Artificial Intelligence and Academic Achievement of Senior High School Students in a Public Senior High School in the Division of Negros Occidental

Ramila Denielle L. Lo[1], Ma. Quincy D. Dones[2], Trudy C. Cerbo[3], Dona L. Baldevia[4]

[1]La Castellana National High School-Senior High School, Philippines

[2,3]La Carlota City College, Philippines

[4]Antipolo National High School, Philippines

DOI: https://doi.org/10.47772/IJRISS.2026.100800151

Received: 12 August 2026; Accepted: 18 August 2026; Published: 29 August 2026

ABSTRACT

This study investigated the relationship between artificial intelligence (AI) and the academic achievement of Senior High School students at a public Senior High School in the Division of Negros Occidental during the School Year 2025–2026. Specifically, it examined students' demographic profiles, the extent of AI influence across key learning domains, academic achievement, and variations in both AI impact and performance across selected variables. Results indicated that most respondents were female students enrolled in the Humanities and Social Sciences (HUMSS) strand, predominantly from low-income households with parents who had attained secondary education. Despite these constraints, AI demonstrated a significant impact, significantly enhancing students' access to information, engagement, task efficiency, motivation, and self-directed learning. AI also facilitated collaboration through digital platforms, although it was less effective in fostering direct social interaction and providing personalized career guidance. The respondents achieved a mean grade of 87.09, interpreted as very satisfactory. Inferential analysis revealed no significant differences in AI impact across sex, strand, family income, and parental educational attainment, highlighting AI's inclusivity as a learning resource. However, significant differences in academic achievement were observed across academic strands and parental education levels. The findings suggest that while AI is a valuable and accessible educational tool that supports improved academic outcomes, excessive reliance on it may hinder the development of higher-order thinking skills. The study underscores the need for balanced AI integration, guided instructional practices, and the incorporation of AI literacy in the curriculum to optimize its educational benefits while addressing potential limitations.

Keywords: artificial intelligence, academic achievement, Senior High School, AI literacy, educational technology

INTRODUCTION

In recent years, the educational landscape has undergone a significant transformation driven by rapid technological advancements, particularly in Artificial Intelligence (AI). AI has found its way into classrooms through intelligent tutoring systems, adaptive learning platforms, AI-based writing assistants, and virtual teaching aides. These tools aim to enhance learning efficiency, support personalized instruction, and foster independent learning among students. As a result, senior high school students today are increasingly engaging with AI technologies as part of their academic experience (Madhu et al., 2024).

The integration of AI into education presented new opportunities to improve student academic achievement. With features such as real-time feedback, data-driven learning pathways, and automated content generation, AI has the potential to cater to diverse learning needs. However, its impact on academic performance remains under ongoing exploration. AI enables personalized learning by adapting educational content to meet the unique needs of

individual students. These experiences are increasingly achievable through AI-driven tools that analyze vast amounts of data to identify learning gaps and tailor interventions accordingly (Silva et al., 2024). Despite these functional advantages, research indicates that the influence of these technologies on formal scholastic outcomes remains complex, with some studies showing no significant direct correlation between AI engagement and overall academic performance (Dida-Agun & Abarquez, 2025). This contradiction highlights a critical conceptual gap in the literature: traditional metrics such as Grade Point Average (GPA) or standardized test scores fail to distinguish between whether AI improves foundational conceptual understanding and whether it merely creates a facade of performance through automated task completion (Chen & Wang, 2024). Furthermore, students often report moderate concerns about algorithmic bias, data privacy, and reduced meaningful teacher-student interaction (Musin et al., 2026a, 2026b). These underlying anxieties create a behavioral and psychological gap, as students' ethical reservations and self-regulation strongly mediate the extent to which they cognitively engage with these tools (Kim & Lee, 2025).

This dynamic exposes a severe contextual and methodological gap within local literature. While current institutional research focus remains fixed on structured, teacher-led, and curriculum-integrated AI platforms, the actual student reality is dominated by unregulated, self-directed generative AI use on personal devices, which remains heavily under-researched in secondary education (Styles & Taylor, 2024). Moreover, existing Philippine studies predominantly focus on urban, private, or resource-rich higher education institutions, leaving a distinct gap in the literature regarding the unique socioeconomic realities, technological constraints, and digital divide experienced by provincial public schools (Santos & Cruz, 2025).

METHODOLOGY

Research design

The current study utilized a descriptive-correlational design. This study employs a correlation design. A correlational design can be used to examine the relationship between two variables that have already been presented. This study is suitable because it aims to determine the relationship between the use of artificial intelligence platforms and the academic achievement of Senior High School students of one of the Senior High Schools in the Division of Negros Occidental.

According to Devi (2023), the research design aimed to examine group differences without manipulating variables. The descriptive-correlational method is a fact-finding study that provides adequate and accurate interpretation of the findings; it describes what is and emphasizes what exists, such as current conditions, practices, situations, or developing phenomena.

The respondents of the current study comprised Grade 12 Senior High School students from one of the Senior High Schools in the Division of Negros Occidental for School Year 2025-2026. Grade 12 students were purposively selected because they are at a critical academic juncture, transitioning to higher education, where advanced digital literacy and reliance on Artificial Intelligence (AI) platforms heavily influence their independent research, academic achievements, and future career readiness.

The total population of Grade 12 Senior High School students of one of the Senior High Schools in the Division of Negros Occidental was 258. To obtain the sample size, Yamane's formula was used:

$$n = \frac{N}{1+Ne^2}$$

Participants and sampling

where: n-sample size

N - total population

e – margin of error

Below is the computation to obtain the sample size:

$$n = \frac{N}{1+Ne^2}$$

$$n = \frac{258}{1+258(.05)^2}$$

$$= \frac{258}{1+0.645}$$

$$= \frac{258}{1.645}$$

= 156.83= 157, thus, the sample size used in this study is 157

Table 1. Distribution of Respondents per strand.

Strand	N	N
STEM	30	18
ABM	26	16
HUMMS	154	94
ICT-TVL	48	29
Total	258	157

To improve accuracy, this study used stratified random sampling to ensure that specific groups within the population were appropriately represented in proportion. The formula below was utilized to compute the sample for each strand.

Data analysis

$$n_i = \frac{Ni}{N}(n)$$

where:

ni- sample size per group

Ni-population per group

N-total population

n-total sample size

The data collection tool utilized in this study was an adopted questionnaire originally developed by Capinding et al (2024). The instrument was administered among Grade 12 Senior High School students. The respondents were fully informed about the purpose of the exercise and were requested to provide truthful and honest responses to the items.

The first part of the questionnaire was intended to gather basic information about the respondents and ensure they met the criteria. This included the demographic profile of respondents, such as sex, status, average monthly family income, and parents' highest educational attainment, to determine their eligibility. The second part focused on the impact of AI on students, including domains such as learning experience, career guidance, motivation, self-reliance, social interaction, and AI dependency. In part II, a Likert scale format was followed for ease of data quantification and inputting on the statistical software that was used: 5, Strongly Agree (SA); 4, Agree (A); 3, Neutral (N); 2, Disagree (D); and 1, Strongly Disagree (SD). The scale used a five-item range to assess respondents' responses to questions on AI impact and their academic achievement.

Validity and Reliability of the Research Instrument

The questionnaire used in this study was adapted from Capinding's (2024) validated questionnaire on the impact of AI on HEI. Capinding (2024) rigorously validated these questionnaires both in the Philippines and in consultation with Filipino experts. Comprising seven constructs, namely: AI Dependency (9 items), Social Interaction (9 items), Career Guidance (10 items), Academic Performance (6 items), Learning Experience (6 items), Self-reliance (6 items), and Motivation (5 items)—the questionnaire underwent thorough development. Furthermore, the instruments underwent reliability testing with Filipino students at one of the Universities in Nueva Ecija. The findings revealed that the reliability coefficients for academic performance (α = .92), career guidance (α = .91), and self-reliance (α = .93) were commendable. In addition, learning experience (α = .88), motivation (α = .89), social interaction (α = .87), and AI dependency (α = .86) exhibited excellent reliability coefficients. These robust psychometric properties underscore the questionnaire's credibility and suitability for assessing the multifaceted impacts of artificial intelligence on higher education students. The survey questionnaire was adapted and considered standardized, so validity and reliability testing of the research instrument will no longer be employed.

Data Gathering Procedures

To accomplish the study, the following were observed: First, the researcher secured permission from the School Principal and Senior High School Coordinator of one of the Senior High Schools in the Division of Negros Occidental to conduct the study and to access the respondents' latest Grade 12 grades. Next, the standardized survey questionnaire was subsequently administered to the selected respondents, who were chosen through stratified random sampling, during regular school hours. Instructions were clearly explained, and respondents were requested to answer all items honestly and completely. The researcher personally supervised the administration to provide assistance when needed and to maintain the integrity of the data collection process.The data obtained in this study were subjected to appropriate descriptive and inferential statistical procedures.

In analyzing and interpreting the data, various statistical tools were used. A frequency and percentage distribution were used to determine the demographic profile of respondents by sex, strand, family monthly income, and parents' educational attainment. Mean and standard deviation were used to determine the level of impact of artificial intelligence among Grade 12 Senior High School students as a whole and across learning experience, academic performance, career guidance, motivation, and self-reliance. The t-test for two independent samples and ANOVA were used to determine whether there was a significant difference in the level of impact of artificial intelligence among Grade 12 Senior High School students, grouped by profile and whether there is a significant difference in academic achievement among Grade 12 Senior High School students grouped by profile. Pearson's r was used to determine the relationship between the level of artificial intelligence and academic achievement among Grade 12 Senior High School students.

RESULTS

Profile of Grade 12 Senior High School Students

Table 2. Frequency and Percent Distribution of the Respondents According to Profile

Profile	Category	F	%
Sex			
	Male	55	35.03
	Female	102	64.97
	Total	157	100.00
Strand			
	Humanities and Social Sciences (HUMSS)	94	59.87
	Science and Technology, Engineering and Mathematics (STEM)	18	11.46
	Accountancy, Business and Management (ABM)	16	10.19
	Technical-Vocational-Livelihood Track (ICT)	29	18.47
	Total	157	100.00

Average Family Monthly Income			
	Below ₱10,000	111	70.70
	₱10,001 – ₱20,000	25	15.92
	₱20,001 – ₱30,000	11	7.01
	₱30,001 – ₱40,000	7	4.46
	Above ₱40,000	3	1.91
	Total	157	100.00
Parents Educational Attainment			
	Elementary	30	19.11
	High School	106	67.52
	College	15	9.55
	Post Graduate	2	1.27
	Vocational	4	2.55
	Total	157	100.00

Level of Artificial Intelligence of Senior High School Students

Table 3. Level of Artificial Intelligence on Senior High School students.

Statements	Mean	Standard Deviation	Interpretation
Learning Experience	**3.47**	**0.60**	**High**
1. AI has improved my learning experience by offering tailored information and tools	3.61	0.87	High
2. AI has been tailored to my learning style and speed, making it more pleasurable and efficient.	3.52	0.85	High
3. AI has developed dynamic and engaging educational materials	3.54	0.98	High
4. AI has enabled interactive and experiential learning opportunities.	3.39	0.97	Moderate
5. AI has promoted the development of critical thinking and problem-solving abilities.	3.26	1.05	Moderate
6. AI has offered practical examples and case studies to enrich my learning experience.	3.48	1.02	High
Academic Performance	**3.47**	**0.63**	**High**
1. AI has helped enhance my academic performance.	3.63	1.03	High
2. AI-powered tools have assisted me in pinpointing and tackling my weaknesses in particular subjects.	3.54	1.0	High
3. AI-based feedback has assisted me in enhancing The quality of my assignments and exams.	3.52	0.95	High
4. AI has supported me in reaching my learning objectives	3.38	0.94	Moderate
5. AI has offered timely and precise evaluations of my progress.	3.43	0.91	High
6. AI has aided me in preparing for exams more efficiently.	3.32	0.91	Moderate
Career Guidance	**3.39**	**0.62**	**Moderate**
1. AI has delivered precise and current information about various career paths	3.48	0.97	High
2. AI tools have aligned my skills and interests with appropriate career opportunities	3.45	1.0	High
3. AI has suggested internships or a job opportunities that align with my career goals	3.42	0.97	High
4. AI has helped me in developing the skills needed for my desired career	3.34	0.94	Moderate

5. AI has provided mentorship and networking opportunities within my area of interest.	3.34	1.0	Moderate
6. AI has made it easier to access career development resources and workshops	3.36	0.91	Moderate
7. AI has assisted me in recognizing emerging trends and technologies in my field	3.46	0.91	High
8. AI has aided in my long-term career planning and development.	3.26	1.01	Moderate
Motivation	**3.43**	**0.66**	**High**
1. AI has offered gamified learning opportunities, making the process more enjoyable and engaging.	3.54	0.90	High
2. AI has provided feedback and acknowledged my achievements.	3.40	0.91	Moderate
3. AI has offered insights and progress tracking to help keep me motivated.	3.42	0.95	High
4. AI has linked me with peers who have similar goals and interests.	3.34	0.97	Moderate
5. AI has assisted in setting goals and creating action plans for academic success.	3.45	0.93	High
Self-Reliance	**3.41**	**0.65**	**High**
1. AI has fostered self-directed learning and exploration of subjects beyond the curriculum.	3.42	0.97	High
2. AI-powered tools have enhanced my ability to think critically and independently solve problems.	3.38	0.94	Moderate
3. AI has boosted my confidence and self-reliance in academic endeavors.	3.28	1.0	Moderate
4. AI has supported me in developing self-discipline and accountability in my studies	3.43	0.91	High
table 3 continuation.. 5. AI has offered resources and tools for self -assessment and personal growth	3.47	0.95	High
6. AI has promoted reflective thinking and self-evaluation of my learning progress.	3.48	0.98	High
Social Interaction	**3.44**	**0.56**	**High**
1. AI has improved student communication and teamwork in group assignments.	3.76	0.90	High
2. AI-powered platforms have allowed for online debates and information exchange.	3.28	0.89	Moderate
3. AI has promoted peer-to-peer learning and assistance among students.	3.40	0.90	Moderate
4. Artificial intelligence systems have facilitated inclusive and polite interactions in virtual learning settings.	3.27	0.92	Moderate
5. AI has connected me to a varied group of learners, broadening my social circle.	3.38	0.91	Moderate
6. AI has improved networking chances with professionals and specialists in my sector.	3.48	0.85	High
7. AI has facilitated collaborative learning and problem-solving activities.	3.45	0.94	High
8. AI has facilitated cultural interchange and understanding among students.	3.46	0.88	High
9. AI-powered platforms have helped students create mentorship ties.	3.47	0.96	High

AI Dependency	**3.46**	**0.60**	**High**
1. I rely significantly on artificial intelligence programs to help me with my studies.	3.45	0.92	High
2. Artificial intelligence has had a huge impact on my educational decisions and practices.	3.45	0.90	High
3. AI has helped me feel more secure and capable in my academics.	3.39	0.88	High
4. AI has changed how I approach learning and problem-solving.	3.49	0.96	High
5. AI has become a reliable source of knowledge and direction for me	3.49	0.90	High
6. I actively seek AI-powered tools and resources to improve my learning experience	3.38	0.94	Moderate
7. AI has improved my efficiency and productivity in academic settings	3.43	0.99	High
8. AI has enhanced the quality of my learning output.	3.61	0.97	High
Overall Mean Artificial Intelligence	**3.44**	**0.53**	**High**

Legend:(4.21-5.0)-Very High;(3.41 – 4.20)-High;(2.61-3.40) Moderate (1.81 – 2.60)-Low;(1.00 – 1.80)-Very Low

Level of Academic Achievement of Senior High school students

Table 4. Level of Academic Achievement of Senior high school students.

Academic Achievement	N	Mean	Standard Deviation	Interpretation
Outstanding	45	87.09	4.76	Very Satisfactory
Very Satisfactory	56			
Satisfactory	53			
Fairly Satisfactory	3			
Did Not meet Expectation	0			
Total	157			

Legend: (90-100)-Outstanding; (85-89) -Very Satisfactory, (80-84)-satisfactory, (75-79)- fairly satisfactory; (below 75)-did not meet expectation

Difference in the Level of Artificial Intelligence When Grouped According to Sex

Table 5a. Difference in the Level of Artificial Intelligence When Grouped According to Sex.

Sex	N	Test Statistics (t)	P-value	Decision for Ho	Interpretation
Male	55	-1.363	0.436	Failed to Reject Ho	Not Significant

Difference in the Level of Artificial Intelligence When Grouped According to Strand

Table 5b. Difference in the Level of Artificial Intelligence When Grouped According to Strand.

Strand	N	Test Statistics (F)	P-value	Decision for Ho	Interpretation
Humanities and Social Sciences (HUMSS)	94	0.424	0.736	Failed to Reject Ho	Not Significant
Science and Technology, Engineering and Mathematics (STEM)	18				
Accountancy, Business and Management (ABM)	16				
Technical-Vocational-Livelihood Track (ICT)	29				

Difference in the Level of Artificial Intelligence When Grouped According to Average Family Monthly Income

Table 5c. Difference in the Level of Artificial Intelligence When Grouped According to the Average Family Monthly Income.

Average Family Monthly Income	N	Test Statistics (F)	P-value	Decision for Ho	Interpretation
Below ₱10,000	111	0.596	0.666	Failed to Reject Ho	Not Significant
₱10,001 – ₱20,000	25				
₱20,001 – ₱30,000	11				
₱30,001 – ₱40,000	7				
Above ₱40,000	3				

Difference in the Level of Artificial Intelligence When Grouped According to Educational Attainment

Table 5d. Difference in the Level of Artificial Intelligence When Grouped According to Educational Attainment.

Educational Attainment	N	Test Statistics (F)	P-value	Decision for Ho	Interpretation
Elementary	30	0.475	0.754	Failed to Reject Ho	Not Significant
High School	106				
College	15				
Post Graduate	2				

Difference in the Level of Academic Achievement When Grouped According to Sex

Table 6a. Difference in the Level of Academic Achievement When Grouped According to Sex.

Sex	N	Test Statistics (t)	P-value	Decision for Ho	Interpretation
Male	55	-3.099	0.002	Reject Ho	Significant
Female	102				

Difference in the Level of Academic Achievement When Grouped According to Strand

Table 6b. Difference in the Level of Academic Achievement When Grouped According to Strand.

Strand	N	Test Statistics (F)	P-value	Decision for Ho	Interpretation
Humanities and Social Sciences (HUMSS)	94	47.510	<.001	Reject Ho	Significant
Science and Technology, Engineering and Mathematics (STEM)	18				
Accountancy, Business and Management (ABM)	16				
Technical-Vocational-Livelihood Track (ICT)	29				

Pairwise Comparison Between Groups

Table 6b.1. Pairwise Comparison Between Groups.

Strand	Strand	P-value	Interpretation
Humanities and Social Sciences (HUMSS)	Science and technology, Engineering and Mathematics (STEM)	<.001	Significant
	Accountancy, Business and Management (ABM)	<.001	Significant
	Technical-Vocational-Livelihood Track (ICT)	.229	Not significant

Science and technology, Engineering and Mathematics (STEM)	Humanities and Social Sciences (HUMSS)	<.001	Significant
	Accountancy, Business and Management (ABM)	.846	Not Significant
	Technical-Vocational-Livelihood Track (ICT)	<.001	Significant
Accountancy, Business and Management (ABM)	Humanities and Social Sciences (HUMSS)	<.001	Significant
	Science and technology, Engineering and Mathematics (STEM)	.846	Not significant
	Technical-Vocational-Livelihood Track (ICT)	<.001	Significant
Technical-Vocational-Livelihood Track (ICT) table 2 continuation…	Humanities and Social Sciences (HUMSS)	.229	Not significant
	Science and technology, Engineering and Mathematics (STEM)	<.001	Significant
	Accountancy, Business and Management (ABM)	<.001	Significant

Difference in the Level of Academic Achievement When Grouped According to Average Family Monthly Income

Table 6c. Difference in the Level of Academic Achievement When Grouped According to Average Family Monthly Income.

Average Family Monthly Income	N	Test Statistics (F)	P-value	Decision for Ho	Interpretation
Below ₱10,000	111	0.700	0.593	Failed to Reject Ho	Not Significant
₱10,001 – ₱20,000	25				
₱20,001 – ₱30,000	11				
₱30,001 – ₱40,000	7				
Above ₱40,000	3				

Difference in the Level of Academic Achievement When Grouped According to Educational Attainment

Table 6d. Difference in the Level of Academic Achievement When Grouped According to Educational Attainment.

Educational Attainment	N	Test Statistics (F)	P-value	Decision for Ho	Interpretation
Elementary	30	2.532	0.043	Reject Ho	Significant
High School	106				
College	15				
Post Graduate	2				

Pairwise Comparison Between Groups

Table 6d.1. Pairwise Comparison Between Groups.

Parents' Educational Attainment		P-value	Interpretation
Elementary	High School	.992	Not Significant
	College	.312	Not Significant
	Post-graduate	.901	Not significant
	Vocational	.486	Not Significant

High School	Elementary	.992	Not Significant
	College	.089	Not Significant
	Post-graduate	.837	Not significant
	Vocational	.335	Not Significant
College table 2 continuation…	Elementary	.312	Not Significant
	High School	.089	Not Significant
	Post-graduate	1.000	Not significant
	Vocational	.991	Not Significant
Post-graduate	Elementary	.901	Not significant
	High School	.837	Not Significant
	College	1.000	Not Significant
	Vocational	.999	Not significant
Vocational	Elementary	.486	Not Significant
	High School	.335	Not Significant
	College	.991	Not significant
	Post-graduate	.999	Not Significant

DISCUSSION

Profile of Grade 12 Senior High School Students

Table 2 on the previous page shows that, by sex, the majority of respondents are female (f=102, 64.97%), while males comprise (f=55, 35.03%) of the total sample. This indicated a higher participation rate or concentration of female students within the sampled population. national data on senior high school and higher education enrollments in the Philippines consistently show a higher survival and completion rate among female students, aligning with this distribution (Philippine Statistics Authority [PSA], 2023). However, some literature notes that enrollment trends can fluctuate significantly by school location, with agricultural or technical-heavy institutions often showing a reverse trend in which male students dominate the student population (Technical Education and Skills Development Authority [TESDA], 2024).

Regarding the academic strand, the highest concentration of respondents comes from the Humanities and Social Sciences (HUMSS) strand, accounting for (f=94, 59.87%). The Technical-Vocational-Livelihood Track (ICT) accounts for (f=29, 18.47%), while the Science, Technology, Engineering, and Mathematics (STEM) and Accountancy, Business, and Management (ABM) strands account for (f=18, 11.46%) and (f=16, 10.19%), respectively. This heavy concentration in HUMSS suggests that the student base is highly oriented toward social sciences, communication, and human behavior. This distribution aligns with Department of Education (DepEd) national enrolment figures, which often highlight HUMSS as one of the most heavily populated strands due to its broad career pathways (DepEd, 2023).

Conversely, specialized institutional assessments indicate that schools with well-funded laboratory facilities or those located in urban business hubs tend to see the vast majority of their student population opting for STEM or ABM tracks (PIDS, 2024).

The socio-economic profile of the respondents reveals that a substantial majority (f=111, 70.70%) have an average monthly family income below ₱10,000, placing them in the low-income or poor bracket. Meanwhile, (f=25,15.92%) earn between ₱10,001 and ₱20,000, and only a tiny fraction (f=3, 1.91%) report incomes above ₱40,000. This implies that most student respondents face significant financial constraints, which may significantly impact their academic resources and learning environment. This economic reality reflects national statistics indicating that a large percentage of families in public and rural schools live below or near the poverty threshold (PSA, 2024). On the other hand, studies focusing on private or highly urbanized institutions show a contrasting income distribution, in which the middle- to upper-income brackets typically make up the bulk of the student population (CHED, 2023).

Finally, based on parents' educational attainment, the data shows that a major portion of the respondents' parents completed high school as their highest level of education (f=106, 67.52%), followed by elementary graduates (f=30, 19.11%). Only (f=15, 9.55%) reached college, and a (f=2, 1.27%) obtained a Post-Graduate degree. This suggests that the majority of students come from households where parents may have limited familiarity with higher education, making them first-generation college aspirants. This is consistent with Philippine educational trends where high school completion is the baseline standard for the older generation, particularly in provincial areas (Philippine Institute for Development Studies [PIDS], 2022). Nevertheless, contemporary studies in metropolitan areas reveal that parental educational attainment is rapidly shifting, with urban centers reporting much higher percentages of college-educated parents influencing their children's academic tracks (World Bank, 2025).

Level of Artificial Intelligence of Senior High School Students

Table 3 presents an analysis of the data reveals distinct extremities in how senior high school students perceive the Artificial Intelligence, highlighting a clear divergence between functional utility and deep developmental growth. On the higher end of the spectrum, the most pronounced impacts are observed in collaborative efficiency, output quality, and educational personalization. Specifically, the statement regarding AI's ability to improve student communication and teamwork in group assignments garnered the highest overall evaluation (M = 3.76, SD = 0.90), indicating that students primarily view AI as an effective facilitator of social and collaborative synergy. This is closely paired with strong positive perceptions regarding tangible academic outcomes, where AI's capacity to enhance academic performance (M = 3.63, SD = 1.03), elevate the quality of learning output (M = 3.61, SD = 0.97), and offer tailored information (M = 3.61, SD = 0.87) received exceptionally high ratings. Conversely, the lowest extremities in the data—all falling within the lower margin of the "Moderate" range—point to significant limitations regarding AI's role in cultivating intrinsic, higher-order capabilities. The lowest-rated metrics tied for AI's capacity to promote the development of critical thinking and problem-solving abilities (M = 3.26, SD = 1.05) and its aid in long-term career planning and development

(M = 3.26, SD = 1.01). This lower threshold is further mirrored by students' moderate ratings regarding AI's ability to facilitate inclusive online debates (M = 3.28, SD = 0.89) and to boost their internal confidence and self-reliance in academic endeavors (M = 3.28, SD = 1.00). Collectively, these extremities expose a critical pedagogical paradox: while Grade 12 students heavily lean on AI as a pragmatic "force multiplier" to streamline workflows, refine external outputs, and navigate group logistics, they simultaneously recognize that technology remains less effective at fostering foundational cognitive development, independent analytical reasoning, and long-term strategic foresight.

Recent studies support these results. For instance, Zawacki-Richter et al. (2022) found that AI significantly enhances personalized learning and academic performance, aligning with the high ratings in learning experience and performance in this study. Similarly, Holmes et al. (2023) emphasized that AI-driven tools improve student engagement and motivation through adaptive and interactive features. However, the moderate findings on critical thinking and self-reliance are consistent with Kasneci et al. (2023), who argued that excessive reliance on AI may hinder the development of higher-order thinking skills if not properly guided. In contrast, Chan and Hu (2024) highlighted that while AI supports career awareness, it cannot fully replace human mentorship, which explains the moderate results in career guidance. Moreover, OECD (2023) reported that AI can enhance collaboration and access to learning networks but may also lead to dependency issues, which aligns with the high AI dependency

observed in the table. Overall, the findings confirm that AI has a strong positive impact on education, but its implementation should be carefully managed to mitigate potential drawbacks.

Level of Academic Achievement of Senior High school students

The findings in Table 4 presents the level of academic achievement of senior high school students based on their academic ratings. The table shows that out of 157 respondents, 45 students were classified as "Outstanding," 56 as "Very Satisfactory," 53 as "Satisfactory," 3 as "Fairly Satisfactory," and none fell under the "Did Not Meet Expectation" category. The computed overall mean of 87.09 with a standard deviation of 4.76 is interpreted as "Very Satisfactory." The computed overall mean of 87.09 with a standard deviation of 4.76 is interpreted as "Very Satisfactory".

The findings indicate that senior high school students generally demonstrated high academic performance. The mean score of 87.09 suggests that most respondents performed above average in their academic requirements, indicating that students possess the knowledge, skills, and competencies necessary for their grade level.

The standard deviation of 4.76 further suggests that the students' academic performance is consistent, with only slight variations in their grades. This implies that most respondents performed within a narrow range around the mean, indicating stability in their academic achievement.

The findings were highly consistent with a study of Almeida and Corpuz (2023), which concluded that Grade 12 students consistently register a general average within the 85–89 range "Very Satisfactory" due to the specialized nature of senior high school tracks. They noted that when students are placed in specific academic strands (e.g., STEM, ABM, HUMSS), their engagement increases, resulting in higher internal marks and greater mastery of competencies.

Moreover, the findings were supported by previous research by Bongato et al. (2024), which emphasizes that senior high school students commonly attain "Very Satisfactory" levels of academic performance when provided with adequate academic support, motivation, and learning resources. A study on the relationship between 21st-century skills and academic performance among senior high school students revealed that the majority of students achieved "Very Satisfactory" academic performance, with a mean score of 86.46, which is similar to the result of the present study. The researchers explained that students who develop skills in learning, innovation, and technology tend to perform better academically.

Difference in the Level of Artificial Intelligence When Grouped According to Sex

Table 5a shows that, using the T-test at the 0.05 level of significance, a computed t-value of -1.363 was obtained, and the P-value is 0.436 the p-value is greater than the level of significance. Thus, the null hypothesis was accepted. It indicates that there was no significant difference in the level of impact of Artificial Intelligence across sexes. It implies that sex does not significantly influence the respondents' perceived level of impact of AI.

The lack of a statistically significant difference between sexes aligned with contemporary research regarding digital integration in secondary schools. Studies focusing on 21st-Century Skills (Philippine E-Journals, 2024) suggest that modern digital-native cohorts exhibit a uniform adoption rate of emergent educational technologies, driven by ubiquitous smartphone and internet access, eroding traditional gender gaps in tech usage. Furthermore, Rodriguez (2024) indicates that when institutional facilities provide uniform tech access across a senior high school campus, the perceived utility and overall academic impact of digital tools become highly standardized across both male and female student demographics.

On the other hand, this finding was contested by Pantolla and Nacion (2024), who noted in their performance-determinant studies that gender-based differences occasionally surface in specialized tracks, where males and females use digital and analytical tools at varying intensities depending on their technical specialization. Similarly, the multi-variable behavioral tracking framework by Castro (2024) implies that distinct psychosocial tendencies between male and female students can lead to differing cognitive dependencies on automated tools, meaning that even if the overarching impact appears statistically non-significant on paper, the underlying qualitative applications and reliance patterns for academic tasks often vary between sexes.

Difference in the Level of Artificial Intelligence When Grouped According to Strand

Table 5b presents the difference in the level of Artificial Intelligence (AI) when respondents are grouped according to their academic strand, namely Humanities and Social Sciences (HUMSS), Science, Technology, Engineering, and Mathematics (STEM), Accountancy, Business and Management (ABM), and Technical-Vocational-Livelihood (ICT). The data were analyzed using Analysis of Variance (ANOVA), which yielded an F-value of 0.424 and a p-value of 0.736. Since the computed p-value is greater than the 0.05 level of significance, the null hypothesis was not rejected. This indicates that there was no significant difference in the level of impact of AI among students across the different strands. Hence, the findings suggested that students, regardless of their academic specialization, experience AI similarly.

This result implies that the influence of AI technologies was not confined to a specific strand but is instead broadly experienced across disciplines. The accessibility and widespread use of AI tools, such as intelligent tutoring systems, automated writing assistants, and AI-powered research platforms, may contribute to this uniformity. As these technologies were increasingly integrated into general educational practices, students from various strands are equally exposed to and benefit from them. Consequently, the perceived impact of AI becomes consistent, regardless of whether the learner belongs to HUMSS, STEM, ABM, or ICT.

The findings of this study were supported by Zawacki-Richter et al. (2019), who emphasized that AI applications in education are largely cross-disciplinary and are designed to enhance general learning processes such as feedback, personalization, and assessment. Similarly, Holmes et al. (2021) noted that AI technologies offer benefits that span subject areas, thereby reducing disparities in how students experience their impact. Crompton and Burke (2023) further noted that students from different academic backgrounds tend to exhibit similar usage patterns and perceptions of AI tools, suggesting that integrating AI into education promotes a shared learning experience.

However, some studies contradict these findings. For instance, Garcia et al. (2022) reported that students in STEM-related strands tend to exhibit higher engagement and perceive AI tools as more useful than those in non-technical strands, likely due to their stronger technology background. Likewise, Kim and Lee (2020) found significant differences in AI adoption across disciplines, with students in technical fields demonstrating more positive attitudes and greater competence in AI use. Despite these contrasting results, the present study indicates that within the given sample, strand does not significantly influence the perceived impact of AI, suggesting that access to and familiarity with AI technologies may be becoming more evenly distributed among learners.

Difference in the Level of Artificial Intelligence When Grouped According to Average Family Monthly Income

Table 5c presents differences in the level of Artificial Intelligence (AI) across respondents' average monthly family income groups. The income categories include below ₱10,000, ₱10,001–₱20,000, ₱20,001–₱30,000, ₱30,001–₱40,000, and above ₱40,000. Using Analysis of Variance (ANOVA), the computed F-value is 0.596 with a corresponding p-value of 0.666. Since the p-value is greater than the 0.05 level of significance, the null hypothesis is not rejected. This indicates that there is no statistically significant difference in the level of AI impact across families with different monthly incomes. Thus, the findings suggest that students experience a similar level of AI impact regardless of their socio-economic status.

This result implied that access to and influence of AI technologies may no longer be strongly determined by income level, as AI tools have become increasingly accessible through mobile devices, free platforms, and school-supported resources. Students from both low- and high-income families may have comparable opportunities to interact with AI applications such as chatbots, virtual assistants, and AI-based learning tools. The widespread availability of internet connectivity and digital devices, even in lower-income households, may also help minimize disparities, thereby explaining the non-significant difference observed in the study.

UNESCO (2023) reported that the rapid expansion of free and low-cost AI-powered educational tools has helped narrow the digital divide, enabling learners from diverse socio-economic backgrounds to benefit equally from AI technologies. Likewise, Holmes and Tuomi (2022) emphasized that AI in education is increasingly designed to be inclusive and scalable, providing equitable learning opportunities regardless of students' financial capacity.

Furthermore, Crompton et al. (2024) found that students' engagement with AI tools is more influenced by digital literacy and school integration than by family income, supporting the present finding of no significant difference.

However, some studies contradict these results. OECD (2022) highlighted that socio-economic status still plays a role in digital access, noting that students from higher-income families tend to have better access to high-quality devices and stable internet, which may enhance their use of AI technologies. Similarly, Selwyn and Jandrić (2023) argued that inequalities persist in the depth and quality of AI use, with wealthier students more likely to use advanced AI tools for academic purposes. In addition, Chiu et al. (2025) found that although basic AI access may be widespread, significant differences persist in skills, support systems, and learning outcomes associated with AI use across income groups.

Despite these contrasting findings, the present study indicates that, within the sample, family monthly income does not significantly influence perceived AI impact. This suggests that democratizing AI technologies and integrating them into educational environments may help bridge traditional socio-economic gaps, leading to a more uniform learning experience for learners.

Difference in the Level of Artificial Intelligence When Grouped According to Educational Attainment

Table 5d presents differences in the level of Artificial Intelligence (AI) across educational attainment levels: elementary, high school, college, and post-graduate. The data were analyzed using Analysis of Variance (ANOVA), which yielded an F-value of 0.475 and a corresponding p-value of 0.754. Since the computed p-value exceeds the 0.05 level of significance, the null hypothesis is not rejected. This indicates that there is no significant difference in the level of impact of AI across groups when classified according to educational attainment. Therefore, the findings suggest that individuals, regardless of educational level, experience AI similarly.

This result implied that the influence and accessibility of AI technologies transcend educational boundaries. With the increasing availability of user-friendly AI tools such as chatbots, virtual assistants, and AI-powered learning platforms, individuals from different educational backgrounds can utilize these technologies with minimal barriers. The intuitive design and widespread integration of AI into everyday digital applications may reduce the need for formal education to use AI effectively, thereby contributing to the uniformity observed in the results. Additionally, exposure to AI through social media, mobile applications, and institutional use may further equalize user experiences across educational levels.

The findings were supported by recent studies from 2022 to 2026. For instance, UNESCO (2023) emphasized that generative AI tools are becoming increasingly accessible and user-friendly, allowing individuals with varying educational backgrounds to engage with AI technologies effectively. Similarly, Kasneci et al. (2023) highlighted that AI tools, such as large language models, are designed for broad usability, enabling learners and users at different educational levels to benefit from AI-assisted tasks such as writing, problem-solving, and information retrieval. Moreover, Crompton and Burke (2024) found that the use and perception of AI in education do not differ significantly by educational attainment but are more closely linked to factors such as exposure and digital familiarity.

However, some studies presented contrasting evidence. OECD (2022) reported that individuals with higher educational attainment tend to demonstrate greater digital competence, which may influence their ability to maximize the benefits of AI technologies. Likewise, Chiu et al. (2025) found that while AI tools are widely accessible, differences persist in the depth of use, critical understanding, and learning outcomes, with more educated users showing higher levels of proficiency. Additionally, Selwyn and Jandrić (2023) argued that educational background continues to shape how individuals critically engage with AI, suggesting that disparities may persist in more advanced or reflective uses of these technologies.

Despite these contrasting findings, the present study indicates that educational attainment does not significantly affect respondents' perceived level of AI impact. This suggests that democratizing AI technologies and integrating them into everyday digital environments may be reducing traditional educational gaps, allowing individuals from diverse educational backgrounds to experience similar benefits and challenges associated with AI.

Difference in the Level of Academic Achievement When Grouped According to Sex

Table 6a presents the independent-samples t-test results comparing academic achievement levels between male and female respondents. The statistical analysis yielded a calculated test statistic of t = -3.099 with an associated p-value of 0.002. Because the p-value (0.002) is below the 0.05 level of significance, the null hypothesis is rejected. This confirms a significant difference in academic achievement when students are grouped according to sex. Examining the group statistics reveals that female respondents ($\bar{X}$ = 87.93) achieved a significantly higher mean academic performance than male respondents ($\bar{X}$ = 85.53).

The findings demonstrate that sex significantly influences student academic performance within the context of the study. The higher mean score recorded by female students indicates superior overall performance across coursework, exams, and continuous academic assessments compared to their male peers.

This female performance advantage aligns directly with recent educational literature. Comprehensive global reports by the OECD (2023, 2025) document that female students consistently maintain higher overall educational attainment and grades throughout secondary education, driven by higher engagement in continuous coursework and literacy tasks.

Recent empirical research highlights the behavioral and cognitive factors contributing to this disparity. Maravilla and Aliazas (2024) noted that female students exhibit higher levels of academic engagement, self-regulation, and persistence when utilizing formal and digital learning materials. Similarly, investigations into academic resilience by researchers in 2024 demonstrate that female students are more likely to leverage structured planning skills, metacognitive monitoring, and social support systems to overcome academic stress, directly translating into higher grade outcomes. Furthermore, socio-demographic studies by Daraz et al. (2023) indicate that female students frequently demonstrate greater discipline and meticulousness toward academic obligations, whereas male students in secondary settings are more susceptible to out-of-school distractions or economic pressures.

Consequently, the statistical evidence confirms that female students in this study context demonstrated greater academic self-management and sustained study effort, leading to significantly higher academic achievement levels than male students.

Difference in the Level of Academic Achievement When Grouped According to Strand

Table 6b presents the comparative assessment of academic performance levels across the various senior high school specializations. An Analysis of Variance (ANOVA) was executed to determine statistical discrepancies, revealing F-value of 47.510 and a p-value of <.001. Given that the observed probability value falls well below the alpha threshold of .05, the null hypothesis is rejected with a high degree of statistical confidence. This outcome confirms a highly significant difference in academic outcomes among learners belonging to different academic pathways, establishing that a student's chosen track serves as a prominent differentiator in academic performance.

To isolate the specific directional nature of these variations, a post hoc analysis using Turkey's Honestly Significant Difference (HDS) multiple comparisons was performed. The post hoc results highlighted that the Humanities and Social Sciences (HUMSS) track demonstrated a dominant performance profile, yielding significantly higher academic achievement indicators compared to its peer strands.

These pronounced performance gaps suggest that the distinct instructional focuses, core curricular competencies, assessment formats, and specialized pedagogical approaches characteristic of each track shape student performance differently. For example, while the STEM curriculum emphasizes specialized mathematical logic and objective analytical troubleshooting, the HUMSS framework prioritizes comprehensive linguistic reasoning, qualitative critique, and expressive communication. Similarly, the ABM and ICT-TVL tracks lean heavily toward contextualized technical application and practical skills acquisition.

Based on these highly significant disparities, a uniform educational approach is insufficient. Consequently, the school administration and teachers should design strand-specific academic enhancement activities tailored to the unique performance profiles revealed by the data. In HUMSS strand, implement advanced research and writing mentorship programs, such as scholarly colloquiums or community advocacy forums, to further capitalize on

their strong academic foundation. In technical and applied strands (ABM and ICT-TVL), introduced contextualized data literacy workshops and peer-assisted learning blocks to help students bridge technical skills with academic concepts, enhancing overall grade performance. In analytical strands (STEM), Integrate collaborative research symposia aimed at balancing rigorous problem-solving with qualitative writing competencies, matching the comprehensive achievement outputs observed in other pathways.

The findings are supported by recent studies from 2022 to 2026. For example, Cabrera and La Nasa (2022) found that students' academic specialization significantly affects their academic performance due to differences in curriculum demands and cognitive skill requirements. Similarly, Chiu et al. (2023) reported that students in STEM-related strands often perform better on standardized assessments than those in non-STEM strands, largely due to stronger training in analytical and quantitative skills. Furthermore, OECD (2023) highlighted that academic tracking, or specialization, can lead to disparities in achievement, as students are exposed to different levels of academic rigor and learning opportunities depending on their chosen track. In addition, Kim and Santiago (2024) emphasized that strand-specific instruction and learning environments significantly influence students' academic outcomes, underscoring differences across disciplines.

However, some studies present contrasting findings. UNESCO (2022) suggested that when schools implement inclusive and balanced curricula, differences in academic achievement across strands can be minimized. Likewise, Darling-Hammond et al. (2023) argued that equitable teaching practices and access to quality resources can reduce performance gaps among students from different academic tracks. Additionally, Torres and De Guzman (2025) found that student motivation, teacher effectiveness, and school support systems may have a stronger influence on academic achievement than strand affiliation, thereby reducing the impact of specialization.

Despite these contrasting perspectives, the results of the present study clearly indicate that the academic strand significantly affects students' level of academic achievement. This suggests that educational institutions should carefully consider how curriculum design, instructional strategies, and support mechanisms differ across strands to ensure that all students have equitable opportunities to succeed academically.

Pairwise Comparison Between Groups

Table 6b.1 above presents the pairwise comparisons of academic achievement levels among students, grouped by strand, following the significant ANOVA result in Table 6b. The post hoc analysis reveals which specific groups differ from each other. The results show that there is a statistically significant difference between HUMSS and STEM ($p < .001$), and between HUMSS and ABM ($p < .001$), indicating that students in these strands differ notably in their academic achievement. However, no significant difference is found between HUMSS and ICT ($p = .229$), suggesting that the two groups have comparable academic performance.

Similarly, STEM students differ significantly from HUMSS ($p < .001$) and ICT ($p < .001$), but not from ABM ($p = .846$), suggesting that STEM and ABM students exhibit similar academic achievement. In the same manner, ABM students significantly differ from HUMSS ($p < .001$) and ICT ($p < .001$), but not from STEM ($p = .846$). On the other hand, ICT students do not differ significantly from HUMSS ($p = .229$), but do differ significantly from STEM ($p < .001$) and ABM ($p < .001$). Overall, the findings indicate that significant differences in academic achievement are primarily observed between academic-oriented strands (STEM and ABM) and other strands. In contrast, some strands, particularly HUMSS and ICT, show comparable performance.

These results implied that the nature of the strand and its curricular focus may influence students' academic outcomes. Strands such as STEM and ABM, which emphasize analytical, numerical, and structured problem-solving skills, may lead to higher or more consistent academic performance than strands that focus more on applied or humanities-based competencies. The similarity between HUMSS and ICT may suggest that both strands place comparable academic demands and employ similar assessment approaches, leading to similar achievement levels among students.

The findings are supported by recent studies from 2022 to 2026. For instance, Chiu et al. (2023) found that students in STEM-related tracks tend to outperform those in non-STEM strands due to stronger emphasis on analytical and cognitive skill development. Similarly, the OECD (2023) reported that academic specialization significantly influences student achievement, with students in academically rigorous tracks often demonstrating

higher performance. Furthermore, Kim and Santiago (2024) highlighted that curriculum design and strand-specific competencies contribute to differences in student outcomes, particularly between technical and academic tracks.

In summary, Table 6b.1 confirms that while some strands exhibit similar academic achievement, significant differences exist between specific groups, particularly between STEM/ABM and other strands. This suggests that the academic strand plays a role in shaping students' performance, although other contextual and instructional factors may also influence these outcomes.

Difference in the Level of Academic Achievement When Grouped According to Average

Family Monthly Income

The data in table 6c were analyzed using Analysis of Variance (ANOVA), which yielded an F-value of 0.700 and a p-value of 0.593. Since the p-value is greater than 0.05, the null hypothesis is accepted. This indicates that there is no significant difference in academic achievement among students across family income groups. Hence, the findings suggest that students' academic performance does not vary significantly across income levels within the context of the study.

This result suggests that average monthly family income may not be a determining factor in students' academic achievement in this setting. Equal access to educational resources, school support systems, and government interventions, such as subsidies and inclusive education programs, can help minimize the gap between students from different income groups.

The findings were supported by UNESCO (2022), which emphasized that inclusive education policies and equitable resource distribution can reduce the impact of socio-economic disparities on learning outcomes. Similarly, the OECD (2023) reported that while socio-economic status often influences achievement, its effects can be mitigated in systems that provide strong academic support and equal learning opportunities. Chiu et al. (2023) further noted that school-related factors, such as teaching quality and the learning environment, may have a stronger influence on academic achievement than family income alone.

However, some studies contradicted these findings. Engzell, Frey, and Verhagen (2022) found that students from lower-income families tend to experience learning disadvantages, particularly due to limited access to resources and support outside school. Likewise, Hammerstein et al. (2023) reported that socio-economic status remains a significant predictor of academic achievement, with higher-income students often demonstrating better performance due to greater access to educational materials and enrichment opportunities. In addition, Di Pietro et al. (2024) highlighted persistent achievement gaps linked to income inequality, suggesting that socio-economic factors continue to play a critical role in shaping academic outcomes across many contexts. Despite these contrasting findings, the present study indicates that, within the sample, income level does not significantly affect academic achievement, suggesting that contextual factors, such as school support and accessibility, may help level the playing field among learners.

Difference in the Level of Academic Achievement When Grouped According to Educational Attainment

Table 6d presents the differences in academic achievement levels among respondents, grouped by educational attainment. The computed F-value of 2.532 and p-value of 0.043 led to rejection of the null hypothesis at the 0.05 level of significance, indicating that there was a significant difference in academic achievement across groups. This implies that students' academic performance varies by educational attainment level (elementary, high school, college, and post-graduate).

The finding suggests that higher levels of educational attainment may be associated with improved academic outcomes, possibly due to increased exposure to advanced knowledge, better learning strategies, and greater academic support systems. Conversely, those in lower educational levels may still be developing foundational skills necessary for higher academic achievement, thereby contributing to the observed variation.

This result is supported by recent studies emphasizing the influence of educational attainment on academic

success. For instance, Sirin and Rogers-Sirin (2022) found that educational background significantly predicts academic achievement, as learners with higher educational exposure tend to demonstrate better cognitive and metacognitive skills. Similarly, OECD (2023) reported that progression in educational levels enhances students' competencies, learning strategies, and overall academic performance, reinforcing the significant differences observed in this study. However, some studies present contrasting views. Schleicher (2024) argued that while educational attainment plays a role, other factors, such as the learning environment, teacher quality, and access to technology, may have a stronger influence on student outcomes. Additionally, UNESCO (2022) highlighted that disparities in educational achievement may not depend solely on attainment level but also on the equity of access and the quality of instruction. Overall, while the findings confirm that educational attainment significantly affects academic achievement, they also suggest that it should be considered alongside other contributing variables.

Pairwise Comparison Between Groups

Table 6d.1 presents the pairwise comparisons of academic achievement by parents' educational attainment. The results reveal that all computed p-values for comparisons between groups (Elementary vs High School, College, Post-graduate, and Vocational; High School vs other groups; and so on) are greater than 0.05. Consequently, all comparisons are deemed not significant, indicating that there are no statistically significant differences in students' academic achievement across pairwise groupings by parents' educational attainment. This suggests that although Table 6d identified an overall significant difference among groups, the post hoc analysis shows that no specific pair of groups differs significantly. This outcome may be attributed to small subgroup sizes, such as the post-graduate group, or to overlapping characteristics among groups, which reduce statistical power to detect pairwise differences.

These findings are supported by recent literature, which emphasizes that parental educational attainment alone may not strongly differentiate students' academic outcomes when examined in isolation. For instance, Davis-Kean and Sexton (2022) noted that while parents' education influences academic achievement, its effect becomes less distinct when other variables such as parental involvement, socio-economic status, and learning resources are considered. Similarly, OECD (2023) reported that family background factors interact in complex ways, often resulting in minimal observable differences between specific educational attainment groups. On the other hand, some studies contradict these findings. Benner et al. (2024) found that higher parental education levels are associated with significantly better academic performance, driven by increased academic support and expectations at home. Likewise, UNESCO (2022) emphasized that parents with higher educational attainment tend to provide more conducive learning environments, which can lead to measurable differences in student achievement. Overall, the results of this study suggest that while parental educational attainment may contribute to academic achievement at a general level, it does not create significant distinctions between specific groups, highlighting the influence of other mediating factors.

Relationship Between Artificial Intelligence and Academic Achievement of Students

Table 7 shows that, at the 0.05 level of significance, the computed value of 0.226 is greater than the p-value of 0.004. Thus, the null hypothesis was rejected. This means that there was a significant relationship between the Artificial Intelligence (AI) and the academic achievement of Grade 12 students. The result implies that greater engagement with, or a positive impact from, AI tools is systematically associated with higher academic achievement among students.

These findings directly supported a localized Philippine study conducted by Discutido (2026) involving Senior High School (SHS) students, which reported that the strategic integration of AI-driven chatbots and writing tools is positively correlated with academic performance indicators. Discutido noted that AI functions as an on-demand tutor that simplifies dense textual materials, thereby enabling students to manage academic workloads more efficiently and secure higher marks.

Similarly, this result corresponds with the research of Almatrafi et al. (2026), who explored AI literacy among secondary students. Their findings demonstrated that when students know how to navigate AI environments ethically, the technology serves as a significant positive predictor of academic achievement. The intuitive,

conversational interfaces of modern generative platforms empower students to overcome learning bottlenecks, resulting in small but distinct gains in their overall classroom performance.

CONCLUSION

Based on the findings of the study, several conclusions were drawn:

On the demographic profile, the majority of Senior high school students were females in the HUMSS strand from low-income families. Due to financial and resource constraints at home, they rely heavily on affordable, accessible digital learning tools to supplement their studies.

On the level of Artificial Intelligence, AI is found to have a high impact on enhancing students' learning, collaboration, and motivation, though this high level of integration carries the risk of creating student dependency. In contrast, AI serves only a moderate role in career guidance, suggesting that technology cannot yet replace the human empathy and emotional intelligence required for career counseling.

On the level of Academic Achievement, the students achieved a "very satisfactory" level of academic performance despite economic hardships. This suggests that accessible resources, potentially including AI tools, act as equalizers that help mitigate the disadvantages of low socio-economic status on academic outcomes.

There is no significant difference in how AI impacts students across different demographic profiles. This statistical uniformity indicates that AI's influence is consistent regardless of a student's background, making it a highly democratic and inclusive educational resource.

There is no significant difference in academic achievement when students are grouped according to sex and family income, indicating these factors do not create disparities in grades. However, there is a significant difference based on a student's academic strand and their parents' educational background. This statistical evidence highlights that specific curriculum demands and parental academic support are the actual critical drivers of a student's success, which technology alone cannot fully replace.

There is a significant positive relationship between AI utilization and academic achievement. This statistical correlation indicates that higher engagement with educational AI tools is directly associated with improved grades.

The study concludes that a uniform educational approach is insufficient because academic achievement differs significantly depending on the student's strand. To effectively bridge these performance gaps, the school must implement strand-specific enhancement activities tailored to the unique academic profiles and demands of each track.

ACKNOWLEDGEMENT

The researcher sincerely acknowledges the grace and guidance of God, whose strength and wisdom made the completion of this study possible. Gratitude is extended to the institution’s administrators for their encouragement and support, and to the researcher’s adviser, Trudy C. Cerbo, PhD**,** for her invaluable guidance, mentorship, and academic expertise.

The researcher is deeply grateful to her aunt, Ma. Quincy D. Dones**,** for her guidance and unwavering support, and to her parents, Ramil L. Lagan and Jocelyn D. Lagan, her sister, Dona L. Baldevia, brother-in-law, Jose Haydee D. Baldevia, Jr., and friend, Lenny Mae O. Galoyo, for their encouragement and assistance throughout the research journey. Special appreciation is extended to her husband, Edmar Josuah S. Lo**,** and beloved children, Psean Zion Irie L. Lo and Psyqe Zuahielle L. Lo**,** whose love, patience, understanding, and sacrifices served as her greatest source of inspiration.

Finally, the researcher expresses heartfelt appreciation to everyone who, in ways both acknowledged and unacknowledged, offered prayers, kindness, encouragement, and support toward the completion of this study.

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