ISSN (Online): 2455-3662
EPRA International Journal of Multidisciplinary Research (IJMR) - Peer Reviewed Journal
Volume: 11| Issue: 11| November 2025|| Journal DOI: 10.36713/epra2013 || SJIF Impact Factor 2025: 8.691 || ISI Value: 1.188

ARTIFICIAL INTELLIGENCE (AI) APPLICATION TOOLS USAGE AND ITS INFLUENCE ON THE ACADEMIC PERFORMANCE AMONG GRADE 11 STUDENTS IN TAFT NATIONAL HIGH SCHOOL

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Article DOI: https://doi.org/10.36713/epra24755
DOI No: 10.36713/epra24755

ABSTRACT

The rapid integration of Artificial Intelligence (AI) tools like ChatGPT, Quillbot, Grammarly, and Cici is actively transforming education in the Philippines, a nation with a tech-savvy, youthful population. This surge provides new avenues for personalized learning and enhanced student engagement, directly impacting how students approach reading and writing.

This research specifically sought to determine the influence of AI tools on the academic writing performance of Grade 11 students at Taft National High School during the first semester of the 2024-2025 academic year. The study utilized a descriptive-correlational quantitative design to examine the relationship between AI application tool usage and student academic performance.

The data analysis yielded several significant findings: A remarkable 66% of Grade 11 students reported using AI application tools daily for academic writing, indicating a high level of usage. The specific tool Cici was the most commonly used, consulted by 52% of the students. The average academic rating for students exposed to AI tools in their Reading and Writing subjects was 89.08%, placing their performance solidly in the Proficiency Level. Students generally held very favourable perceptions regarding the usage (Grand Mean: 4.532) and benefits (Grand Mean: 4.486) of AI tools, both showing a high level of agreement. Perceptions regarding challenges were also high (Grand Mean: 3.642).

A statistical correlation was established between AI usage and academic performance. The frequency of AI tool usage showed a moderate positive correlation ($r = 0.543$, $p < .001$) with Reading and Writing performance, meaning increased usage positively influences academic outcomes. Student perceptions of the usage and benefits of AI tools had a significant influence on their performance. Conversely, student perceptions of the challenges associated with AI tools ($r = -0.031$, $p = 0.830$) did not have a significant influence on their learning.

KEY WORDS: *Artificial Intelligence (AI), Academic Writing, Student Academic Performance*

INTRODUCTION

The integration of Artificial Intelligence (AI) application tools is transforming Philippine education, creating opportunities for personalized learning and enhanced students' engagement. Reflecting the nation's tech-savviness, a study by Instructure found that over 83% of Filipino students use AI tools in their academic pursuits (PinoyGPT, 2024).

Artificial Intelligence (AI) enhances learning through technologies like machine learning and natural language processing (Alneyadi et al., 2023), allowing educators to personalized instruction by using algorithms to analyze data and make predictions (Khan et al., 2022). Students easily access various AI tools such as ChatGPT, Quillbot, Grammarly, Cici and the trending Meta AI which significantly impacts their approach to writing and the overall writing process.

Academic writing, essential for research through its structured, data-driven arguments (Albadawy & Khalifa, 2024), is becoming easier with AI tools. However, this integration has created ethical concerns regarding plagiarism, authorship, and intellectual property (Salvagno et al., 2023), resulting in both beneficial and negative impacts on students and institutions.

The integration of AI tools significantly improves students' academic writing skills (Dja'far, V. H., & Hamidah, F. N. (2024), resonating with prior findings that highlight their benefits for quality and confidence (Al Mahmud, F., & ur Rahman, M.A 2023). Despite the positive influence, student uncertainty about continued use requires ongoing support and training (Kurniati & Fithriani, 2022). While AI adoption is debated proponents cite efficiency and outcomes, critics worry about reliance and critical thinking research gaps persist regarding the perceptions and context of rural high school students, specifically those in Taft, Eastern Samar, Philippines, which this paper aims to address by contextualizing how AI usage influences academic performance in Taft National High School.

Objectives

1. To identify the types of AI application tools are commonly used by the Grade 11 senior high school students in Reading and Writing subject.
2. To determine the frequency of AI application tools usage by students in Reading and Writing subject.

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3. To determine the academic grades of the grade 11 students in Reading and Writing subject in the s.y 2024-2025?
4. To assess the perceptions of the students on AI application tools in terms of:

4.1. Usage;
4.2. Benefits; and
4.3. Challenges.

5. To determine whether there is a significant relationship between AI application tools usage and academic performance in Reading and Writing subject of the Grade 11 senior high school students.
6. To determine whether there is a significant relationship between the students' perceptions on AI application tools and academic performance in Reading and Writing subject of the Grade 11 senior high school students.

METHODOLOGY

This study employed a descriptive-correlational quantitative design to describe and examine the relationship between Artificial Intelligence (AI) application tools usage and student academic performance. Descriptive analysis was used to describe the perceptions of students on the usage, benefits, and challenges of AI application tools in academic performance in Reading and Writing subject. A correlational analysis was used to examine the relationship between AI tools usage and academic performance. While quantitative method was used to evaluate and analyze data through the application of various statistical methods relevant in this study.

Sampling Design

This study employed purposive sampling technique to select the population size of the study. The respondents were the fifty (50) bona fide Grade 11 students of Taft National High School who are exposed to AI application tools to consult with their academic tasks. The sample size of this study was purposively selected from a particular grade level, including all 5 strands (ABM, HUMSS, STEM, TVL, and GAS) to represent the entire population of this study.

Statistical Design

The study determined AI tool usage by measuring the frequency of student use in learning. Academic performance was based on subject grades interpreted using DepEd Form 138 standards. Mean scores were used to analyze student's perceptions (usage, benefits and challenges) of AI tools in their Reading and Writing subject. Standard deviation assessed the data's dispersion from the mean. Lastly, the Spearman Rank Correlation was used to test the significant relationship between AI tool usage and academic performance in the Reading and Writing subject.

Geographical Area

This study was conducted at Taft National High School, Brgy. 5, Taft Eastern Samar, 41.3 kilometer away from Eastern Samar State University, Borongan Eastern Samar. This educational institution offers both junior and senior high school education and do practice school-based management. The selection of this locale was based on the accessibility and convenience of the researchers.

RESULTS

I. Types of AI Application Tools Used by the Grade 12 Senior High School Students.

The descriptive analysis revealed that among 50 respondents, 26 of them used Cici to consult with their learning in the reading and writing subject, 22 of them used ChaptGPT, 2 of them used Quillbot and Grammarly respectively, while none of them used Bing Chat application tool in learning.

II. Frequency of Usage of AI Application Tools

The data shows that most respondents used AI application tools daily for their studies. 14 0f 50 used AI tools two or more times a day. 19 of 50 used AI tools once a day. 15 of 50 used AI tools few times a week. Only 2 of 50 used AI tools once a week. None used AI tools monthly, Overall, 33 of 50 students (66%) used AI tools at least once daily to aid their learning.

III. Students' Academic Performance in Reading and Writing Subject.

The majority of student respondents using AI tools demonstrated high academic performance. The overall mean grade was 89.08% classifying most students as proficient. 24 out of 50 respondents (48%) achieved 90% and above (Advanced). 22 out of 50 respondents (44%) scored 85%-89% (Proficient). None of the students scored below 80%.

IV. Students' Perceptions on the Usage, Benefits, and Challenges of Using AI Application Tools in Learning.

The mean scores for each statement regarding the perceptions of the students on the use of AI application tools in learning are shown in table 2. Students had a strong positive perception towards using AI tools in their learning, with an overall mean of 4.532 and a standard deviation 0.503. This indicates that AI tools are helpful and save time during academic writing. Students expressed strong agreement with the benefits of AI tools, reflected by an overall mean of 4.486 and a standard deviation of 0.503. Students agreed with the challenges of using AI tools with an overall mean of 3.642 but the responses showed higher variability (standard deviation of 0.457, with statement-level standard deviations ranging up to 0.812. A critical finding is that all respondents agreed that AI tools can generate inaccurate or misleading content. Critically, students did not believe AI tools have the potential to replace teachers in providing feedback.

V. Relationship between AI Application Tools Usage and Academic Performance in Reading and Writing subject.

A moderate positive correlation ($r = 0.543$) was found between AI tool usage and academic performance. The p-value is $< .001$ revealed that the result is statistically significant, thus, the researchers concluded that higher AI application usage is linked to higher academic performance in the subject.

VI. Relationship between AI Application Tools Usage and Academic Performance in Reading and Writing subject.

Students achieved an average grade of 89.08% in reading and writing. Correlational analysis showed that student's perceptions of the usage ($r = 0.325$, $p = 0.021$) and benefits ($r =$

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0.311, p = 0.028) of AI tools significantly and positively influence their academic performance. In addition, perceptions of AI challenges (r = 0.031, p = 0.830) do not significantly influence performance. This indicates that students are still able to learn effectively with AI tools, despite recognizing the challenges.

SUGGESTIONS

The department of education and teachers should promote AI tools such as Cici as study consultants but teach students to use them as support, not replacements, to prevent over-reliance. Students must use AI tools such as Cici to enhance skills, acting as learning guide, not replacing the student's role. Since AI consultation is convenient and effective, students should use AI tools daily based on their needs. All stakeholders must deepen their understanding of AI's usage, benefits, and challenges to integrate it for improved teaching and learning. Future research on AI's influence should be conducted with a wider population to yield more accurate results.

CONCLUSION

Cici is the common, effective AI tool for enhancing student learning and writing skills. Daily AI consultation positively impacts student learning. The 89.08% average grade implies AI tool use improves student academic performance. Despite challenges, students find AI tools helpful and convenient for better subject understanding and writing skills. Frequent AI use positively correlates with better subject understanding, academic performance, and writing skills. AI tools greatly influence student learning and writing skills, as perceptions of usage/benefits are positive and challenges are negative correlated with performance.

FIGURES AND TABLES

Figure 1: Common AI application tools used by the students

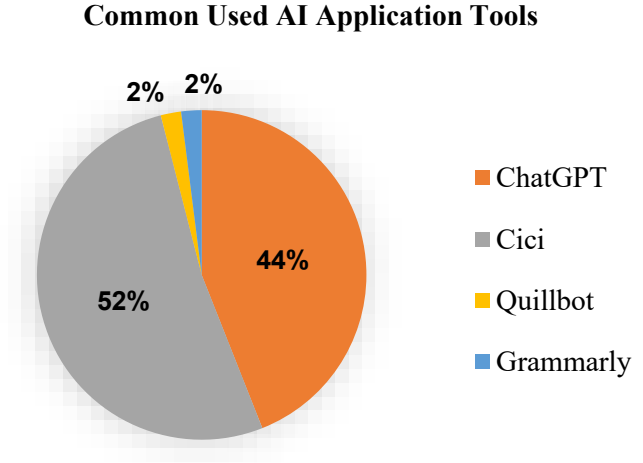
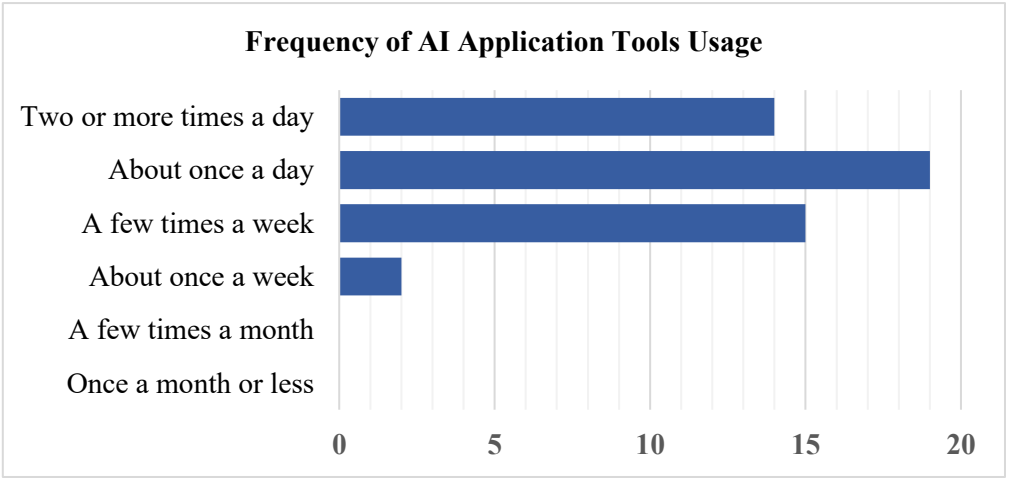


Figure 2: Frequency of usage that students consult with AI application tools



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Table 1: Academic Performance of Grade 12 students in reading and writing subject during the s.y. 2023-2024.

Academic Performance	Frequency	Percentage	Descriptors
90% and above	24	48%	Advanced
85% – 89%	22	44%	Proficient
80% – 84%	4	8%	Approaching Proficiency
75% – 79%	0	0	Developing
74% and below	0	0	Beginning
Mean		**89.08%**	**Proficient**

Table 2: Perceptions on the Use of AI Application Tools

Statement	Mean	SD	Interpretation
Use of AI Application Tools			
1. AI-based tools can help me generate ideas for my academic writing.	4.54	0.503	Strongly Agree
2. AI-powered grammar and spell-check tools improve the quality of my academic writing	4.52	0.505	Strongly Agree
3. AI feedback on writing style helps me revise and refine my academic writing effectively	4.54	0.503	Strongly Agree
4. Using AI tools in the academic writing process increases my confidence in the final product.	4.56	0.501	Strongly Agree
5. AI language translation tools facilitate cross-cultural communication in my academic writing	4.50	0.505	Strongly Agree
6. AI tools assist me in identifying and avoiding plagiarism in my academic writing.	4.56	0.501	Strongly Agree
7. AI tools help me save time during the academic writing process.	4.58	0.499	Strongly Agree
8. AI technology increases the efficiency of the proofreading process of my academic writing.	4.54	0.503	Strongly Agree
9. I trust AI-generated suggestions for improving the clarity of my academic writing.	4.50	0.505	Strongly Agree
10. AI tools offer valuable insights into improving structure and organization of my academic writing.	4.48	0.505	Strongly Agree
Average	**4.532**	**0.503**	**Strongly Agree**

Table 3: Perceptions on the Benefits of AI Application Tools

Statement	Mean	SD	Interpretation
Benefits of AI Application Tool			
1. Using AI writing tools helps me improve my academic writing by identifying and correcting grammar and spelling errors.	4.40	0.495	Strongly Agree
2. AI writing tools assist me in enhancing the clarity and coherence of my written content.	4.52	0.505	Strongly Agree
3. I use AI writing tools to save time when proofreading and editing my work.	4.46	0.503	Strongly Agree
4. AI writing tools help me to avoid unintentional plagiarism by checking for copied content.	4.52	0.505	Strongly Agree
5. The convenience of AI writing tools makes them an essential part of my academic writing process.	4.44	0.501	Strongly Agree
6. Using AI writing tools boosts my confidence in producing high-quality written assignments.	4.48	0.505	Strongly Agree
7. I rely on AI writing tools to help me meet deadlines for academic writing assignments.	4.50	0.505	Strongly Agree

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8.	AI-powered tools provide valuable suggestions and feedback that I find useful in my academic writing.	4.46	0.503	Strongly Agree
9.	The accuracy and effectiveness of AI writing tools make them indispensable for my academic writing.	4.52	0.505	Strongly Agree
10.	Using AI writing tools helps me improve my academic writing by identifying and correcting grammar and spelling errors.	4.56	0.501	Strongly Agree
	Average	**4.486**	**0.503**	**Strongly Agree**

Table 4: Perceptions on the Challenges of AI Application Tools

Statement	Mean	SD	Interpretation
Challenges of AI Application Tool			
1. AI tools generates inaccurate or misleading content when used in academic writing.	4.00	0.0000	Agree
2. AI tools encourage plagiarism in my academic writing	3.98	0.414	Agree
3. AI tools prompt me to become overly reliant on its assistance when used in academic writing	3.70	0.647	Agree
4. AI tools prompt ethical concerns when used in academic writing	3.70	0.647	Agree
5. Using AI tools in academic writing results in a decline in my creative abilities	3.50	0.789	Agree
6. Using AI tools in academic writing prompts me to abandon my critical thinking	3.44	0.812	Agree
7. Using AI tools in academic writing reduces the integrity of academic writing	3.92	0.340	Agree
8. AI tools have the potential to substitute for a teacher in providing feedback on my academic writing work	2.06	0.240	Disagree
9. AI application tools can handle and retain sensitive data which might raise privacy concerns.	4.02	0.319	Agree
10. AI application tools can lead to lack of transparency.	4.10	0.364	Agree
Average	**3.642**	**0.457**	**Agree**

Table 5: Correlation between the frequency of usage of AI application tools and Academic Performance in Reading and Writing Subject.

AI Application Tools Usage	Academic performance in Reading and Writing Subject	r-value	p-value	Decision
Frequency of usage of AI application tools.	Average grade is **89.08%**	0.543	<.001	Reject null hypothesis

The level of significance is set at 0.05

Table 6: Correlation between the students' perceptions on AI application tools and the Academic Performance in Reading and Writing Subject.

Students' Perception	Academic performance in Reading and Writing Subject	r-value	p-value	Decision
Use of AI Application Tools	Average grade is **89.08%**	0.325	0.021	Reject null hypothesis
Benefits of AI Application Tools		0.311	0.028	Reject null hypothesis
Challenges of AI Application Tools		-0.031	0.830	Accept null hypothesis

The level of significance is set at 0.05

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