Agree
I can write an accurate paraphrase of information that I have read in English.	2.88	0.84	Moderately Agree
I can write accurate quotations in English	2.92	0.85	Moderately Agree
I can write a good academic research paper.	3.29	0.82	Moderately Agree
I can write a good introduction for an English essay.	3.18	0.82	Moderately Agree
I can write a good conclusion for an English essay.	2.76	0.82	Moderately Agree
I can effectively brainstorm to gather ideas before writing.	3.10	0.86	Moderately Agree

Table 4 exhibits the respondents' assessed writing skills. The results show that students generally hold a moderately positive view of their writing abilities, as reflected in the average mean score of 3.03 with a standard deviation of 0.68, which corresponds to the descriptive interpretation "Moderately Agree." This suggests that students believe they possess adequate writing skills but still recognize areas where improvement may be needed. The statements "*I can use appropriate vocabulary and word forms to effectively communicate with the reader*" and "*I can write a good academic research paper,*" both with a mean score of 3.29. Similarly, students expressed confidence in their ability to write academic paragraphs, introductions, and use varied sentence structures, each with mean scores around 3.18. These responses imply that students are most confident in foundational academic writing components. The lowest-rated skills were "*I can write a clear topic sentence*" and "*I can write a good conclusion for an English essay,*" both with mean scores of 2.76, indicating relatively less confidence in structuring and wrapping up written content effectively. Slightly lower confidence was also seen in their ability to paraphrase, summarize, and punctuate accurately, with mean scores between 2.76 and 2.92. While students generally moderately agree that they are capable of performing key academic writing tasks, the data suggest that targeted support in areas such as summarizing, paraphrasing, and writing strong conclusions may further enhance their overall writing proficiency.

Table 5. Correlation Between Gadgets Owned, Internet Connection, AI Tool Subscription, AI Reliance for Reading and Reading Comprehension

	Gadgets Owned	AI tool subscription	Internet Connectivity	AI reliance for reading
r-value	-0.062	.101*	.127*	-0.094
p-value	0.229	0.049	0.013	0.069
N	379	379	379	379

*. Correlation is significant at the 0.05 level (2-tailed).

Table 5 shows the correlation analysis of the relationship between students' reading comprehension and four variables: gadgets owned, AI tool subscription, internet connectivity, and AI reliance for reading.

The results show that gadgets owned has an r-value of -0.062 with a p-value of 0.229, indicating a very weak negative correlation that is not statistically significant. This means that the number of digital devices a student owns does not have a meaningful relationship with their reading comprehension skills. Both AI tool subscriptions ($r=0.101$, $p=0.049$) and internet connectivity ($r=0.127$, $p=0.013$) demonstrate weak but statistically significant positive correlations, suggesting these factors modestly support reading performance. AI reliance for reading shows a negligible negative trend ($r=-0.094$, $p=0.069$) that approaches but does not reach statistical significance, potentially indicating that excessive reliance on AI tools might marginally hinder independent comprehension development. These findings corroborate previous research by Liu et al. and Dwivedi et al. (2023) regarding AI's potential cognitive impacts, while also supporting Bacallo et al.'s (2024) observations about critical thinking development and Habib et al.'s (2023) findings on creative

confidence in learning contexts. The analysis collectively suggests that while digital access and AI tools can enhance reading outcomes, balanced usage remains crucial to maintain fundamental comprehension skills. The results implied that the respondents are not reliant on AI tools with regard to comprehension. The null hypothesis is accepted. There is no significant relationship between students' reliance on AI tools and their comprehension.

Table 6. Correlation Between Gadgets Owned, Internet Connection, AI Tool Subscription, AI Reliance for Writing and Writing Skills

	Gadgets Owned	AI tool subscription	Internet Connectivity	AI reliance for writing
r-value	.192**	-0.061	.120*	.249**
p-value	0.000	0.238	0.019	0.000
N	379	379	379	379

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

Table 6 shows the results of the Pearson correlation analysis indicating that gadgets owned has a moderate positive correlation with students' writing skills, with an r-value of 0.192 and a p-value of 0.000, which is highly significant at the 0.01 level, as shown in Table 6. This suggests that students who own more digital devices—such as smartphones, laptops, or tablets—tend to report better writing skills, possibly due to easier access to writing platforms, editing tools, and digital writing practice. Internet connectivity also shows a weak but statistically significant positive correlation, with an r-value of 0.120 and a p-value of 0.019. This implies that students with stable or reliable internet access are somewhat more likely to have stronger writing abilities. The availability of internet connectivity likely enables students to access writing resources, online grammar tools, research materials, and collaborative platforms that can help improve their writing performance. AI tool subscription has a very weak negative correlation ($r = -0.061$, $p = 0.238$) that is not statistically significant, indicating that simply subscribing to AI tools does not guarantee improved writing skills—it is the active and meaningful use of these tools that appears to make a difference. AI reliance for writing has the strongest correlation with writing skills among the variables, with an r-value of 0.249 and a p-value of 0.000, which is also highly significant at the 0.01 level. This indicates a moderate positive relationship, suggesting that students who regularly use AI tools (e.g., paraphrasing tools, grammar checkers, writing assistants) to support their writing tasks tend to perform better in writing. It is in agreement with the findings of the study of McGehe (2024) that AI tools helped improve writing efficiency. Specifically, the use of AI tools has been very helpful to students, ranging from getting started with an essay, writing an outline, and providing feedback on their work (Ukwandu et al., 2025). The results implied that the respondents are reliant on AI tools with regard to their writing skills. The null hypothesis is rejected. There is a significant relationship between students' reliance on AI tools and their writing skills.

4. Conclusion and Recommendations

4.1. Conclusion

The main objectives of the study were to determine the correlation between AI reliance and comprehension and the correlation between AI reliance and their writing skills.

1. There is a very weak negative correlation between AI reliance of the respondents and their comprehension. Therefore, the respondents are not reliant on AI tools with regard to their comprehension.
2. There is a moderate positive correlation between AI reliance of the respondents and their writing skills. The respondents are moderately reliant on AI tools with adequate writing skills. Therefore, the respondents are reliant on AI tools with regard to their writing skills.

4.2. Recommendations

Based on the findings and conclusions of the study, the researchers highly recommended the following:

- a. Integrate technical writing in the curriculum.

Colleges and universities may consider integrating technical writing in the curriculum, teaching first year college students to hone their independent writing skills.

- b. Target Weak Writing Skills

Focus on areas like conclusions, topic sentences, paraphrasing, and summarizing, with AI as support but human guidance as the lead.

- c. Sustain and Innovate AI Use

Explore new AI applications that would help the first year college students improve writing skills.

- d. Encourage Further Research

Determine the correlation between the higher college students' reliance on AI tools and their writing skills to find out if there is a need to provide refresher courses or remediation on technical writing before their thesis writing.

- d. Foundation for Future Research

Future researchers investigate AI usage in education, digital literacy, academic integrity, and student performance in higher education institutions.

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