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Assessing CICT Student Perception of AI and its Influence on Academic Achievement

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Abstract

Artificial intelligence (AI) is fundamentally reshaping the educational system by transitioning from traditional teaching methods to modern, strategic approaches. This shift, driven by advanced learning technologies, diversifies students' learning processes and study methods, leading to varied academic outcomes. While AI offers significant benefits, such as enhanced learning efficiency, it also presents potential challenges that must be addressed to prevent adverse effects on students' skill development. Understanding how students adapt to and utilize AI tools is crucial, particularly as new issues related to these technologies emerge. Evaluating students' perceptions of AI's impact on their learning experiences is essential for ensuring effective and responsible use. In response to these pressing needs, this study aimed to explore the perceptions of Information and Communication Technology (ICT) students regarding AI and its influence on their academic achievement at a university in Western Visayas for the 2024-2025 academic year. Data for this descriptive-correlation study were collected from 217 ICT students using a rigorously validated and reliable researcher-developed instrument. The analysis indicated that while students recognize AI's benefits in enhancing learning efficiency, they also acknowledge its potential negative impacts. However, no significant associations were found between students' perceptions of AI, whether its benefits or drawbacks, and their Dean's List recognition.

Interestingly, students who view AI as beneficial to their learning are more likely to achieve Dean's List recognition than those who are less convinced of AI's advantages. Similarly, students who recognize AI's potential negative impacts are also more likely to achieve Dean's List recognition compared to those who acknowledge these impacts to a lesser extent. These findings highlight the need for comprehensive AI training programs. Such programs should focus on maximizing AI's benefits and ensuring its proper use while mitigating potential harms. Further research is necessary to develop effective strategies for integrating AI into education and adapting to modern advancements while addressing potential challenges.

Keywords: *AI Perception, Academic Performance,Information and Computer-Technology Student, Empirical-based Approach,Bacolod City,Philippines*

Introduction:

Nature of the Problem

Artificial Intelligence (AI) is an essential tool for students nowadays. It facilitates easier access to knowledge and assists students in meeting their academic requirements more efficiently. Many AI tools have been developed over the past few years, each with different functionalities, leading students and others to rely highly on these tools. Chen et al. (2023) highlighted that AI technologies like chatbots are effective and interactive tools for teaching fundamental concepts and delivering educational materials. This has become part of adaptive learning, providing students with a better learning experience and improved learning outcomes.

However, excessive reliance on AI has been observed to diminish independent thinking. Despite the topic being considered fundamental knowledge, students often struggle to articulate or familiarize it. Moreover, in narrative

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writing tasks intended to be subjective, students frequently depend on AI, resulting in work that may lack authenticity.Critics have pointed out technical limitations in ChatGPT, noting instances where it generates incorrect information (Weise & Metz, 2023), which raises questions about its reliability. According to Bogost (2022, p. 1), despite its ability to produce articulate and persuasive text, ChatGPT and its underlying technologies prioritize generating impressive yet nonsensical content, highlighting a fundamental limitation in their ability to fully grasp the complexities of human language and conversation in research contexts.Moreover, the accessibility of AI could lead to students' increased comfort with academic dishonesty.

Academic institutions should intervene to promote a balanced approach among students using AI to enhance their academic skills. They must ensure that students utilize AI responsibly without compromising their critical thinking abilities. Inadequate awareness of AI's capabilities and constraints among end users may result in teachers and learners potentially misusing and excessively relying on AI technologies (Kasneci et al., 2023). Thus, educating students about appropriate and inappropriate AI usage is crucial, emphasizing their autonomy to evaluate and selectively apply AI recommendations.

Examining AI student perception is crucial for guiding academic institutions toward fostering responsible AI use and empowering students to make informed decisions in their academic pursuits. Djokic et al. (2024) highlighted the significance of considering student perceptions, as they constitute the end users of educational services. This understanding is essential as recent graduation trends show an increasing number of students achieving Dean’s List status, potentially influenced by AI usage contributing to this trend.

Current State of Knowledge

Recent research has highlighted the multifaceted impact of artificial intelligence (AI) in education, revealing both promising benefits and significant challenges. Dergunova (2022) found that while students demonstrate a high level of awareness regarding AI, their understanding of core concepts such as mind and intelligence is limited. This indicates a need for deeper educational engagement to ensure that students are familiar with AI tools and understand their underlying principles and implications. The study also noted concerns about AI's potential to displace human jobs, reflecting broader societal anxieties about technological advancements.

Exploring the psychological dimensions of AI's impact, Wang et al. (2022) investigated how AI learning anxiety and job replacement anxiety influence students' motivations. The study found that while learning anxiety negatively affects both intrinsic and extrinsic motivations, job replacement anxiety can enhance extrinsic motivation. This paradoxical effect suggests that students may be driven by a desire to stay competitive in a job market increasingly influenced by AI technologies. Additionally, the study emphasized the role of learning self-efficacy in shaping students' intentions to engage with AI, pointing to the importance of building confidence and reducing anxiety in educational contexts.

The effectiveness of AI in enhancing educational outcomes has been demonstrated in various studies. Zheng (2021) reported a high effect size of AI on learning achievement, though the impact on students' learning perception was less pronounced. This finding suggests that while AI can objectively improve learning results, students' subjective experiences and perceptions may not always align with these outcomes. Supporting this, Alomari and Jabr (2020) showed that using AI-based educational software significantly improved student achievement and attitudes, particularly in mathematics, indicating that AI tools can effectively enhance academic performance and engagement.

AI chatbots, as an emerging educational tool, have also been subject to scrutiny. Wu and Yu (2023) conducted a meta-analysis showing that AI chatbots significantly boost learning outcomes, particularly in short-term applications. The study noted, however, that the novelty effect of these tools tends to diminish over time, suggesting that continuous innovation is necessary to maintain their educational impact.

Conversely, Abbas (2024) highlighted some negative aspects of AI use, particularly concerning generative AI tools like ChatGPT. The study revealed that while such tools can help manage academic workloads, they may also encourage procrastination and negatively impact academic performance. This underscores the need for clear guidelines and ethical considerations in using AI to ensure it serves as a supportive tool rather than a crutch that undermines learning.

Finally, Rahman et al. (2023) discussed broader concerns about AI in education, such as privacy issues, security risks, and the potential for increased technological dependency. These challenges highlight the necessity of a balanced approach to AI integration in educational systems, ensuring that technological advancements complement rather than compromise essential human skills and ethical considerations. In conclusion, while AI holds significant potential to transform education by enhancing efficiency and engagement, it is crucial to address the accompanying challenges. Ensuring that students are well-versed in the ethical and practical implications of AI and fostering a balanced use of technology will be vital in leveraging AI's benefits while mitigating its risks.

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Theoretical Framework

Artificial Intelligence (AI) in education involves integrating AI technologies to enhance teaching and learning experiences. This approach uses AI algorithms to analyze student data, personalize educational content, automate administrative tasks, and provide adaptive feedback (Top Hat Glossary, n.d.). While AI is a beneficial tool in academics, proper or excessive reliance on it can positively impact student learning. Overdependence on AI can lead students to pay attention to their learning processes and skills development. This study examines students' perceptions of AI, investigating whether they view AI as entirely beneficial or are also aware of its potential drawbacks.

This study builds on the AI learning framework introduced by Lee et al. (2024), which emphasizes three critical aspects of engagement for AI literacy: understanding, evaluating, and using AI. Understanding involves gaining fundamental knowledge of AI capabilities and operations to make informed decisions about AI tools. Evaluating centers on using human judgment to critically assess the benefits and drawbacks of AI on individuals, society, and the environment. Using AI pertains to engaging with it for problem-solving and creative tasks across various contexts. Lee et al. (2024) further describe AI literacy as encompassing the knowledge and skills necessary to understand, evaluate, and use AI systems ethically and safely in a digital world.

The study by Yen-Fen, Gwo-Jen, and Pei-Ying (2022) explored using an AI-based chatbot for after-class reviews. Their findings indicated that the chatbot improved students' academic performance, self-efficacy, learning attitudes, and motivation. This suggests that when implemented effectively, AI tools can enhance learning by providing timely feedback and fostering a more interactive learning environment.

In this context, this research aims to analyze whether students' perceptions of AI benefits correlate with improved academic performance compared to those aware of AI's potential negative impacts. The primary research questions guiding this study are centered on understanding how students perceive the benefits and potential negative impacts of AI on their academic learning, examining whether there is an association between students' perspectives on AI and their academic achievement, and determining the likelihood of achieving academic success based on students' perceptions of AI.

Objectives

This study aimed to explore College of Information and Communications Technology (CICT) students' perception of artificial intelligence (AI) and its influence on their academic achievement in one of the universities in Western Visayas for the 2024-2025 school year. Specifically, this study sought 1) to measure the level of belief in the benefits of AI versus awareness of its negative impacts among Information and Communications Technology (ICT) students, 2) to determine the association between students' perceptions of AI and their likelihood of receiving Dean's List recognition, and 3) to compute the odds of being on the Dean's List for students who perceive AI as beneficial compared to those who are aware of its negative impacts.

Hypothesis

There is no significant association between students' perceptions of AI and their likelihood of receiving Dean's List recognition.

Methodology

This section outlines the research design, participants, sample size, sampling techniques, research instrument, data-gathering procedure, and data analysis procedure employed in the study.

Research Design

This study employed the descriptive-correlational research design to explore CICT students' perception of artificial intelligence (AI) and its influence on their academic achievement in one of the universities in Western Visayas for the 2024-2025 school year.

Respondents

The study surveyed 217students from the College of Information and Communication Technology during the first semester of the 2024-2025 academic year at a university in Bacolod City Negros Occidental, Philippines. Simple random sampling was used to select the respondents.

Data Gathering Instrument

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The study employed a researcher-developed questionnaire, which was divided into two sections. Section 1 collected personal information, including respondents' age, gender, general weighted average for the second semester of the 2023-2024 academic year, and whether they received dean's list recognition in the semester preceding the study. Section 2 assessed respondents' perceptions of artificial intelligence (AI). This section included 50 items, split between the benefits of AI and awareness of its negative impacts. Specifically, 25 items addressed the benefits of AI, focusing on areas such as learning efficiency, engagement and interaction, resource management, innovation and creativity, and time management. The remaining 25 items examined the negative impacts of AI, covering academic integrity, privacy and security, dependence on technology, quality of learning, and impact on academic motivation. Each category consisted of 5 questions, with respondents indicating their level of agreement on a 5-point Likert scale ranging from (5) strongly agree to (1) strongly disagree.

Validity and Reliability

The survey questionnaire was evaluated by three experts specializing in research, artificial intelligence (AI), and education. Their input provided valuable feedback, leading to a validity index score of 4.96, considered outstanding and validates the instrument. Following this validation, the reliability of the questionnaire was tested through a preliminary trial involving 30 students from computer science and IT programs who were not included in the main study sample. The data from this trial were processed and assessed using the Cronbach Alpha method to measure reliability. An alpha value of 0.963 was calculated, reflecting excellent reliability. This result affirms the reliability of the research instrument developed.

Data Gathering Procedures

The researchers obtained permission from the Dean of the College of Information and Communication Technology to conduct the study. Following approval, students were informed that they were the target population for the research and were given brief instructions on how to complete the survey questionnaire. Participants had the option to complete the questionnaire either through an online Google survey or in person. To ensure the accuracy and quality of the data, respondents were allotted one week to complete the survey. The completed questionnaires were collected, recorded, and analyzed. The data from the respondents were tallied and tabulated using appropriate statistical methods. The Statistical Package for the Social Sciences (SPSS) software was utilized to process the encoded data.

Data Analysis and Statistical Treatment

Objective 1 used the descriptive analytical scheme and mean as a statistical measure tomeasure the level of belief in the benefits of AI versus awareness of its negative impacts among CICT students. Moreover, objective 2 adopted a correlational analytical scheme and performed a chi-square test of independence todetermine the association between students' perceptions of AI and their likelihood of receiving Dean's List recognition. Lastly, objective 3 used a correlational analytical scheme and computed the odds of being on the Dean's List for students who perceive AI as beneficial compared to those aware of its negative impacts.

Ethical Considerations

To ensure the security of respondents, this study emphasized critical ethical practices, including voluntary participation, informed consent, risk reduction, confidentiality, and anonymity. Participants signed a consent form and were informed that they could withdraw from the study at any time without needing to offer a reason. Detailed explanations of the study's procedures and potential risks were provided to ensure informed consent. Confidentiality was protected by restricting access to personal information to only those involved in the research. Anonymity was maintained by using pseudonyms or initials to protect the identity of participants.

Results and Discussion

This section presents the findings, statistical analysis, and interpretation of the data gathered concerning the study's objectives.

Table 1
Benefits of AI for College of Information and Communications Technology Students

Area	***Mean***	***Interpretation***
Learning Efficiency	3.85	Agree
Engagement and Interaction	3.71	Agree
Resource Management	3.71	Agree
Innovation and Creativity	3.66	Agree

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Time Management	3.63	Agree

Table 1 presents the levels of agreement among CICT students regarding the benefits of AI. The data indicates that, out of the five AI benefits considered, students perceive AI most positively in terms of its ability to facilitate efficient learning, with a mean score of 3.85. Additionally, students express agreement on the advantages of AI in areas such as engagement and interaction, resource management, innovation and creativity, and time management. However, it is somewhat surprising that, despite acknowledging these benefits, students only express a general level of agreement rather than strong agreement. This suggests that the students may not be fully recognizing AI and its potential benefits in their studies.

The study conducted by Ikrawansyah and Romadhon (2024) explores graduate students' experiences with artificial intelligence (AI), focusing on their decision-making processes and the perceived benefits and drawbacks of AI. Their findings suggest that students generally perceive AI as helpful in formatting and editing tasks, as many prefer to handle more substantive work independently for deeper learning. However, the findings also emphasize the unequal accessibility of AI tools among students, which may result in disparities in the benefits gained from AI utilization.

Table 2
Awareness of AI's Potential Negative Impacts on Information and Communications Technology Students

Area	***Mean***	***Interpretation***
Academic Integrity	3.61	Agree
Privacy and Security	3.66	Agree
Dependence on Technology	3.68	Agree
Quality of Learning	3.63	Agree
Impact on Academic Motivation	3.61	Agree

Table 2 illustrates the level of agreement among CICT students regarding their awareness of the potential negative impacts of AI on academic integrity. Among the five identified potential negative impacts of AI, students express the greatest concern about becoming overly reliant on or dependent on AI, with a mean score of 3.68. Additionally, students acknowledge that AI could have adverse effects in various areas, including academic integrity, privacy and security, quality of learning, and academic motivation. While students recognize the benefits of AI, as shown in Table 1, they also agree that AI has the potential to compromise the quality of their learning experience.

Valerio (2024) explored students' perceptions and concerns related to artificial intelligence (AI), revealing that although students were highly aware of AI, they expressed notable ethical concerns, particularly regarding data privacy. The study stressed the importance of establishing clear ethical guidelines and ensuring transparency in AI usage. Similarly, Seo et al. (2024) identified student concerns surrounding AI, particularly regarding responsibility and surveillance issues. Parsakia (2023) investigated the effects of chatbots and AI in educational contexts, finding that students expressed concerns about the ethical implications of these technologies. They advised that excessive reliance on chatbots for social interaction or validation could weaken real human connections and undermine individual confidence. Moreover, over-reliance on chatbots could limit students' exploration of alternative problem-solving methods. Parsakia also reviewed the impact of AI on critical thinking, noting mixed findings. Additionally, Ikrawansyah and Romadhon (2024) emphasized the risk of students becoming overly dependent on AI, advocating for a balance between the growing use of AI and fostering independent learning in academia. Collectively, these studies highlight the nuanced and multifaceted nature of AI's influence in educational settings.

Table 3
Chi-square test for Association between the Perception of AI Benefits and Dean's List Status among Information and Communications Technology Students

	Pearson Chi-square	**Df**	**p-value**
Dean's List Status Perception of AI Benefits	1.680	1	0.195

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Table 3 reveals the results of the chi-square test examining the association between the CICT students' perception of AI benefits and their dean's list status. The p-value from the chi-square test is 0.195, which is higher than the critical significance level of 0.05. Therefore, the test indicates that the respondents' perception of AI benefits is not associated with the dean's list status.

Bancoro (2024) conducted a study to determine whether AI usage is related to academic performance and found no significant relationship between the two, supporting similar findings. In contrast, Chauke et al. (2024) explored postgraduate students' views on the benefits of AI tools, particularly ChatGPT, in their academic success. Their results emphasized the positive role of ChatGPT in enhancing students' educational journeys by assisting with grammatical corrections and paraphrasing, thereby improving writing skills. Additionally, Altememy et al. (2023) analysis demonstrated that AI had a significant positive impact on students' academic performance, indicating a more pronounced role for AI in improving academic outcomes.

Table 4
Chi-square test for Association between the Awareness of AI Potential Negative Impacts and Dean's List Status among Information and Communications Technology Students

	Pearson Chi-square	Df	p-value
Dean's List Status Awareness of AI Potential Negative Impact	1.713	1	0.191

Table 4 presents the chi-square test results for the association between information and communication technology students' awareness of the potential negative impacts of AI and their dean's list status. The p-value of the test is 0.191, which is above the significance level of 0.05. Thus, the result suggests that there is no significant association between students' awareness of AI's negative impacts and their dean's list status.

These findings are corroborated by Jia and Tu (2024), who investigated the potential of AI capabilities to enhance students' critical thinking awareness through the mediation of learning motivation. Their research focused on the causal relationships among AI capabilities, learning motivation, and critical thinking awareness. The study revealed that while AI capabilities could indirectly facilitate critical thinking awareness by increasing learning motivation, their direct impact on critical thinking awareness was not statistically significant. This indicates that although AI can positively influence cognitive learning processes, its direct role in fostering critical thinking awareness requires further empirical investigation.

Table 5
Odds of being on the Dean's Lister Recognition based on the Perception of AI Benefits among Information and Communications Technology Students

Perception of AI Benefits	***Have you received Dean's Lister Recognition?***		**Total**
	Yes	**No**	
Have a strong belief in the benefits of AI.	56	53	109
Less convinced or skeptical about AI benefits.	46	62	108
Total	102	115	217
Estimated Odds	**1.42**		

Table 5 displays the results of an odds analysis calculating the likelihood of information and communication technology students achieving dean's list recognition based on their perceptions of AI benefits in their learning. The analysis employs cluster analysis to categorize students into two distinct groups based on their perceptions of AI: those who strongly believe in its benefits and those who are less convinced or hesitant about its advantages.The findings reveal that students who strongly perceive AI as beneficial to their learning have odds of being on the dean's list that are 1.42 times greater than those who are less persuaded of AI's advantages.

Table 6
Odds of being on the Dean's Lister Recognition based on theAwareness of the AI Potential Negative Impacts among Information and Communication Technology Students

Awareness of AI Potential Negative Impact	***Have you received Dean's Lister Recognition?***		**Total**
	Yes	**No**	

Who acknowledge and are concerned about the potential negative impacts of AI.	48	44	92
Are less inclined to acknowledge or be concerned about the potential negative impacts of AI.	54	71	125
Total	102	115	217
Estimated Odds	**1.43**		

Table 6 presents the results of an odds analysis assessing the likelihood of Information and Communication Technology (ICT) students achieving Dean's List recognition based on their awareness of the potential negative impacts of artificial intelligence (AI) on their learning experiences. The analysis utilizes cluster analysis to classify students into two distinct groups according to their perceptions of AI: those who recognize and acknowledge the potential adverse effects of AI, and those who are less receptive to these concerns. The results indicate that students who acknowledge the potential negative impacts of AI are 1.43 times more likely to be on the Dean's List compared to their peers who are less inclined to recognize these potential issues.

Conclusion:

The study results indicate that Information and Communication Technology (ICT) students recognize the benefits of artificial intelligence (AI) in their learning processes. Specifically, they acknowledge that AI serves as a valuable tool for enhancing learning efficiency and facilitating the fulfillment of academic requirements. However, despite the general agreement on AI's advantages, there is a notable absence of strong agreement among students regarding the extent of these benefits. This may suggest that students are not fully leveraging AI or are not fully aware of its potential applications in their studies. Additionally, students might be considering alternative approaches, such as relying on their own capabilities, rather than fully embracing AI.

Moreover, this study reveals that students also acknowledge the potential negative impacts of artificial intelligence (AI) on their learning experience. Notably, students express concerns about becoming overly reliant on AI, which may hinder their development of personal skills and learning abilities. Despite recognizing the benefits of AI, students also identify drawbacks associated with its use, including implications for their online safety and overall learning effectiveness.

Furthermore, the results indicate that students' perceptions of AI's benefits and its potential negative impacts are not significantly associated with their academic achievements, such as Dean's List recognition. The findings suggest that the way students use AI and their awareness of its effects do not necessarily ensure better grades or higher academic performance. Other factors, such as individual mental capacity during exams, may play a more significant role in determining academic standing than merely the use of AI in their learning strategies or completing academic requirements.

Despite the study's finding that students' perceptions of AI's benefits and potential negative impacts are not significantly associated with their academic achievements, the study further examines the likelihood of students receiving Dean's List recognition based on their varying perceptions of AI. The findings reveal that students who view AI as highly beneficial to their learning are 1.42 times more likely to achieve Dean's List recognition compared to those who are less convinced of its advantages. Furthermore, students who recognize the potential negative impacts of AI are 1.43 times more likely to achieve Dean's List recognition compared to those who acknowledge these impacts to a lesser extent.

In light of these findings, the paper recommends that academic institutions implement training programs to help students understand and fully leverage the benefits of AI while also ensuring that it does not compromise their cognitive development and learning experiences. It is crucial to expand AI education to keep pace with technological advancements, enabling students to utilize AI effectively and for its intended purposes. Such training should also address potential risks associated with digital tools, such as academic dishonesty and lack of academic integrity. Furthermore, educational strategies should be developed to prevent the misuse and abuse of AI. Providing students with education on AI will also equip them with the knowledge to handle problems and take necessary precautions when using AI tools.

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