

RESEARCH ARTICLE

Academic integrity surrounding the use of generative AI in higher education: Lenses from ICT college students

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ABSTRACT

The emergence of Generative AI (GenAI) in education marks a transformative shift in teaching, learning, and assessment practices. GenAI technologies have evolved from being simple conversational agents to highly advanced systems capable of generating human-like text, solving complex problems, assisting in creative writing, tutoring, and even providing personalized feedback to students. This paper explored the use of GenAI in education with emphasis on its implications towards academic integrity. Information and Communications Technology (ICT) college students (n=30) were purposively sampled to be interviewed regarding their experiences and perceptions about the use of GenAI in their program. Thematic analysis was carried out to identify emerging themes and assess the implications of GenAI use in education, particularly ICT learning processes. Students believed that GenAI offers significant benefits, such as personalized learning, assistance in creative writing, tutoring, coding, and grading, which enhance students' learning experiences by providing instant feedback and helping them understand difficult concepts. Concerns about over-reliance on AI, plagiarism, and academic dishonesty have emerged, as some students use AI tools to bypass intellectual effort, raising questions about the authenticity of their work. ICT students expressed concerns about GenAI fostering cheating and undermining academic independence. Despite these issues, students remain optimistic about GenAI's role in education, advocating for clear guidelines on its appropriate use to balance its benefits with the need for academic integrity. The integration of GenAI in educational settings necessitates careful management to ensure that it supports, rather than diminishes, the learning process.

Keywords: academic integrity; artificial intelligence; ICT learners; technology earners; higher education

1. Introduction

In recent years, global higher education systems have undergone a notable technological evolution, especially within teaching and learning settings. As access to technological tools has improved, they have become crucial in transforming interactions between students and educators^[1]. This evolution brings both advantages and difficulties, particularly regarding academic integrity. The increasing prevalence of artificial intelligence (AI) tools presents a complex challenge for institutions as they strive to ensure that technology supports rather than detracts from the learning experience.

At the core of the discussion surrounding academic integrity is the necessity of fostering and sustaining

ARTICLE INFO

Received: 22 October 2024 | Accepted: 18 December 2024 | Available online: 31 December 2024

CITATION

Plecerda LP. Academic integrity surrounding the use of generative AI in higher education: Lenses from ICT college students. *Environment and Social Psychology* 2024; 9(12): 3177. doi:10.59429/esp.v9i12.3177

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an ethical academic atmosphere. Without this environment, characterized by the upholding of honesty and accountability, the objectives of teaching, learning, and research cannot be fully achieved^[2]. As AI continues to be woven into educational methodologies, it prompts essential inquiries about the distinction between ethical AI usage and academic misconduct. Educational institutions must not only adopt technological innovations but also establish strong policies to protect academic integrity.

AI's capacity to mimic human intelligence, particularly in tasks such as reasoning, learning, and problem-solving, has made it a powerful tool in academia^[3]. However, these capabilities also present significant ethical dilemmas. In fields like Information and Communication Technology (ICT), Social Science, and Science, students increasingly rely on AI to assist in their academic work. This reliance, while beneficial in certain contexts, may blur the lines between original student contributions and AI-generated content, raising concerns about fairness and originality.

The widespread adoption of generative AI technologies within educational institutions highlights the dual-edged nature of these tools. While AI is praised for its ability to support learners in achieving academic goals, it also poses risks when used without appropriate guidelines^[4]. For example, in some cases, students may use AI tools to complete assignments without fully understanding the material, potentially compromising the learning process. This issue is particularly pressing in disciplines that heavily rely on critical thinking and independent research.

AI chat models, such as ChatGPT, have seen rapid growth due to their ease of use and accessibility. Their ability to generate context-specific responses across various fields has made them popular among students seeking quick solutions^[5]. ChatGPT, in particular, has been praised for its high productivity and continuous improvement, making it an appealing option for learners^[6]. However, its widespread use also raises ethical concerns. While AI can enhance productivity, its unregulated use in academic work can lead to violations of academic integrity. Therefore, it is essential for educational institutions to establish clear policies that define acceptable AI usage in academic settings.

This study aims to explore the challenges surrounding academic integrity in the context of AI use, focusing on learners from ICT program. Through an analysis of student perspectives, this research seeks to highlight the specific ethical dilemmas posed by AI and offer recommendations for how academic institutions can effectively address these challenges to promote responsible AI use.

2. Literature

The swift integration of AI tools in education has created fresh opportunities for enhancing accessibility and inclusivity in learning environments. As these tools become more widely available, they challenge educators, administrators, and students to navigate both the benefits and obstacles they present^[7]. The growth of AI in education has not only improved the learning experience but also brought forth significant questions about its ethical and practical consequences within academic contexts. As more institutions investigate the capabilities of AI, it is essential to strike a careful balance between technological adoption and maintaining academic integrity.

A recent study by Jekki^[8] found that a significant majority of students, 83%, utilize generative AI tools like ChatGPT for research and writing. Furthermore, over half (52%) of students reported using these tools to prepare for tests, while 47% use them for learning foreign languages. These findings highlight the widespread adoption of generative AI among students for a variety of academic purposes.

A prominent example of AI's influence in education is ChatGPT, developed by OpenAI. This tool gained significant media attention in November 2022 when the first research version of its text-generating AI

was released to the public^[9]. ChatGPT is specifically designed for conversational tasks, allowing it to generate text that mimics human dialogue. While its conversational capabilities have been praised, its rise also highlighted concerns about AI's role in potentially facilitating academic dishonesty and other ethical dilemmas within education. The widespread attention ChatGPT has garnered underscores the growing influence of generative AI technologies across various fields, including academia.

Despite its considerable potential, the application of AI in education presents a dual nature. According to Dawson^[10], AI tools can either facilitate student learning or be misappropriated for dishonest practices. This dichotomy poses significant challenges for educators, who are tasked with promoting innovative applications of AI while ensuring the preservation of academic integrity. Although AI possesses the capability to enhance student engagement and support the articulation of their ideas, its misuse in assignments or examinations may jeopardize the foundational principles of academic honesty. Therefore, it is imperative for educational institutions to formulate and implement clear guidelines to prevent the inappropriate use of AI within academic contexts.

Higher education institutions have responded to AI in diverse ways, ranging from full integration of AI tools into their curricula to avoiding these technologies altogether. The lack of clear regulations complicates these responses, making it difficult for educators and administrators to navigate the ethical terrain surrounding AI use^[11]. Ethical considerations are a central issue, as AI's integration into academia raises concerns over fairness, privacy, and the authenticity of student work. The humanities and social sciences face significant challenges from AI, which is influencing public conversations with worries about acceptability, privacy, and economic ramifications^[12]. Regulations regarding AI must be consistently applied at institutional, departmental, and curricular levels to address these challenges effectively.

Estrellado and Miranda^[13] argue that AI has immense potential to revolutionize education in the Philippines by enhancing the overall learning experience. Despite this promise, there is still a considerable gap in understanding how AI can be effectively integrated into educational systems. It is essential to recognize the specific ways AI can augment learning, improving both instructional methods and student engagement. This understanding could bridge the gap between the current use of AI and its future potential, making it a more effective tool in the classroom. As outlined by Jaysone^[14], an overdependence on AI can be detrimental to the development of critical thinking skills among students. The overuse of AI tools could impede students' ability to solve complex problems and deal with real-world situations independently. Rather than fostering self-reliance and analytical skills, heavy reliance on AI may encourage passivity, where learners depend on technology for answers rather than developing the skills needed to navigate intellectual challenges on their own.

While AI presents many benefits to the educational process, its use must be balanced with human intervention. Rane et al.^[15] warn that AI-generated content, such as that produced by ChatGPT, often lacks the nuance and quality of human-authored work, leading to legal and ethical debates. For education to maintain its integrity, it is vital that AI tools are used responsibly, complementing human judgment rather than replacing it. Moreover, educators and institutions must carefully evaluate the ethical implications of AI, ensuring it is used to enhance learning rather than undermine it.

Oravec^[16] emphasizes that AI technologies, particularly generative AI tools, have exacerbated issues of academic dishonesty. As AI becomes more integrated into higher education, the temptation for students to misuse these technologies for cheating increases, further complicating the already existing academic integrity challenges. Educational institutions must therefore address the ethical concerns surrounding AI,

implementing strict guidelines to prevent misuse while leveraging its benefits for genuine academic development.

According to Cotton et al.^[17], although ChatGPT and similar AI technologies provide numerous educational benefits, such as boosting student participation and collaboration, they also present challenges to academic honesty. The increased accessibility and ease of use offered by AI can tempt students to cut corners, leading to a decline in the authenticity of their academic efforts. This emphasizes the need for academic institutions to prioritize honesty and integrity in the use of AI, ensuring that these tools are used to support learning, not replace ethical academic practices.

The use of AI, particularly systems like GPT-3, poses significant risks related to plagiarism in academic settings. Dehouche^[18] points out that AI-generated essays can be used by students to submit work that is not genuinely their own. As AI-generated content is often indistinguishable from original work, this makes it easier for students to engage in dishonest practices, undermining the integrity of the educational system. Institutions must be vigilant in detecting and preventing plagiarism to uphold academic standards.

Omar et al.^[19] argue that while AI tools can aid learning, they may also contribute to a decline in the development of essential skills such as writing and critical thinking. Excessive reliance on generative AI could result in students becoming overly dependent on these tools, which in turn diminishes their ability to engage deeply with their subjects^[20,21]. It is crucial for educators to ensure that AI is used to enhance, rather than replace, foundational learning skills.

While AI technologies like ChatGPT are seen by some as a progressive advancement for education, others worry that they could lead to a reduction in genuine academic effort^[22,23]. AI tools may encourage students and educators alike to rely on automated systems for quick answers, which could diminish the emphasis on critical thinking and originality in academic work. This potential decline in effort underscores the importance of fostering a balance between the use of technology and the development of individual skills.

Marzuki et al.^[24] caution that the growing use of AI tools for assignment completion may inadvertently lead students to depend too heavily on these technologies. This overreliance can prevent them from fully engaging with their coursework and developing the skills necessary to independently tackle academic challenges. AI should be used as a support tool, not a crutch, in the educational process.

Kumar^[25] analyzed the outputs of AI tools in response to academic prompts, noting that while the content was often relevant, it lacked personal insight and appropriate references. This highlights a broader concern about the limitations of AI in producing truly original and nuanced content. The widespread use of AI-generated content in academic settings could therefore pose a serious threat to the integrity of academic work, as AI is unable to replicate the depth of human perspective and creativity. Prothero^[26] underscores the growing concern over AI-driven cheating, with many educators struggling to find effective ways to prevent students from misusing these technologies. Abubakar et al.^[27] emphasize that AI tools, when used improperly, can be exploited to commit academic dishonesty, thus calling for stricter measures to ensure AI is used ethically in educational settings.

Without such effective guidelines, there is a risk that AI will negatively impact educational outcomes by promoting shortcuts and reducing the quality of learning^[28-31]. Setting clear boundaries will ensure that AI is used responsibly and constructively in academic contexts.

Bell^[32] contends that upholding academic integrity involves dissuading the use of AI-generated material as primary sources in scholarly work. It emphasizes the importance of positioning AI as an auxiliary tool,

rather than a substitute for the critical thinking and academic rigor required in research. This approach is essential for maintaining both the quality and ethical standards of academic outputs.

The emphasis on growing apprehension surrounding the increasing use of AI detection tools by educators, which has been linked to a rise in punitive actions taken against students. While the adoption of such detection methods is viewed as a necessary measure, its effectiveness depends on the implementation of transparent guidelines and policies that ensure fairness while upholding academic integrity^[33].

Generative AI tools such as ChatGPT, Humata.ai, and Sudowrite have revolutionized higher education, particularly in teaching, learning, and assessment^[34]. The introduction of these tools has sparked debates about their potential to improve education while also posing risks to academic integrity. ChatGPT, in particular, has led to a rapid expansion of AI use, not only in educational settings but across multiple sectors^[35]. While these technologies offer significant advantages, they also demand that institutions reassess how they measure learning outcomes to ensure that AI use enhances rather than undermines educational quality.

Recent advancements in generative AI tools extend far beyond their original functions. These tools are now capable of generating content such as poems, computer codes, and written texts, further expanding their relevance in both academic and creative fields^[36-38]. This expansion presents new opportunities for innovation but also introduces new challenges related to intellectual property and originality. As AI-generated content becomes more prevalent, educators must explore new methods for assessing student work that account for AI's influence.

The capability of AI to quickly retrieve information has significantly changed the way students learn. Advanced software enables students to easily access lesson materials and solutions, making the learning process more efficient^[39]. However, while this increased efficiency is beneficial, it may lead to diminished engagement with the content, which could adversely affect their critical thinking skills. The convenience offered by AI technologies requires a reevaluation of educational approaches to ensure that students still cultivate vital problem-solving skills while utilizing these tools.

AI-powered chatbots have proven effective in increasing student engagement and optimizing learning procedures. Studies have demonstrated that the adoption of chatbot technology in higher education improves learning outcomes by fostering a more interactive and engaging learning environment^[40,41]. These tools provide personalized support to students, enabling them to stay connected with their coursework and receive timely feedback. However, as chatbot use increases, it is vital to consider their potential impact on the development of independent learning skills and the broader implications for academic integrity.

3. Methods

3.1. Research design

This study employs an exploratory qualitative design to analyze the issues of academic integrity in the context of AI usage among higher education learners. An exploratory approach is particularly effective in examining new or under-researched topics, as it allows researchers to gain a more profound understanding of participants' perspectives when existing literature is scarce^[42].

3.2. Population and sampling

The target population for this research includes higher education learners enrolled in ICT, program from various universities in the Zamboanga Peninsula, Philippines. The study utilized purposive and convenience sampling techniques to select a diverse group of 30 participants. This selection strategy is aligned with the

study's objective to gather rich, context-specific insights into the academic integrity challenges associated with AI use^[43]. This approach ensures that a variety of perspectives are captured, reflecting the distinct experiences and challenges faced by students in different fields.

3.3. Instrument

A semi-structured interview guide was developed as the primary instrument for data collection. This guide included open-ended questions designed to elicit detailed responses regarding participants' views on AI usage, their observations on academic integrity, and specific challenges related to AI in their academic contexts. The semi-structured format allowed for flexibility in exploring participants' thoughts, enabling the researcher to probe deeper into issues as they arose during the interviews^[44]. **Table 1** presents the interview guide questions developed for this study.

Table 1. Instrument of the study.

Objectives	Questions
Determine the students' perceptions about the positive aspects of using GenAI in ICT learning processes.	<ul style="list-style-type: none"> a. In what ways do you feel GenAI has improved or enhanced your learning experience in ICT courses? b. Can you share any specific examples of how GenAI tools have helped you better understand ICT concepts or complete assignments? c. How do you think GenAI could positively impact your future work or career in the ICT field?
Determine the perceptions of ICT students regarding the negative aspects of GenAI in learning.	<ul style="list-style-type: none"> a. What concerns do you have about the use of GenAI tools in your learning, especially regarding skills like critical thinking or problem-solving? b. Have you observed any ways in which reliance on GenAI might hinder students' learning or understanding of ICT concepts? Can you provide examples? c. How do you think the use of GenAI might affect academic integrity or honesty among ICT students?
Determine ways on how to manage GenAI use in academic settings.	<ul style="list-style-type: none"> a. What guidelines or policies do you think would be helpful to ensure the responsible use of GenAI in ICT courses? b. In your opinion, how can teachers and schools balance the use of GenAI tools with the need for students to develop independent problem-solving skills? c. What support or resources do you think students need to use GenAI effectively and ethically in their academic work?

3.4. Data gathering procedure

Prior to conducting the interviews, the researcher obtained the necessary permissions and clearance from the academic head of the institution to ensure compliance with ethical research standards^[45]. Data collection involved one-on-one interviews conducted in a setting conducive to open and honest discussions. Each interview was recorded with the participants' consent and subsequently transcribed for analysis. This approach not only facilitated a comprehensive understanding of the participants' perspectives but also ensured that their voices were accurately represented in the research findings.

3.5. Data analysis

The analysis of the transcribed interview data involved thematic analysis, a method well-suited for identifying and interpreting patterns within qualitative data. The transcriptions were classified and categorized to uncover key themes related to academic integrity and AI usage^[46]. This process involved coding the data to identify recurring issues and insights, which were then organized into thematic categories. Thematic analysis provided a structured framework for interpreting the complexities of academic integrity as experienced by learners, allowing for a comparative analysis across the different disciplines involved in the study.

4. Results

Objective 1: Determine the students' perceptions about the positive aspects of using GenAI in ICT learning processes.

Students generally perceive positive aspects of integrating GenAI in ICT learning, particularly in areas of idea generation, efficiency, and support. Students noted AI's capacity to assist in brainstorming and research, making the learning process easier and faster without replacing student effort. They emphasized that AI should help them understand concepts and improve their own work, rather than do everything for them. Students appreciated for AI's role in increasing productivity, with statements underscoring how it enables them to complete tasks faster and save time on projects, activities, and performance. Students emphasized that AI should serve as a tool to support learning, not to bypass personal effort or critical thinking. This perspective suggested a strong student preference for using AI as an aid rather than a replacement in the learning journey, reflecting a balanced approach to integrating AI in education.

Theme 1: Generate Ideas

Students believed that AI significantly aided them in generating ideas, viewing it as a valuable tool for research and drafting tasks. They perceived AI as instrumental in making academic work easier and faster, facilitating the initial stages of idea development and knowledge acquisition. However, they felt strongly that AI should be used to improve their understanding and support their work rather than replacing their effort or thought process. Students emphasized a responsibility in AI use, seeing AI as a means to assist in generating ideas without undermining their own intellectual engagement or personal responsibility in learning.

“AI can be really helpful, like if you need to do research or write a paper. It can make things easier and faster.”

“AI can make tasks like researching or drafting essays quicker.”

“AI should help students understand concepts and improve their own work, not replace their effort or thought process.”

“AI can give ideas or help with research, but it shouldn't be used to do everything for the student.”

Theme 2: Speed-up Processes

AI helped students in speeding up processes within their academic tasks, helping them to research faster and manage assignments more efficiently. They recognized that AI enabled them to save time on projects, activities, and other performance-based tasks, allowing for quicker completion of work. This efficiency established a perception that AI was a powerful assistant in completing tasks faster and enhancing their overall productivity. Some students even felt that AI's abilities in generating work, such as essays, made it appear smarter than a human, underscoring its perceived advantage in accelerating academic processes.

“AI tools can help students research faster, generate ideas, and improve their writing.”

“By the use of AI, students can save time doing projects, activities, and performance.”

“AI can be useful for helping students complete their tasks faster.”

“AI tools can greatly assist students by speeding up research processes.”

“AI-generated essays... other students can finish it in less than a minute because of their ‘friend AI’... seems that AI is smarter than a human.”

Theme 3: Support

Students believed that AI served best as a support mechanism in their learning, aiding rather than replacing their own academic efforts. They emphasized the importance of using AI as a tool to enhance understanding and supplement learning rather than to bypass personal responsibility or critical thinking. For them, AI was valuable in supporting their learning process but not as a substitute for genuine effort, reflecting a view that AI should assist rather than diminish students’ engagement with the material.

“I believe students should use AI as a tool to support their learning, not to avoid doing their own work.”

“AI should be viewed as a tool to support learning, rather than a replacement for critical thinking and genuine student effort.”

Objective 2: Determine the perceptions of ICT students regarding the negative aspects of GenAI in learning.

The findings revealed that ICT students had concerns about the negative aspects of using AI in learning, particularly in relation to overreliance, dishonesty, and undermining the learning process. Students expressed that excessive dependence on AI could reduce creativity and hinder genuine learning, as it led some to copy AI-generated content without making any effort to understand or rephrase it. They emphasized that AI should be used to enhance learning rather than to complete assignments without personal effort. In terms of dishonesty, many students acknowledged that AI facilitated cheating and plagiarism, with some using AI-generated content as shortcuts and submitting it as their own work, which compromised academic integrity. Lastly, students noted that overdependence on AI could lead to a decline in critical thinking and problem-solving skills, as it allowed students to bypass engaging with the material and understanding concepts. AI use might result in missed learning opportunities and hinder the development of essential academic skills.

Theme 1: Overreliance

Students believed that overreliance on AI could significantly hinder their learning and creativity, as it led some to depend too much on AI for completing tasks without engaging in the process themselves. They highlighted concerns about students copying AI-generated content directly into their assignments without making any changes or efforts to understand or rephrase it. This behavior, they argued, undermined the development of original ideas and personal effort, as students opted to use AI as a shortcut rather than enhancing their own work.

“Some students might rely too much on AI to complete their work, which reduces learning and creativity.”

“The growing reliance on AI poses a significant threat to the principles of academic integrity.”

“Some students copy answers or essays generated by AI without making any changes or efforts...”

“AI should be seen as a tool to enhance learning, not a way to complete assignments without effort.”

Many students also expressed that the growing reliance on AI posed a threat to academic integrity, as it encouraged plagiarism and a lack of genuine academic engagement. Students emphasized that AI should be

seen as a tool to enhance learning rather than a means to bypass the intellectual effort required in completing assignments.

“Students copying and pasting AI-generated content directly into their assignments...”

“Students could have created their own idea and used AI for enhancement, but they copy it all!”

“Students copying and pasting AI-generated content directly into their assignments without making any effort to understand or rephrase it.”

Theme 2: Dishonesty

Students believed that AI facilitated dishonesty in academic work, making it easier for some to cheat by using AI as a shortcut. They noted that many students copied AI-generated content and submitted it as their own without making any changes, which undermined the principles of academic integrity. The use of AI for plagiarism and cheating was seen as a growing issue, with some students relying on AI to generate answers for assignments, quizzes, and exams, thus bypassing the need for original thought and effort.

“AI makes it easier for some students to cheat...”

“Some students may see AI as a shortcut... which leads to dishonesty.”

“Copying AI answers... some students submit AI-generated answers without changing anything.”

“Students copying AI-generated content and submitting it as their own.”

“Many students are really using AI just to cheat or plagiarize the work from the internet...”

Students also pointed out that the common problems related to academic integrity were the lack of self-ideas and the tendency to plagiarize AI-generated content, reflecting a deeper concern about the erosion of honest academic practices.

“The common issues in terms of academic integrity on students’ use of AI... are the plagiarized work and lack of self-ideas...”

“Cheating is the most common issue in using AI. Some students use AI to generate answers for assignments, quizzes, or exams...”

Theme 3: Learning Insufficiency

Students believed that overreliance on AI could undermine the learning process, as it led some to complete assignments or solve problems without fully understanding the material. They expressed concern that students might become too dependent on AI, which could result in a decline in critical thinking and problem-solving skills. Instead of engaging with the concepts and actively participating in the learning process, some students relied on AI to provide answers, which hindered their ability to grasp key academic content. Students warned that excessive dependence on AI risked students missing out on essential learning experiences and key learning opportunities, as it detracted from genuine intellectual engagement with the material.

“A few might take advantage of AI to complete assignments without understanding the content.”

“Some students use AI tools to generate content or solve problems without fully understanding the material.”

“Students may become too dependent on AI, leading to a decline in critical thinking and problem-solving skills.”

“Instead of understanding concepts, students rely on AI to give answers or solve problems, which hampers learning.”

“Over dependence on AI... students who rely too much on AI to complete tasks without engaging with the material risk missing out on key learning opportunities.”

“If students rely on it too much, they may miss out on essential learning experiences.”

Objective 3: Determine ways on how to manage GenAI use in academic settings.

Students believed that schools should play a central role in regulating AI usage by establishing clear policies on when and how AI can be used in academic work. They suggested that these policies should also emphasize honesty in students' work, with schools offering guidelines on proper citation practices and the acceptable extent of AI input. They highlighted the importance of education on when and how AI tools were acceptable, as well as ensuring that students demonstrated their own understanding of the material. Teachers were also seen as key figures in monitoring the ethical use of AI, with students suggesting that tools like AI detector tools and plagiarism detection software would assist teachers in tracking students' performance and ensuring original work.

Theme 1: Role of Schools

Students believed that schools should be the governing bodies in managing AI use by setting clear rules and policies to guide students on when and how to appropriately use AI in academic work. They emphasized that these policies should highlight the importance of honesty and provide guidelines on proper citation practices, as well as define how much AI input is acceptable in academic tasks. Students also felt that schools should be responsible for educating both students and faculty on the ethical use of AI, particularly regarding the potential risks of academic dishonesty.

“Schools should allow AI to be used, but they should have rules that show students when it’s appropriate.”

“They should establish clear policies that define when and how AI can be used in academic work.”

“Schools should remind students about the importance of being honest in their work.”

“These guidelines should include information on proper citation practices, how much AI input is acceptable.”

“Schools should educate students on the ethical use of AI.”

“Students and faculty should be educated about the ethical implications of using AI and the potential risks of academic dishonesty.”

Further, students suggested that institutions should offer tools such as a plagiarism detector to assist teachers in monitoring students' work and tracking their performance. They also viewed AI detection tools as

a valuable resource for teachers to evaluate students' academic integrity and the authenticity of their assignments.

“Institution must provide a Plagiarism Detector for teachers.”

“AI detector for teachers is a helping hand for them to know the performance of their students.”

Theme 2: Role of Teachers

Students believed that teachers should take an active role in guiding students on when and how to appropriately use AI in academic settings. They felt that teachers should educate students on the boundaries of AI use, explaining when it is acceptable and when it crosses into misuse. In addition, students suggested that AI should be treated as a learning tool, but on the condition that students demonstrate their understanding of the material through their own efforts.

“Students should be taught when and how it’s okay to use AI and when it’s not.”

“They should educate students on when and how AI tools are acceptable, and where they cross the line into misuse.”

“AI should be allowed as a learning tool, but students should be required to demonstrate their understanding of the material.”

They also recognized the importance of AI detection tools and plagiarism detection software to help teachers monitor students' performance and ensure that the work submitted is original. These tools were seen as valuable in preventing misuse of AI and upholding academic integrity in the classroom.

“AI detector tools would be a big help for teachers to track students’ performance and learning status.”

“Plagiarism detection software to monitor AI misuse and ensure students are producing original work.”

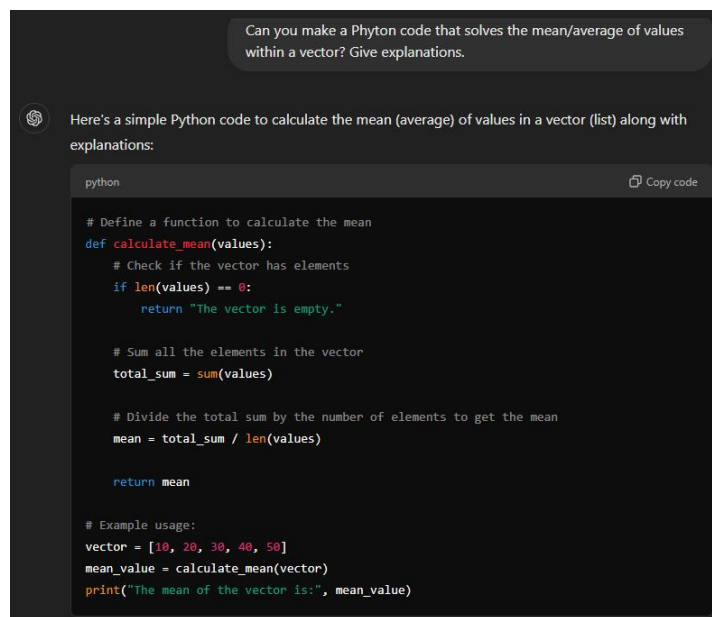
5. Discussion

Currently, the majority of literature pertaining to AI use in education has concentrated on the potential opportunities and risks linked to GenAI, especially regarding academic integrity^[47-49]. Pesovski et al.^[50] noted that GenAI presents a potential for cost-effective and sustainable personalized learning for students. Among the significant advantages of GenAI in higher education are its applications in creative writing and brainstorming, assistance in personalized tutoring, facilitation of computer programming, essay grading, and its utility for developing science units and rubrics^[51-55]. However, other studies were concerned about the proliferation of GenAI in classrooms. Lindgren^[56] cautions against normalizing prevalent perspectives in AI discourse, emphasizing the significance of critically examining the social and political consequences of innovation, growth, management, and efficiency. For Sevnarayan and Potter^[57], this pedagogical trajectory could have drastic impact to students’ efforts, the principles of academic integrity, and the implications for students’ intellectual independence.

This paper was positioned to analyze the perceptions of Filipino ICT college students about the use of AI in classrooms and learning processes. Findings were more concentrated on the impacts of AI on academic integrity, as students expressed concerns about its potential to undermine traditional learning methods. Many students acknowledged the advantages of AI in enhancing the learning experience, such as personalized

feedback, access to information, and time-saving benefits. However, they also raised valid concerns about the ethical implications, particularly in areas like plagiarism, cheating, and over-reliance on AI tools for completing assignments.

The predominant role of numerous GenAI tools is to replicate human conversational abilities and cognitive processes^[1]. Recent advancements indicate that GenAI tools have evolved significantly, now demonstrating the ability to generate new content, including poems, computer code, written texts, and other outputs within their operational scope^[36-38]. In the context of ICT learning, students use GenAI to assist them in “[understanding] concepts and improve their own work” as it “can give ideas or help with research.” For example, some students use ChatGPT to generate codes and ask it to explain each chunk of codes it has (**Figure 1**). For them, this intellectual resource “...can be useful for helping students complete their tasks faster.” The potential for GPTs to provide direct instruction and educational resources to learners is particularly noteworthy^[58]. This paper argued that GenAI in education offers students an avenue for self-directed learning enabling them to expand their understanding about a topic. It encourages students to take part in their learning processes and responsive to their personal learning needs. Such competence is essential in 21st century education system^[59], as students are expected to display curiosity, autonomy, and accountability to their learning^[60].



The image shows a screenshot of a ChatGPT conversation. The user's prompt is: "Can you make a Python code that solves the mean/average of values within a vector? Give explanations." The AI's response is: "Here's a simple Python code to calculate the mean (average) of values in a vector (list) along with explanations:" followed by a code block. The code defines a function named 'calculate_mean' that takes a list of values and returns the mean. It includes comments explaining each step: checking for an empty vector, summing the elements, and dividing by the number of elements. An example usage is provided at the bottom: 'vector = [10, 20, 30, 40, 50]', 'mean_value = calculate_mean(vector)', and 'print("The mean of the vector is:", mean_value)'. The code block has a 'Copy code' button in the top right corner.

```
python
# Define a function to calculate the mean
def calculate_mean(values):
    # Check if the vector has elements
    if len(values) == 0:
        return "The vector is empty."

    # Sum all the elements in the vector
    total_sum = sum(values)

    # Divide the total sum by the number of elements to get the mean
    mean = total_sum / len(values)

    return mean

# Example usage:
vector = [10, 20, 30, 40, 50]
mean_value = calculate_mean(vector)
print("The mean of the vector is:", mean_value)
```

Figure 1. Prompt from ChatGPT generating a python code for students' activity.

However, ICT students raised their concerns about the proliferation of GenAI in academic settings, particularly in encouraging overreliance and academic dishonesty among students. Rudolph, Tan and Tan^[61] argued that the “proliferation of GenAI technologies like ChatGPT poses significant challenges to traditional assessment methods, particularly essays and online examinations.” ICT college students shared similar concerns explaining “students are really using AI just to cheat or plagiarize the work from the internet.” They observed that when faced with difficult problems, students sometimes turn to AI for quick answers, rather than putting in the effort to understand underlying concepts. This over-reliance could impact their long-term learning and ability to solve complex problems independently. Yusuf, Pervin and Román-González^[1] conducted an online survey among 1217 participants across 76 countries examining the usage, benefits, and concerns of GenAI in higher education from a multicultural standpoint. Their findings revealed that 46.4% of the participants believed that students using GenAI tools is an “outright cheating,” 36.3%

disagreed, and 17.4% were undecided. From the perspectives of ICT students, the use of GenAI constitutes to “outright cheating” because “Some students use AI to generate answers for assignments, quizzes, or exams” which are “plagiarized work and lack of self-ideas.”

Further, ICT college students still hold positive outlook towards the use of GenAI in education. Popenici et al.^[62] argue that when learning is reduced to minimal assessment tasks that can be delegated to AI, student motivation for genuine knowledge acquisition declines, posing serious implications for educational integrity in universities. For college students, having GenAI in education, “students rely on it too much, they may miss out on essential learning experiences.” Consequently, the integration of GenAI within higher education institutions signifies not merely a technological advancement but a profound transformation in the landscape of education^[57].

College students suggested that “Schools should allow AI to be used, but they should have rules that show students when it’s appropriate.” One student also said, teachers “...should educate students on when and how AI tools are acceptable, and where they cross the line into misuse.” Lim et al.^[63] present substantial evidence regarding the facilitation of academic misconduct by GenAI, highlighting a notable self-plagiarism index of 59%. The higher similarity index points out the necessity of conducting a thorough evaluation of the textual outputs generated by GenAI^[1]. With the increasing use of GenAI tools in education, concerns have arisen about maintaining academic integrity and ensuring that students genuinely engage with their assignments. Plagiarism detectors could support teachers in distinguishing between students’ original work and AI-assisted content, helping uphold the standards of independent learning and critical thinking in academic settings.

6. Conclusion

This study revealed that, while AI tools offer potential advantages for personalized and efficient learning experiences, they simultaneously present complex challenges related to academic integrity and learning authenticity. Filipino ICT college students expressed concerns over GenAI’s potential to erode traditional learning processes, with a primary emphasis on its impact on critical thinking, ethical responsibility, and personal accountability in academic work. The students’ perspectives highlighted a reality in which GenAI serves both as a valuable educational tool and a possible catalyst for academic dishonesty. Although GenAI provides immediate access to information and supports personalized learning, students voiced concerns that misuse, especially for completing assignments without clear understanding, risks compromising educational values and impeding students’ intellectual growth.

The findings suggested several implications for educational policy and instructional practices in higher education. Institutions should consider implementing structured guidelines and policies that address the responsible use of GenAI, balancing its benefits with the need to maintain academic standards. Educators are encouraged to integrate discussions on ethics and critical thinking around AI usage, promoting a culture of integrity and self-reliance. The development and deployment of AI detection tools, such as plagiarism software, would serve to monitor AI’s role in student submissions, reinforcing standards for originality and accountability. This paper reflected on the importance of rethinking assessment methods to emphasize students’ understanding and engagement, potentially shifting from product-based evaluations to process-oriented approaches. Consequently, this reflects a need for a holistic approach to AI integration, where technology complements learning without undermining academic principles.

This study had some limitations that may affect the generalizability of its findings. First, the research focused exclusively on Filipino ICT college students, whose experiences and perspectives may not reflect

those of students in other disciplines or cultural contexts. The study was conducted at a time when GenAI is still emerging, and perceptions may shift as students, educators, and institutions become more familiar with its implications. The continuous evolution of GenAI technologies could shape the landscape of educational integrity and learning dynamics, making longitudinal studies necessary to capture future changes. Finally, this research relied on self-reported data, which may be influenced by personal biases or social desirability. Future studies should consider expanding the scope to include large samples, as well as integrating quantitative measures to further substantiate qualitative insights.

Conflict of interest

The authors declare no conflict of interest.

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