



# Awareness and attitudes toward artificial intelligence–based learning among higher education students

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## Abstract

This study explores the awareness and attitudes of college students in higher education institutions (HEIs) in the Province of Capiz, Philippines toward artificial intelligence (AI) for learning. Using a descriptive-correlational design, the study surveyed 379 students from public and private HEIs through validated and reliable researcher-made and adapted questionnaires. The results indicate a high level of student awareness of AI's potential in personalized learning and virtual learning environments, accompanied by generally positive attitudes toward its use. However, significant differences in awareness and attitudes were observed when respondents were grouped according to sociodemographic factors such as parental occupation, educational attainment, and type of HEI. Gender and place of residence also significantly influenced awareness levels. The study highlights the need for inclusive educational strategies, including targeted training programs, improved technological access for rural communities, and initiatives that support female students. The findings underscore the importance of policies that address AI literacy gaps to ensure equitable access to and effective integration of AI in learning. These insights contribute to the ongoing discourse on optimizing AI adoption in education, fostering critical thinking, and preparing students for a technology-driven future.

**Keywords:** *educational technology, digital literacy, intelligent systems, learning innovation, instructional support*

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## 1. Introduction

In the context of the rapidly advancing digital era, the integration of Artificial Intelligence (AI) into learning environments has become increasingly significant, particularly within higher education. AI, defined as the capacity of computer systems to simulate human cognitive functions such as learning, reasoning, and self-improvement, has expanded its influence across diverse sectors, including economics, healthcare, and education (Al Saad et al., 2022). In education, AI-driven technologies have moved beyond novelty and are now shaping instructional design, assessment practices, and learner engagement (Madlela, 2025; Ng & Ho, 2025; Ding & Xue, 2025; Strielkowski et al., 2025; Mariyono & Nur Alif, 2025; Bauer et al., 2025). These developments necessitate a closer examination of how students understand and perceive AI, as their awareness and attitudes play a critical role in determining the effectiveness of AI-supported learning initiatives.

AI applications in education, such as intelligent tutoring systems, adaptive learning platforms, chatbots, and automated assessment tools, have demonstrated potential to enhance personalized learning, reduce administrative burdens, and support instructional efficiency. More importantly, AI has been recognized for its capacity to promote higher-order thinking skills by encouraging learners to engage in analytical, reflective, and problem-solving activities (Vieriu & Petrea, 2025; Promma et al., 2025; Liu & Wang, 2024; Lawasi et al., 2024; Du et al., 2025; Zhang & Liu, 2025; Gonsalves, 2024). However, the benefits of AI integration are not uniformly experienced, as students' access to technology, prior exposure, and sociodemographic backgrounds may influence their awareness, attitudes, and use of AI tools (Younas et al., 2024; Sobiesuo et al., 2025). Understanding these variations is essential for ensuring equitable and inclusive educational practices.

Within the Philippine higher education context, the adoption of AI remains uneven (Co, 2025), highlighting the need for empirical studies that examine students' readiness, knowledge, attitudes, and actual use of AI for learning. Investigating these factors provides valuable insights for policymakers, educators, and institutional leaders in aligning curricular frameworks, pedagogical strategies, and technological infrastructure to support responsible AI integration. Without such alignment, the potential of AI to enhance learning outcomes and prepare students for a technology-driven workforce may remain underutilized.

Accordingly, this study aimed to assess the level of students' awareness of AI for learning, both overall and when examined in relation to selected sociodemographic variables,

including parents' educational attainment, parents' occupation, place of residence, sex, and type of higher education institution. By examining awareness across these dimensions, the study sought to identify disparities that may affect students' capacity to engage meaningfully with AI-enhanced learning environments. In addition, the study aimed to determine students' attitudes toward artificial intelligence for learning, both in general and when analyzed according to personal-related variables. Attitudes toward AI are critical, as they influence students' willingness to adopt, trust, and effectively use AI-driven tools in academic settings. Positive attitudes may facilitate innovation and engagement, whereas negative perceptions may hinder meaningful integration. Furthermore, the study sought to examine whether significant differences exist in students' levels of awareness of artificial intelligence for learning when grouped according to personal-related variables. Identifying such differences is essential for understanding how contextual and demographic factors shape students' exposure to and understanding of AI technologies. Finally, the study aimed to determine whether significant differences occur in students' attitudes toward artificial intelligence for learning when analyzed across personal-related variables. This objective provides empirical evidence on how individual and contextual characteristics influence students' perceptions of AI, thereby informing targeted interventions, policy development, and inclusive strategies that promote equitable access to AI-enhanced learning opportunities.

## **2. Literature Review**

### ***2.1. Artificial Intelligence for Learning***

Research indicates that students generally demonstrate a good level of awareness of AI for learning (i.e., Dergunova et al., 2022; Otermans et al., 2025; Hornberger et al., 2023; Charles & Charles, 2024). However, despite this overall awareness, students' conceptual understanding of core ideas related to intelligence and cognition remains limited. This suggests that while students are familiar with AI as a technological tool, their deeper theoretical knowledge of how AI functions is insufficient. Similar findings were reported by Dergunova et al. (2022), who found that although university students exhibited satisfactory levels of AI awareness, their understanding of the concepts of mind and intelligence was relatively weak. Across studies, students consistently recognize the importance of integrating technology into education. AI tools are widely perceived as beneficial in facilitating learning and improving instructional efficiency (Wang et al., 2025; Alkhateeb et al., 2025; Seo et al., 2021; Malakul,

2025). Nevertheless, awareness is accompanied by concerns regarding the potential disadvantages of AI, particularly the fear that AI may replace human jobs. These apprehensions reflect a broader societal discourse surrounding automation and employment. Despite such concerns, students acknowledge that AI technologies simplify tasks across various fields and have the potential to enhance teaching and learning processes (Dergunova et al., 2022).

Contrasting evidence was reported by Alimi et al. (2021), who found that a majority of university students were not aware of AI for learning, highlighting disparities in exposure and access to digital technologies. The students' ability to explore AI and other digital resources is highly dependent on their awareness and access to technological infrastructure. This finding challenges earlier conclusions by Zawacki-Richter et al. (2019), who emphasized the role of gender as a significant factor influencing engagement with AI in education.

Students' attitudes toward AI are complex and multifaceted, shaped by trust, perceived usefulness, and concerns about accuracy. Stone (2025) reported that while more than 41% of students had used AI in ways explicitly banned, many more students (59%) reported ambiguous use cases. These findings suggest that AI adoption is widespread and students tend to be critical in its application. Similarly, Doumat et al. (2022) found that formal AI instruction did not significantly improve students' attitudes toward AI, even though it enhanced their knowledge levels. This indicates that merely embedding AI into curricula may not be sufficient to foster positive attitudes. Other underlying factors, such as ethical concerns, perceived risks, and trust in technology, may play a more decisive role in shaping students' acceptance of AI.

Attitude has been identified as a critical determinant in the successful adoption of any technology. Research highlights that adequate facilities, technical infrastructure, and institutional support strongly influence users' behavioral intentions toward technology adoption. Rahiman and Kodikal (2024) emphasized that conducive infrastructure and supportive organizational conditions significantly shape faculty attitudes toward adopting emerging technologies in higher education. These findings underscore the importance of institutional readiness in influencing positive attitudes toward AI integration.

## ***2.2. Factors Influencing AI Use***

Parental awareness, occupation, and educational attainment play a significant role in shaping students' attitudes and access to AI-related learning opportunities. Mogaka et al. (2025) reported that parents expressed concern about AI's impact on education, reflecting a

mix of enthusiasm, awareness, and apprehension. While parental familiarity with AI tools such as ChatGPT was moderate, concerns about ethical use and long-term implications were prevalent. Supporting this view, Siddiqui et al. (2023) found that parental occupation influences awareness and participation in children's education. Gaps in knowledge among parents with lower educational levels and income may hinder students' exposure to AI, emphasizing the need for targeted information and support programs for disadvantaged families. Shah and Hussain (2021) further noted that parents' occupations affect income, social status, and child-rearing practices, which in turn influence children's educational opportunities and academic outcomes. Hammer et al. (2021) also demonstrated that parents' educational levels shape their digital behaviors, including technology use and engagement on social media. These patterns reflect broader differences in digital literacy and access, which may indirectly affect students' exposure to AI technologies and learning environments.

Gender has been widely recognized as a significant factor influencing technology acceptance. Cai et al. (2017) identified notable gender differences, with female students being more influenced by perceptions of ease of use, self-efficacy, and enjoyment, while male students were more driven by perceived usefulness. Venkatesh et al. (2012) further reported that female students are more likely to experience anxiety and demonstrate lower interest in using technology for learning, positioning gender as an important moderator in technology acceptance models.

Empirical evidence from Ghana further highlights gender disparities in AI usage. Ampong (2023) found that female participation in AI-based tools for learning lagged behind that of male students, largely due to persistent stereotypes surrounding STEM disciplines. The study revealed significant gender-based differences in perceived innovation characteristics and urged higher education institutions to implement policies that promote women's engagement and familiarity with AI technologies. However, contrasting findings by Alimi et al. (2021) suggest that gender differences in AI awareness may not always be significant, indicating that contextual factors such as access, culture, and institutional support may mediate gender effects.

Institutional context also influences students' perceptions and engagement with AI. Sanusi et al. (2022) found that students from public institutions reported higher perceptions of the cognitive and self-learning competencies required to learn AI compared to those from private institutions. This suggests that institutional resources, curriculum design, and exposure may affect students' confidence and readiness to engage with AI technologies. Accessibility

remains a major challenge in AI adoption. Rasheed et al. (2025) emphasized that ensuring equitable access to AI-powered tools across geographic locations is one of the most pressing concerns in educational technology implementation. Students in rural or underserved areas may face significant barriers, reinforcing existing educational inequalities.

### 3. Methodology

This study employed a descriptive–correlational quantitative research design to examine the awareness, knowledge, attitudes, and use of AI as an educational tool among students in HEIs in Capiz, Philippines. The descriptive design was used to identify and describe the levels of awareness and attitudes toward AI, while the correlational design explored the relationships between AI-related variables and selected demographic factors, including parents’ educational attainment, parents’ occupation, place of residence, sex, and type of HEI.

The survey involved 379 students randomly selected from a total population of 26,857 students enrolled in public and private HEIs in Capiz during the 2023–2024 academic year. The sample size was proportionally allocated based on each institution’s student population to ensure adequate representation. Table 1 presents the demographic characteristics of the participants.

More than one-fourth (27.44%) of the respondents’ fathers were college graduates. This was followed by those with college-level education (20.32%), high school graduates (18.73%), and those with high school-level education (13.46%). Smaller proportions had elementary-level education (10.03%) or were elementary graduates (5.80%). Only a few fathers had postgraduate education, including those with master’s degree units toward a doctorate (1.85%), college graduates with master’s degree units (1.58%), and master’s degree holders (0.79%). Overall, the findings indicate that the majority of respondents’ fathers attained at least a college-level education. Similarly, more than one-fourth (28.76%) of the respondents’ mothers were college graduates. This was followed by those with college-level education (21.90%), high school graduates (20.32%), and high school-level education (12.40%). Smaller percentages had elementary-level education (5.54%) or were elementary graduates (4.22%). A limited number of mothers had postgraduate qualifications, including college graduates with master’s degree units (2.90%), master’s degree holders (1.58%), master’s degree units toward

a doctorate (2.12%), and doctorate degree holders (0.26%). These findings suggest that most respondents' mothers were college graduates.

**Table 1**

*Demographic characteristics*

<b>Variables</b>	<b>Frequency</b>	<b>Percentage</b>
<b>Educational Attainment of Father</b>		
Elementary Level	38	10.03
Elementary Graduate	22	5.80
High School Level	51	13.46
High School Graduate	71	18.73
College Level	77	20.32
College Graduate	104	27.44
College Graduate with units towards master's degree	6	1.58
Master's degree Holder	3	0.79
Master's degree with units towards doctoral degree	7	1.85
<b>Educational Attainment of Mother</b>		
Elementary Level	21	5.54
Elementary Graduate	16	4.22
High School Level	47	12.40
High School Graduate	77	20.32
College Level	83	21.90
College Graduate	109	28.76
College Graduate with units towards master's degree	11	2.90
Master's degree Holder	6	1.58
Master's degree with units towards doctoral degree	8	2.12
Doctorate Degree Holder	1	0.26
<b>Occupation of Father</b>		
Government Employee	61	16.09
Private Employee	57	15.04
Self-employed	132	34.83
Unemployed	129	34.04
<b>Occupation of Mother</b>		
Government Employee	51	13.46
Private Employee	44	11.61
Self-employed	101	26.65
Unemployed	183	48.28
<b>Place of Residence</b>		
Rural	239	63.06
Urban	140	36.94
<b>Sex</b>		
Male	155	40.90
Female	224	59.10
<b>Type of HEIs</b>		
Public	260	68.60
Private	119	31.40
<b>Total</b>	<b>379</b>	<b>100.00</b>

In terms of occupation, more than one-third (34.83%) of the respondents' fathers were self-employed, while 34.04% were unemployed. The remaining fathers were either

government employees (16.09%) or privately employed (15.04%). Nearly half (48.28%) of the respondents' mothers were unemployed. Among those employed, 26.65% were self-employed, 13.46% worked in government institutions, and 11.61% were employed in the private sector. Regarding place of residence, more than three-fifths (63.06%) of the respondents resided in rural areas, while 36.94% lived in urban areas. In terms of sex, more than half (59.10%) of the respondents were female, whereas 40.90% were male. Finally, more than two-thirds (68.60%) of the respondents were enrolled in public higher education institutions, while 31.40% were enrolled in private HEIs.

Data were collected using a structured questionnaire consisting of five major sections. The first section gathered demographic information, including parents' occupation and educational attainment, students' sex, place of residence, and the type of HEI attended. The second section assessed students' awareness of AI using researcher-developed items designed to capture their knowledge of AI concepts and applications. The third section examined students' familiarity with AI technologies. The fourth section, adapted from Robledo et al. (2023), comprised 15 Likert-scale items that measured students' dispositions and attitudes toward AI. The fifth section assessed the use of AI for learning through 10 indicators, each with three items, to determine the frequency and manner in which students employed AI tools in academic contexts. The survey also directly assessed students' use of commonly available AI applications, such as AI-powered search engines and AI-based learning management systems. These applications were selected due to their relevance to academic settings, and brief descriptions were provided in the questionnaire to familiarize respondents with each tool.

To ensure content validity, the questionnaire was evaluated by a panel of experts, including a dean, the chair of the computer science department, and faculty members in English. A pilot test was subsequently conducted with 30 students who were not included in the final sample. Reliability analysis using Cronbach's alpha yielded high internal consistency coefficients of 0.975 for the AI awareness scale and 0.989 for the AI use scale, indicating excellent reliability (Smith, 1988).

Prior to data collection, permission was obtained from the appropriate institutional authorities. Questionnaires were administered directly by the researcher, with each survey numbered and coded to facilitate systematic data handling and analysis. Data were analyzed using SPSS, employing descriptive statistics (mean, standard deviation, frequency, and

percentage), non-parametric tests (Mann–Whitney U test and Kruskal–Wallis H test) for group comparisons, and Spearman’s rho for correlation analysis.

#### 4. Findings and Discussions

Data in Table 2 reveal that nearly half of the respondents (49.60%) were “more aware” of artificial intelligence (AI) for learning, followed by 126 respondents (33.24%) who were “aware,” 54 respondents (14.25%) who were “most aware,” 7 respondents (1.85%) who were “less aware,” and only 4 respondents (1.06%) who were “least aware.” The mean score of 3.72 indicates that, overall, the respondents’ level of awareness of AI for learning was classified as “more aware.” This suggests that college students in the Province of Capiz are generally well informed about AI, which has become an integral part of their daily lives and academic activities. Garzón et al. (2025) predict that AI applications in teaching and learning are expected to grow even more significantly.

**Table 2**

*Respondents’ level of awareness of AI for learning*

Level	Frequency	Percentage
Most Aware	54	14.25
More aware	188	49.60
Aware	126	33.24
Less Aware	7	1.85
Least Aware	4	1.06
<b>Total</b>	<b>379</b>	<b>100.00</b>

Mean = 3.72, SD=0.66 (More aware)

The standard deviation of 0.66 indicates minimal variation in the respondents’ level of awareness, reflecting a relatively consistent understanding of AI across the sample.

Table 3 presents the level of respondents’ awareness of AI for learning, grouped by parents’ educational attainment, parents’ occupation, place of residence, sex, and type of higher education institution (HEI). When grouped by fathers’ educational attainment, respondents whose fathers had higher education were generally more aware of AI. Specifically, those with fathers who were college graduates with units toward a master’s degree ( $M = 4.08$ ), master’s degree holders with units toward a doctorate ( $M = 3.95$ ), college graduates ( $M = 3.81$ ),

and master's degree holders ( $M = 3.80$ ) reported the highest levels of awareness. Respondents with fathers who were high school graduates ( $M = 3.76$ ), at college or elementary level ( $M = 3.68$ ), high school level ( $M = 3.59$ ), and elementary graduates ( $M = 3.51$ ) were also classified as "more aware." These results suggest that having a father with a higher educational level may positively influence students' awareness of AI for learning.

**Table 3**

*Level of awareness towards AI for learning when grouped according to personal-related variables*

Variable	Level of Awareness		
	Mean	SD	Interpretation
<b>Educational Attainment of Father</b>			
Elementary level	3.68	0.52	More Aware
Elementary graduate	3.51	0.72	More Aware
High school level	3.59	0.56	More Aware
High school graduate	3.76	0.67	More Aware
College level	3.68	0.72	More Aware
College graduate	3.81	0.67	More Aware
College graduate with units towards master's degree	4.08	0.41	More Aware
Master's degree holder	3.80	0.46	More Aware
Master's degree with units towards doctoral degree	3.95	0.72	More Aware
<b>Educational Attainment of Mother</b>			
Elementary level	3.58	0.47	More Aware
Elementary graduate	3.43	0.65	More Aware
High school level	3.63	0.59	More Aware
High school graduate	3.67	0.63	More Aware
College level	3.81	0.71	More Aware
College graduate	3.79	0.71	More Aware
College graduate with units towards master's degree	3.62	0.41	More Aware
Master's degree Holder	4.01	0.43	More Aware
Master's degree with units towards doctoral degree	3.91	0.66	More Aware
Doctorate degree holder	3.90	0.65	More Aware
<b>Occupation of Father</b>			
Government employee	3.80	0.78	More Aware
Private employee	3.82	0.59	More Aware
Self-employed	3.69	0.66	More Aware
Unemployed	3.67	0.61	More Aware
<b>Occupation of Mother</b>			
Government employee	3.93	0.64	More Aware
Private employee	3.91	0.54	More Aware
Self-employed	3.73	0.66	More Aware
Unemployed	3.62	0.66	More Aware
<b>Place of Residence</b>			
Rural	3.67	0.68	More Aware
Urban	3.81	0.60	More Aware
<b>Sex</b>			
Male	3.84	0.64	More Aware
Female	3.64	0.66	More Aware
<b>Type of HEIs</b>			
Public	3.72	0.68	More Aware
Private	3.72	0.59	More Aware

Similarly, when grouped by mothers' educational attainment, respondents whose mothers were master's degree holders ( $M = 4.01$ ), master's degree holders with units toward a doctorate ( $M = 3.91$ ), and doctorate degree holders ( $M = 3.90$ ) reported the highest awareness. Other respondents whose mothers had college-level education ( $M = 3.81$ ), college graduates ( $M = 3.79$ ), high school graduates ( $M = 3.67$ ), high school level ( $M = 3.63$ ), college graduates with units toward a master's degree ( $M = 3.62$ ), elementary level ( $M = 3.58$ ), and elementary graduates ( $M = 3.43$ ) were also "more aware." This implies that students with mothers who attained higher education are more aware of AI, possibly due to encouragement to explore AI applications for academic purposes.

Regarding fathers' occupation, respondents whose fathers were private employees ( $M = 3.82$ ), government employees ( $M = 3.80$ ), self-employed ( $M = 3.69$ ), and unemployed ( $M = 3.67$ ) were all classified as "more aware." For mothers' occupation, respondents with mothers who were government employees ( $M = 3.93$ ), private employees ( $M = 3.91$ ), self-employed ( $M = 3.73$ ), or unemployed ( $M = 3.62$ ) also reported "more aware" levels. These findings suggest that parents with stable jobs may facilitate their children's access to AI tools, enhancing their awareness of such technologies.

In terms of place of residence, respondents living in urban areas ( $M = 3.81$ ) and rural areas ( $M = 3.67$ ) were both "more aware" of AI, indicating that students across different locations are familiar with AI applications for learning. Concerning sex, both male ( $M = 3.84$ ) and female respondents ( $M = 3.64$ ) were "more aware" of AI, suggesting that awareness of AI tools is relatively high regardless of gender. Finally, regarding type of HEI, students enrolled in both public and private institutions reported similar awareness levels ( $M = 3.72$ ), implying that students across different school types are generally informed about current technological trends, including AI.

Table 4 presents the overall level of attitudes toward AI for learning. The data indicate that more than half of the respondents (54.62%) had a "more favorable" attitude, followed by 108 respondents (28.50%) with a "favorable" attitude, 61 respondents (16.09%) with a "most favorable" attitude, 2 respondents (0.53%) with a "less favorable" attitude, and only 1 respondent (0.26%) with the "least favorable" attitude toward AI for learning. The mean score of 3.86 indicates that the respondents' overall attitude toward AI was "more favorable," suggesting that college students recognize the usefulness of AI applications in supporting their learning beyond formal classroom instruction. The standard deviation of 0.60 reflects minimal

variation in attitudes among respondents. Consistent with these findings, Vieriu and Petrea (2025) reported that while students often prefer to complete assignments independently, they use AI primarily for supporting academic tasks, including essay writing and other learning activities.

**Table 4**

*Level of attitude towards AI for learning*

Level	Frequency	Percentage
Most favorable	61	16.09
More favorable	207	54.62
Favorable	108	28.50
Less favorable	2	0.53
Least favorable	1	0.26
<b>Total</b>	<b>379</b>	<b>100.00</b>

Mean = 3.86, SD=0.60 (More Favorable)

Table 5 presents the level of respondents' attitudes toward AI for learning, grouped by parents' educational attainment, parents' occupation, place of residence, sex, and type of HEI. When grouped by fathers' educational attainment, respondents whose fathers were pursuing a master's degree with units toward a doctorate reported a "most favorable" attitude ( $M = 4.52$ ). This suggests that fathers with higher education, who are likely more exposed to advanced technologies, can positively influence their children's attitudes toward AI by creating a technology-friendly environment at home. Respondents with fathers who were master's degree holders ( $M = 3.96$ ), high school graduates ( $M = 3.94$ ), college graduates ( $M = 3.92$ ), college graduates with units toward a master's degree or at college level ( $M = 3.86$ ), elementary level ( $M = 3.75$ ), elementary graduates ( $M = 3.70$ ), and high school level ( $M = 3.67$ ) all reported "more favorable" attitudes. These findings indicate that fathers' higher educational attainment may enhance children's openness and positive perceptions toward AI.

For mothers' educational attainment, respondents whose mothers were pursuing a master's degree with units toward a doctorate also reported a "most favorable" attitude ( $M = 4.58$ ). This implies that mothers engaged in advanced studies may foster an academically stimulating home environment, encouraging children's positive engagement with educational tools like AI. Respondents with mothers who were doctorate degree holders ( $M = 4.00$ ),

master's degree holders (M = 3.97), college graduates (M = 3.92), college level (M = 3.88), high school graduates (M = 3.84), college graduates with units toward master's degree (M = 3.82), high school level (M = 3.78), elementary level (M = 3.66), and elementary graduates (M = 3.55) were classified as having a "more favorable" attitude. These results suggest that higher maternal education, especially at advanced levels, may increase trust in technological tools and positively shape children's attitudes toward AI.

**Table 5**

*Level of attitude towards AI for learning when grouped according to personal-related variables*

Variable	Level of Awareness		
	Mean	SD	Interpretation
<b>Educational Attainment of Father</b>			
Elementary level	3.75	0.52	More favorable
Elementary graduate	3.70	0.53	More favorable
High school level	3.67	0.63	More favorable
High school graduate	3.94	0.53	More favorable
College level	3.86	0.57	More favorable
College graduate	3.92	0.63	More favorable
College graduate with units towards master's degree	3.86	0.65	More favorable
Master's degree holder	3.96	0.91	More favorable
Master's degree with units towards doctoral degree	4.52	0.73	Most favorable
<b>Educational Attainment of Mother</b>			
Elementary level	3.66	0.45	More favorable
Elementary graduate	3.55	0.35	More favorable
High school level	3.78	0.52	More favorable
High school graduate	3.84	0.60	More favorable
College level	3.88	0.55	More favorable
College graduate	3.92	0.65	More favorable
College graduate with units towards master's degree	3.82	0.60	More favorable
Master's degree Holder	3.97	0.82	More favorable
Master's degree with units towards doctoral degree	4.58	0.70	Most favorable
Doctorate degree holder	4.00	.	More favorable
<b>Occupation of Father</b>			
Government employee	3.99	0.61	More favorable
Private employee	3.91	0.67	More favorable
Self-employed	3.82	0.60	More favorable
Unemployed	3.81	0.55	More favorable
<b>Occupation of Mother</b>			
Government employee	4.09	0.63	More favorable
Private employee	3.87	0.63	More favorable
Self-employed	3.86	0.60	More favorable
Unemployed	3.79	0.56	More favorable
<b>Place of Residence</b>			
Rural	3.85	0.61	More favorable
Urban	3.88	0.57	More favorable
<b>Sex</b>			
Male	3.92	0.61	More favorable
Female	3.82	0.58	More favorable
<b>Type of HEIs</b>			
Public	3.81	0.57	More favorable
Private	3.97	0.63	More favorable

Regarding fathers' occupation, respondents whose fathers were government employees reported the highest attitude mean ( $M = 3.99$ ), followed by private employees ( $M = 3.91$ ), self-employed ( $M = 3.82$ ), and unemployed ( $M = 3.81$ ), all classified as "more favorable." Similarly, respondents whose mothers were government employees ( $M = 4.09$ ), private employees ( $M = 3.87$ ), self-employed ( $M = 3.86$ ), or unemployed ( $M = 3.79$ ) also had "more favorable" attitudes. These findings suggest that parental occupation, particularly jobs with stability or structure, may positively influence students' perceptions of AI for learning.

In terms of place of residence, students living in rural ( $M = 3.88$ ) and urban areas ( $M = 3.85$ ) were both "more favorable" toward AI, indicating that positive attitudes toward AI are not limited by geographic location. When analyzed by sex, both female ( $M = 3.92$ ) and male respondents ( $M = 3.82$ ) reported "more favorable" attitudes, suggesting that awareness and positive perception of AI are consistent across genders. Finally, regarding type of HEI, students enrolled in private institutions ( $M = 3.97$ ) and public institutions ( $M = 3.81$ ) were both classified as having "more favorable" attitudes, reflecting that students across school types are generally receptive to AI as a learning tool.

Table 6 presents the differences in respondents' awareness of AI for learning when grouped by parents' educational attainment, parents' occupation, place of residence, sex, and type of higher education institution (HEI). The results revealed that awareness of AI significantly differed according to mothers' occupation ( $H = 12.751$ ,  $p < 0.05$ ), place of residence ( $U = -2.188$ ,  $p < 0.05$ ), and sex ( $U = -2.904$ ,  $p < 0.05$ ). Consequently, the null hypothesis, which stated that there are no significant differences in respondents' level of awareness of AI based on these variables, was rejected.

Specifically, students' awareness varied significantly with mothers' occupation. This aligns with Siddiqui et al. (2023), who reported that parental occupation supports children's awareness and participation in education. It can be inferred that children of mothers employed in government positions are more aware of AI, possibly because their mothers can provide access to computers, laptops, and reliable internet connections at home.

Regarding place of residence, students living in urban areas were more aware of AI than their rural counterparts. Awareness also differed significantly by sex, with male students being more aware of AI applications than female students. In contrast, Alimi et al. (2021) reported that most university students were not aware of AI for learning and that there was no significant difference in awareness between male and female students.

**Table 6***Differences in the level of awareness towards AI for learning according to personal-related variables*

Variable	Level of Awareness			
	WM	Type of Test	Test Value	Asymp. Sig
<b>Educational Attainment of Father</b>				
Elementary level	3.68 <sup>a</sup>	Kruskal	9.271 <sup>ns</sup>	0.320
Elementary graduate	3.51 <sup>a</sup>	Wallis		
High school level	3.59 <sup>a</sup>	H-test		
High school graduate	3.76 <sup>a</sup>			
College level	3.68 <sup>a</sup>			
College graduate	3.81 <sup>a</sup>			
College graduate with units towards master's degree	4.08 <sup>a</sup>			
Master's degree holder	3.80 <sup>a</sup>			
Master's degree with units towards doctoral degree	3.95 <sup>a</sup>			
<b>Educational Attainment of Mother</b>				
Elementary level	3.58 <sup>a</sup>	Kruskal	8.613 <sup>ns</sup>	0.474
Elementary graduate	3.43 <sup>a</sup>	Wallis		
High school level	3.63 <sup>a</sup>	H-test		
High school graduate	3.67 <sup>a</sup>			
College level	3.81 <sup>a</sup>			
College graduate	3.79 <sup>a</sup>			
College graduate with units towards master's degree	3.62 <sup>a</sup>			
Master's degree holder	4.01 <sup>a</sup>			
Master's degree with units towards doctoral degree	3.91 <sup>a</sup>			
Doctorate degree holder	3.90 <sup>a</sup>			
<b>Occupation of Father</b>				
Government employee	3.80a	Kruskal	3.417 <sup>ns</sup>	0.332
Private employee	3.82a	Wallis		
Self-employed	3.69a	H-test		
Unemployed	3.67a			
<b>Occupation of Mother</b>				
Government employee	3.93a	Kruskal	12.751 <sup>**</sup>	0.005
Private employee	3.91ab	Wallis		
Self-employed	3.73ab	H-test		
Unemployed	3.62b			
<b>Place of Residence</b>				
Rural	3.67a	Mann-Whitney	-2.188*	0.029
Urban	3.81b	U-test		
<b>Sex</b>				
Male	3.84a	Mann-Whitney	-2.904 <sup>**</sup>	0.004
Female	3.64b	U-test		
<b>Type of HEIs</b>				
Public	3.72a	Mann-Whitney	0.039 <sup>ns</sup>	0.969
Private	3.72a	U-test		

**Notes:** <sup>ab</sup>-means with the same letter superscript are not significantly different

<sup>\*\*</sup>-highly significant \*- significant <sup>ns</sup>-not significant

Meanwhile, no significant differences in AI awareness were found when respondents were grouped by fathers' educational attainment ( $H = 9.271$ ,  $p > 0.05$ ), mothers' educational attainment ( $H = 8.613$ ,  $p > 0.05$ ), fathers' occupation ( $H = 3.417$ ,  $p > 0.05$ ), or type of HEI ( $U = 0.039$ ,  $p > 0.05$ ). Therefore, the null hypothesis was not rejected for these variables, indicating that they do not significantly influence students' awareness of AI for learning.

**Table 7***Differences in the level of attitude towards AI for learning according to personal-related variables*

Variable	Level of Attitude			
	WM	Type of Test	Test Value	Asymp. Sig
<b>Educational Attainment of Father</b>				
Elementary level	3.75 <sup>a</sup>	Kruskal Wallis H-test	13.514 <sup>ns</sup>	0.095
Elementary graduate	3.70 <sup>a</sup>			
High school level	3.67 <sup>a</sup>			
High school graduate	3.94 <sup>a</sup>			
College level	3.86 <sup>a</sup>			
College graduate	3.92 <sup>a</sup>			
College graduate with units towards master's degree	3.86 <sup>a</sup>			
Master's degree holder	3.96 <sup>a</sup>			
Master's degree with units towards doctoral degree	4.52 <sup>a</sup>			
<b>Educational Attainment of Mother</b>				
Elementary level	3.66 <sup>ab</sup>	Kruskal Wallis H-test	17.463 <sup>*</sup>	0.042
<b>Occupation of Father</b>				
Government employee	3.99 <sup>a</sup>	Kruskal Wallis H-test	2.986 <sup>ns</sup>	0.394
Private employee	3.91 <sup>a</sup>			
Self-employed	3.82 <sup>a</sup>			
Unemployed	3.81 <sup>a</sup>			
<b>Occupation of Mother</b>				
Government employee	4.09 <sup>a</sup>	Kruskal Wallis H-test	9.366 <sup>*</sup>	0.025
Private employee	3.87 <sup>ab</sup>			
Self-employed	3.86 <sup>ab</sup>			
Unemployed	3.79 <sup>b</sup>			
<b>Place of Residence</b>				
Rural	3.85 <sup>a</sup>	Mann-Whitney U-test	-0.918 <sup>ns</sup>	0.359
Urban	3.88 <sup>a</sup>			
<b>Sex</b>				
Male	3.92 <sup>a</sup>	Mann-Whitney U-test	-1.393 <sup>ns</sup>	0.164
Female	3.82 <sup>a</sup>			
<b>Type of HEIs</b>				
Public	3.81 <sup>a</sup>	Mann-Whitney U-test	-2.419 <sup>*</sup>	0.016
Private	3.97 <sup>a</sup>			

**Notes:** <sup>ab</sup>-means with the same letter superscript are not significantly different

\*- significant      <sup>ns</sup>-not significant

Table 7 presents the differences in respondents' attitudes toward artificial intelligence (AI) for learning when grouped by parents' educational attainment, parents' occupation, place of residence, sex, and type of higher education institution (HEI).

The results revealed that respondents' attitudes significantly differed based on mothers' educational attainment ( $H = 17.463, p < 0.05$ ), mothers' occupation ( $H = 9.366, p < 0.05$ ), and type of HEI ( $U = -2.419, p < 0.05$ ). Therefore, the null hypothesis, which stated that there are no significant differences in respondents' attitudes toward AI according to these variables, was rejected. Specifically, students whose mothers were engaged in postgraduate studies or employed in government positions demonstrated more favorable attitudes toward AI. This suggests that mothers with advanced education and stable employment recognize the value of continuous learning and encourage their children to engage with new technologies and applications positively. Additionally, students attending private institutions reported higher levels of favorable attitudes, possibly because parents perceive private schools as offering more advanced technological resources that enhance learning.

These findings align with Shah and Hussain (2021), who noted that parents' occupation influences the type of education children receive and their academic performance. Parents in higher occupational classes or prestigious jobs can provide financial security, access to resources, and opportunities that support their children's educational development. Conversely, these results contrast with Sanusi et al. (2022), who reported that students' perception of cognitive and self-learning competencies for AI was higher in public schools than private schools.

Meanwhile, no significant differences were observed in respondents' attitudes when grouped by fathers' educational attainment ( $H = 13.514, p > 0.05$ ), fathers' occupation ( $H = 2.986, p > 0.05$ ), place of residence ( $U = -0.918, p > 0.05$ ), or sex ( $U = -1.393, p > 0.05$ ). Therefore, the null hypothesis was accepted for these variables, indicating that they do not significantly influence students' attitudes toward AI for learning.

Table 8 presents the differences in respondents' usage of artificial intelligence (AI) for learning when grouped by parents' educational attainment, parents' occupation, place of residence, sex, and type of higher education institution (HEI). The results revealed significant differences in AI usage based on mothers' occupation ( $H = 9.525, p < 0.05$ ) and place of residence ( $U = -2.219, p < 0.05$ ). Therefore, the null hypothesis, which stated that there are no significant differences in respondents' usage of AI according to these variables, was rejected.

Specifically, students whose mothers were employed as government employees demonstrated higher levels of AI usage, likely due to increased access to resources and support for learning at home. Similarly, students living in urban areas reported greater usage of AI,

which may be attributed to stronger internet connectivity and the availability of more technological resources, such as internet cafés, compared to rural or upland areas.

**Table 8**

*Differences in the level of usage of AI for learning when grouped according to personal-related variables*

Variable	Level of Usage			
	WM	Type of Test	Test Value	Asymp. Sig.
<b>Educational Attainment of Father</b>				
Elementary level	3.04 <sup>a</sup>	Kruskal Wallis H-test	5.632 <sup>ns</sup>	0.688
Elementary graduate	2.59 <sup>a</sup>			
High school level	3.05 <sup>a</sup>			
High school graduate	3.23 <sup>a</sup>			
College level	3.12 <sup>a</sup>			
College graduate	3.13 <sup>a</sup>			
College graduate with units towards master's degree	3.01 <sup>a</sup>			
Master's degree holder	2.76 <sup>a</sup>			
Master's degree with units towards doctoral degree	3.37 <sup>a</sup>			
<b>Educational Attainment of Mother</b>				
Elementary level	3.07 <sup>a</sup>	Kruskal Wallis H-test	7.904 <sup>ns</sup>	0.544
Elementary graduate	2.47 <sup>a</sup>			
High school level	3.02 <sup>a</sup>			
High school graduate	3.06 <sup>a</sup>			
College level	3.16 <sup>a</sup>			
College graduate	3.14 <sup>a</sup>			
College graduate with units towards master's degree	3.19 <sup>a</sup>			
Master's degree holder	3.11 <sup>a</sup>			
Master's degree with units towards doctoral degree	3.58 <sup>a</sup>			
Doctorate degree holder	4.47 <sup>a</sup>			
<b>Occupation of Father</b>				
Government employee	3.30 <sup>a</sup>	Kruskal Wallis H-test	2.785 <sup>ns</sup>	0.426
Private employee	3.18 <sup>a</sup>			
Self-employed	2.99 <sup>a</sup>			
Unemployed	3.06 <sup>a</sup>			
<b>Occupation of Mother</b>				
Government employee	3.51 <sup>a</sup>	Kruskal Wallis H-test	9.525 <sup>*</sup>	0.023
Private employee	3.17 <sup>ab</sup>			
Self-employed	3.14 <sup>ab</sup>			
Unemployed	2.94 <sup>b</sup>			
<b>Place of Residence</b>				
Rural	3.00 <sup>a</sup>	Mann-Whitney U-test	-2.219 <sup>*</sup>	0.027
Urban	3.25 <sup>b</sup>			
<b>Sex</b>				
Male	3.22 <sup>a</sup>	Mann-Whitney U-test	-1.538 <sup>ns</sup>	0.124
Female	3.01 <sup>a</sup>			
<b>Type of HEIs</b>				
Public	3.05 <sup>a</sup>	Mann-Whitney U-test	-0.641 <sup>ns</sup>	0.521
Private	3.19 <sup>a</sup>			

**Notes:** <sup>ab</sup>-means with the same letter superscript are not significantly different

\*- significant      <sup>ns</sup>-not significant

Meanwhile, no significant differences were observed in AI usage when respondents were grouped by fathers' educational attainment ( $H = 5.632, p > 0.05$ ), mothers' educational attainment ( $H = 7.904, p > 0.05$ ), fathers' occupation ( $H = 2.785, p > 0.05$ ), sex ( $U = -1.538, p > 0.05$ ), or type of HEI ( $U = -0.641, p > 0.05$ ). For these variables, the null hypothesis was retained, indicating that they do not significantly influence students' use of AI for learning.

## 5. Conclusion

The research findings indicate that students in the Province of Capiz demonstrate a high level of awareness and a strongly favorable attitude toward using artificial intelligence (AI) in educational settings. These students recognize the potential of AI to support personalized learning, create customized learning experiences, and facilitate virtual learning environments. The study also highlights the influence of sociodemographic factors, specifically, parental occupation, sex, and type of higher education institution (HEI), on students' awareness and attitudes toward AI. Notably, maternal education and employment emerged as key determinants of students' awareness and acceptance of AI, underscoring the critical role of mothers in shaping their children's engagement with educational technology.

In response to these findings, practical applications should be incorporated into educational planning and policy development. Inclusive and equity-focused AI integration strategies are necessary to ensure that all students have access to AI tools and develop digital literacy skills. Targeted interventions, such as specialized seminars, AI-focused study guides, improved technological infrastructure in rural areas, and programs encouraging female students' participation, should be prioritized. Additionally, engaging parents in online learning activities can help bridge awareness gaps and create a supportive environment for AI adoption. By addressing these gaps through institutional initiatives and policy measures, universities and colleges can better prepare students for academic and professional environments where AI plays an increasingly central role.

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### **Institutional Review Board Statement**

This study was conducted in accordance with the ethical guidelines set by Capiz State University. The conduct of this study has been approved and given relative clearance(s) by Capiz State University.

### **AI Declaration**

The author declares the use of Artificial Intelligence (AI) in writing this paper. In particular, the author used OpenAI, Elicit, and Quillbot in finding literature and other materials. The author takes full responsibility in ensuring that research idea, analysis and interpretations are original work.

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