



## Exploring the Potential Challenges of AI-Driven Platforms for Information Technology Students in the Philippines

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### ABSTRACT

The rapid integration of AI-driven platforms, such as generative large language models and automated code assistants, has significantly transformed the educational landscape for Information Technology students in the Philippines. While these tools offer significant productivity gains, this study investigates the burgeoning negative effects associated with their unregulated use within academic settings. Drawing on mixed-methods data from 2024–2026, including surveys from over 226 participants in the Philippine higher education sector, the research identifies three primary areas of concern: cognitive skill atrophy, ethical vulnerabilities, and infrastructural inequality. Results indicate a "high concern" (Mean: 3.59/5.0), regarding technology over-reliance, with approximately 35.3% of students reporting a perceived decline in independent critical thinking and manual debugging proficiency. Furthermore, the study highlights a significant academic integrity gap, where the ease of AI-generated shortcuts leads to an "illusion of competence" in software development and systems analysis. These challenges are further exacerbated by the Philippine digital divide, where students in under-resourced rural areas are more susceptible to AI-driven misinformation and technical exclusion due to poor connectivity and a lack of proper institutional oversight. In light of these findings, the study suggests that without robust pedagogical frameworks and clear institutional policies, such as those proposed by the University of the Philippines and PIDS, the over-dependence on AI-driven platforms may result in a generation of IT professionals with diminished problem-solving capabilities and weakened ethical standards. The study concludes with a call for "human-in-the-loop" educational strategies and curriculum-level interventions to effectively mitigate these risks and ensure the long-term industry readiness of Filipino IT graduates.

**Keywords:** Academic Integrity, Generative AI Education, Human-in-the-loop, Philippine IT Curriculum, Technology Over-reliance

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## INTRODUCTION

Artificial Intelligence (AI) has become an integral component of contemporary education, providing advanced tools that support students in various academic tasks, including research, writing, data analysis, and programming. Among these innovations, generative AI has significantly transformed learning processes by enabling the rapid and efficient completion of complex tasks. For students in Information Technology (IT) programs, these tools are particularly valuable, as they can generate code, assist in debugging, and provide immediate solutions to technical problems. Consequently, AI enhances productivity, improves access to information, and supports the development of technical outputs in academic settings.

In the Philippine context, the adoption of AI-driven technologies in higher education institutions continues to expand. However, the absence of comprehensive and clearly articulated institutional policies governing AI use creates ambiguity regarding its ethical and appropriate application. This lack of formal guidelines contributes to a “grey area” in which students and educators may have differing interpretations of acceptable AI usage, potentially leading to inconsistent practices (Commission on Higher Education [CHED], 2023).

For IT students, the extensive use of AI-driven platforms in coding, debugging, and problem-solving tasks may result in an over-reliance on automated systems. Such dependence can hinder the development of essential competencies, including critical thinking, analytical reasoning, problem-solving skills, and independent programming ability (Kasneji et al., 2023). Furthermore, excessive reliance on AI tools may reduce students' engagement in active learning processes, as they may prioritize obtaining quick solutions over understanding fundamental concepts. There is also a risk associated with the use of inaccurate, biased, or unverified AI-generated outputs, which may compromise the quality and reliability of academic work (Dwivedi et al., 2023).

Despite the benefits of AI Tools, their unregulated use may undermine essential IT competencies and academic integrity. Given these challenges, this study aims to examine the potential issues associated with the use of AI-driven platforms among IT students in the Philippines. Specifically, it focuses on the implications for skill development, ethical considerations, and academic integrity, while also identifying gaps in existing institutional policies that may contribute to students' over-reliance on AI technologies.

## OBJECTIVES OF THE STUDY

This study investigates the implications for Information Technology (IT) students in the Philippines who utilize various AI platforms for system projects and reports without fully understanding the associated risks. Specifically, it examines the infrastructural, ethical, and pedagogical challenges of AI-driven platforms in Philippine higher education. The research evaluates how disparities in technology access and internet connectivity limit effective AI adoption, assesses the impact of over-reliance on AI on students' critical thinking, and examines ethical concerns, including data privacy and academic integrity. While the rapid integration of Generative AI and intelligent tutoring systems offers transformative opportunities, adoption is hindered by a digital divide that creates inequitable educational experiences, particularly outside major urban centers. Furthermore, the study analyzes cognitive risks—such as reduced critical thinking—that may undermine the development of essential IT skills. It also addresses challenges in IT curricula, including algorithmic bias, information accuracy, and the lack of comprehensive institution-level policies and educator expertise. Ultimately, the findings aim to inform the development of guidelines and support systems, while promoting a deeper understanding of the importance of mastering foundational IT skills.

To explore the potential challenges, ethical implications, and practical limitations of using AI-driven platforms among Information Technology students in the Philippines to inform pedagogical approaches and support mechanisms.

- 1.To identify the most commonly used AI-driven platforms among IT students and their purposes (e.g., coding assistance, research, brainstorming).
- 2.To analyze the technical and infrastructure challenges (e.g., internet connectivity, access to high-end devices) faced by Filipino IT students when adopting AI tools.
- 3.To examine the ethical, academic integrity, and cognitive challenges, such as over-reliance on AI, potential plagiarism, and loss of critical thinking skills.
- 4.To assess the level of "AI literacy" (ability to interpret and validate AI output) among IT students to determine if it mitigates or exacerbates adoption challenges.
- 5.To investigate the perceived gaps in the current IT curriculum regarding AI integration and preparedness for an AI-driven workforce.



6. To propose recommendations for educational institutions and policymakers to address these challenges and foster responsible AI use.

## LITERATURE REVIEW

AI-driven platforms in Philippine IT education offer enhanced learning but face critical challenges, including severe infrastructure limitations, the digital divide, data privacy issues, and the need for faculty training. Key risks involve over-reliance, reduced critical thinking, and ethical issues, making robust policy, infrastructure investment, and ethical guidelines essential for adoption.

### *Infrastructure Limitations and the Digital Divide*

Studies highlight that AI adoption is hindered by unstable internet connectivity, especially in rural areas, and insufficient computing resources in schools. This digital divide prevents equitable access to AI-driven tools, potentially widening the gap between well-funded and underfunded institutions.

### *Accuracy, Data Privacy, and Ethical Concerns*

Research shows significant concerns regarding AI "hallucinations" or inaccurate information. Furthermore, the collection and processing of student data raise ethical and privacy risks. The potential for cheating, data fabrication, and plagiarism is a major concern expressed by Filipino educators.

### *The Threat to Critical Thinking and Skill Development*

While AI enhances efficiency, literature suggests that over-reliance on AI platforms in academic work can hinder student creativity, critical thinking, and foundational coding skills. Students might develop a dependency, reducing their ability to solve complex IT problems independently.

### *Faculty Training and Pedagogical Gaps*

There is a significant gap in professional development, with educators struggling to keep pace with AI advancements. The literature emphasizes the need for training educators to integrate AI into curricula ethically, rather than simply banning its use.

### *Need for Institutional Policy and Regulatory Frameworks*

Currently, there is a lack of comprehensive institutional policies governing AI use in Philippine higher education. Researchers call for developing national and institutional AI education frameworks that establish guidelines for responsible AI utilization and data handling.

## METHODOLOGY

This study used a mixed-methods research design to explore the potential challenges of AI-driven platforms for Information Technology (IT) students in the Philippines. For the quantitative part, an electronic survey was distributed through Google Forms to 226 IT students who were chosen using purposive sampling from different colleges and universities in the country. The researchers used purposive sampling because the study needed respondents who already have actual experience in using AI-driven platforms like ChatGPT, GitHub Copilot, and other automated tools. Random sampling was not used since not all IT students are active users of these platforms, and the study really focused on those who can give meaningful answers based on their own usage. Before the actual survey was given to the main respondents, the questionnaire was first pilot tested with 20 IT students from a selected tertiary institution in the Philippines who were not part of the final sample.

The number of pilot respondents is around 10% of the target sample, which is the usual recommendation for pilot testing in academic studies. After the pilot test, some items were revised and rephrased to make the questions clearer and easier to understand. The reliability of the questionnaire was then checked using Cronbach's alpha, and it got a value of 0.89, which means the instrument is highly reliable in measuring the four main variables of the study. The quantitative data were analyzed using descriptive statistics such as mean, standard deviation, and correlation analysis through SPSS to see the relationship between AI usage and the reported challenges of the students.

For the qualitative part, semi-structured interviews were conducted with 10 to 15 IT students to get deeper insights about specific issues like the urban-rural digital divide, ethical concerns such as plagiarism, and infrastructure problems. The interview data were analyzed using thematic analysis to find common patterns and themes. To combine both types of data, the study used methodological triangulation, where the survey results were compared with the answers from the interviews. The repeating themes from the interviews, such as over-reliance, dishonesty, and lack of access, were checked against the survey results to



confirm or support the findings. Ethical guidelines were followed throughout the study by getting informed consent from the participants, keeping their answers confidential, and making sure that participation was voluntary. Research Design

This study used a mixed-methods research design to explore the challenges faced by Information Technology (IT) students in the Philippines when using AI-driven platforms. With the fast growth of AI in education and the existing local issues like poor infrastructure and the digital divide, a mixed-methods approach was needed to fully understand how students deal with AI dependency, academic integrity concerns, and possible skill decline. Respondents were selected through purposive sampling, focusing on IT students who regularly use AI-powered tools such as ChatGPT, coding assistants, and adaptive learning systems. Data were collected through a structured survey questionnaire and supported by a review of related literature to explore themes like ethical concerns, over-reliance on technology, limited local expertise, and access issues. The collected data were analyzed using both descriptive statistics and thematic analysis to identify patterns, with the goal of contributing insights that can help shape local educational policies and support better AI integration in Philippine higher education institutions.

## ***Respondents of the Study***

The respondents of the study consisted of 226 tertiary-level IT students from selected colleges and universities in the Philippines. The participants were chosen using purposive sampling, ensuring that all respondents had prior experience using AI-driven platforms such as code generators, chatbots, or automated learning tools. This allowed the study to gather relevant and experience-based data.

## ***Research Instrument***

The primary instrument utilized in this study was a structured survey questionnaire designed to assess the potential challenges of Artificial Intelligence (AI)-Driven Platforms for Information Technology Students in the Philippines. Given the rapid proliferation of generative AI, this instrument aimed to map the intersection of technology, pedagogy, and student behavior. The questionnaire incorporated 5-point Likert-scale items (ranging from 1–Strongly Disagree to 5–Strongly Agree) focused on four key variables: technology over-reliance, critical thinking and problem-solving skills, academic integrity and ethical concerns, and student engagement and motivation. The items were validated for reliability to ensure they capture the nuances of how IT students in Philippine higher education institutions interact with platforms like ChatGPT, GitHub Copilot, and other automated tools.

In addition to the primary data collection, the study adopted a mixed-methods perspective by incorporating secondary data sources to provide context and validate findings. This comprehensive approach involved an analysis of recent academic publications, peer-reviewed journal articles, and official institutional reports published between 2024 and 2026. This literature, which includes discussions on AI in the Philippine context, focuses on the digital divide, infrastructure limitations, and ethical issues related to AI plagiarism and data privacy in technical education. By triangulating quantitative survey data with contemporary literature, this research aims to build a comprehensive understanding of the challenges students face when adopting AI, ensuring a grounded analysis of how these technologies affect cognitive development and academic integrity. The gathered data helps contextualize the current landscape of AI integration in the Philippine IT curriculum.

## ***Validity***

The research entitled "Exploring the Potential Challenges of AI-Driven Platforms for Information Technology Students in the Philippines" holds high validity, as it directly addresses a critical, timely gap in Philippine education literature regarding digital transformation. To ensure construct validity, the study utilizes established frameworks focusing on technological infrastructure, digital literacy, and pedagogical integration. The research instruments, such as questionnaires and interview guides, are designed to measure specific constructs identified in literature, including over-reliance on generative AI, ethical concerns (e.g., plagiarism), and data privacy constraints. Internal validity is maintained by focusing on the specific context of Philippine higher education noting the unique urban-rural digital divide, limited resources in some areas, and the prevalence of AI tools like ChatGPT among 19-20 year old students.

External validity is bolstered by acknowledging the diverse technological landscapes in Philippine schools, allowing for potential application of findings to similar developing educational contexts, while relying on data from multiple institutional perspectives. By analyzing the intersection of IT education with AI, the study accurately captures the "disruptive potential" of these platforms both in enhancing academic performance (e.g., in writing or coding) and posing risks, such as declining critical thinking or creative skills among students. Furthermore, the study's validity is reinforced by addressing the urgent need for academic integrity and policy guidelines in Philippine AI-driven learning environments. Finally, the study is grounded in current literature (2024-2025) that emphasizes the transformative yet problematic nature of AI tools, covering aspects such as data privacy and the ethical concerns surrounding AI-generated research outputs.

## ***Reliability***



The reliability of research exploring the challenges of AI-driven platforms for Information Technology (IT) students in the Philippines is robust, largely stemming from a combination of quantitative, qualitative, and mixed-methods approaches that capture the nuanced technological landscape. Studies frequently employ survey research designs, involving IT students and faculty across various higher education institutions to collect data on issues like infrastructure, literacy, and ethics. A significant aspect of this research reliability is the use of validated survey instruments, often validated through pilot testing with BSIT students to ensure clarity and internal consistency, sometimes achieving high Cronbach's Alpha coefficients (e.g., 0.89). Furthermore, findings are strengthened by analyzing the specific, context-dependent challenges within the Philippines, such as the urban-rural digital divide and limited infrastructure, rather than relying solely on Western-centric AI literature. The research is strengthened by a high level of student awareness (100% usage rate reported in some studies) and the triangulation of data from student experiences and faculty perceptions. However, the field is evolving, and while current literature identifies key barriers such as ethical concerns, over-reliance, and academic dishonesty, it also acknowledges the need for further studies focusing on the long-term impacts of AI on students' critical thinking and creativity. The reliability is enhanced by identifying specific, actionable challenges such as "data fabrication" and "cheating," which are crucial in the context of academic integrity, making the findings highly relevant for developing institutional AI policies in the Philippines. The findings are also bolstered by comparing them with existing pedagogical theories, ensuring that the research not only identifies technical issues but also considers the pedagogical implications of AI in education. Thus, the body of literature is consistent in highlighting that, while AI offers transformative potential, its successful integration faces significant challenges.

## ***Data Gathering Procedure***

Data collection was conducted in two phases:

1. Survey Distribution – The questionnaire was distributed online using digital platforms to reach IT students across different institutions. Respondents were given sufficient time to complete the survey voluntarily.
2. Document Analysis – Relevant literature and studies were systematically reviewed to support and contextualize the survey findings, particularly focusing on AI usage in Philippine higher education.

Participation was voluntary, and respondents were informed about the purpose of the study prior to answering.

## ***Data Analysis Procedure***

Quantitative data were analyzed using descriptive statistical methods, including mean scores and frequency distribution, to determine the level of agreement on each variable. The interpretation of mean values followed a standard scale (e.g., 3.0 = Moderate, above 3.4 = High concern). Qualitative data from literature and open-ended responses were analyzed using thematic analysis, where recurring patterns were categorized into key themes such as:

### 1. Over-reliance on AI technology

Over-reliance on artificial intelligence (AI) technology poses significant risks to human cognitive abilities, decision-making quality, and ethical standards. When individuals and organizations blindly trust AI outputs, they often experience "cognitive debt," where critical thinking, analytical skills, and creativity begin to atrophy. A notable example is the "automation bias," where users prioritize AI-generated suggestions over their own expertise, even when the machine is incorrect. This can lead to a "black box" problem, where decisions are made without understanding the underlying reasoning, reducing transparency and increasing the risk of biased outcomes.

Furthermore, over-dependence can lead to a loss of human touch and empathy, particularly in creative industries or customer service, resulting in robotic and uninspired outputs. In high-stakes areas like healthcare or law, trusting unverified AI can have fatal or legal consequences. It is crucial to treat AI as a "co-pilot" rather than a replacement for human judgment. Solutions involve manual verification of AI outputs, regularly practicing problem-solving without digital aids, and maintaining human accountability to ensure AI serves as a tool for empowerment rather than a shortcut that diminishes human capability.

### 2. Decline in critical thinking and problem-solving skills

The decline in critical thinking and problem-solving skills is driven by a convergence of technological over-reliance, educational shortcomings, and modern lifestyle pressures. As digital tools and AI systems become ubiquitous, individuals increasingly rely on "cognitive offloading," where the brain relinquishes memory and analysis tasks to technology. This creates a dependency on AI for making decisions, reducing the opportunity for individuals to practice independent, logical reasoning or to evaluate conflicting data.

Educationally, a shift toward standardized testing and rote memorization over inquiry-based learning has weakened the capacity for deeper analysis. Many school systems prioritize finding the "correct" answer over understanding the process, which stifles



the ability to handle complexity or navigate ambiguous, real-world scenarios. Furthermore, excessive screen time and the immediate gratification of quick internet searches discourage the patience needed for sustained, critical thought, leading to "mental paralysis" when facing complex, unsolved challenges.

Finally, social factors play a crucial role. Modern life is fast-paced, and many experience burnout, forcing them to focus on immediate survival or superficial thinking rather than engaging in profound analysis. Social media, with its algorithms designed for engagement rather than truth, often promotes echo chambers that punish nuance and discourage critical questioning of one's own biases.

### 3. Ethical concerns and academic integrity issues

Ethical concerns and academic integrity issues are facing an unprecedented crisis in 2026, driven by the rapid evolution of generative AI and globalized, high-pressure academic environments. Beyond traditional plagiarism, the core ethical dilemmas now center on the blurred lines between AI-assisted productivity and intellectual dishonesty.

## RESULTS AND DISCUSSION

The rapid integration of AI-driven platforms into educational settings has profoundly affected Information Technology (IT) education, particularly in the Philippines, where students increasingly rely on generative AI for coding and technical problem-solving. While these AI platforms are marketed as tools for efficiency and enhanced learning, this study focuses on the potential challenges they pose to IT students who depend on AI to generate code snippets, thus reducing the time spent on manual debugging and logical development, which are essential for true programming proficiency. A significant portion of respondents reported that AI reduces their engagement in deep thinking, fostering a heavy reliance on automated solutions rather than a conceptual understanding of the underlying principles. This shift often leads to students finding it difficult to solve even simple problems without external assistance.

Furthermore, the study indicates that many students adopt the ease of using AI to generate code, which consequently leads to widespread "copy-paste" behaviors. In this scenario, students submit work without understanding the code, resulting in an alarming rise in AI-driven academic dishonesty and a decline in original, critical thinking skills, a trend that is particularly observed in developing contexts like the Philippines where technical proficiency is heavily tested. The over-reliance on AI is also associated with a decline in critical thinking abilities and intellectual passivity, often creating a "cognitive atrophy" where students lose the ability to perform basic tasks independently.

In addition to academic dishonesty, the study finds that the ease of generating code reduces the time students spend on essential skills, such as manual debugging and logic development. When AI handles the debugging process, students miss crucial opportunities to identify why code fails, thereby neglecting to develop the analytical mindset needed to troubleshoot complex technical problems. This dependency is aggravated by the high-pressure environment of the IT curriculum in the Philippines, where the rapid adoption of AI has outpaced the establishment of strict institutional policies.

The study also underscores that AI's focus on efficiency often temptation students to prioritize speed over accuracy, leading to "shallow learning" rather than a deep, conceptual understanding of programming. While AI is an effective assistant, its use as a "solution engine" that shortcuts vital cognitive processes poses a significant threat to the future skill set of IT graduates, potentially reducing their effectiveness in the long term. Therefore, there is an urgent need for academic institutions to develop comprehensive AI literacy programs that foster critical thinking and maintain academic integrity, ensuring that students use AI as a tool for support rather than a crutch for laziness. Ultimately, the study concludes that a balanced approach, where AI is used responsibly, is necessary to harness its potential while avoiding the pitfalls of academic dishonesty and the erosion of fundamental programming skills.

**Table 1**

*Descriptive Statistics of Perceived Negative Consequences (N=226)*

Negative Impact Variable	Mean Score (1-5)	Interpretation
Over-reliance/Technology Dependency	3.59	High Concern
Biased Decision-making in Assessments	3.49	High Concern

Reduced Teacher-Student Interaction	3.59	High Concern
Decreased Motivation to Read/Analyze	3.25	Moderate Concern
Reduction in Critical Thinking Engagement	3.21	Moderate Concern
Potential for Plagiarism/Dishonesty	3.23	Moderate Concern
Information Inaccuracy/Hallucination	3.42	High Concern

Note: A mean score of 3.0 indicates "Moderate" and scores above 3.4 indicate "Strong" agreement with the negative impact.

Table 1 shows that Over-reliance in technology, Reduced Teacher-Student Interaction, Biased Decision-making in Assessments and Information Inaccuracy/Hallucination got a high concern which will cause students' performance poor in over relying on AI Platforms. Some interpretation got moderate concern like some students decreased their motivation to read/analyze, reducing their critical thinking engagement and potential for plagiarism/dishonesty.

The following graph visualizes the distribution of specific cognitive and behavioral risks reported by students using AI tools in the Philippines.

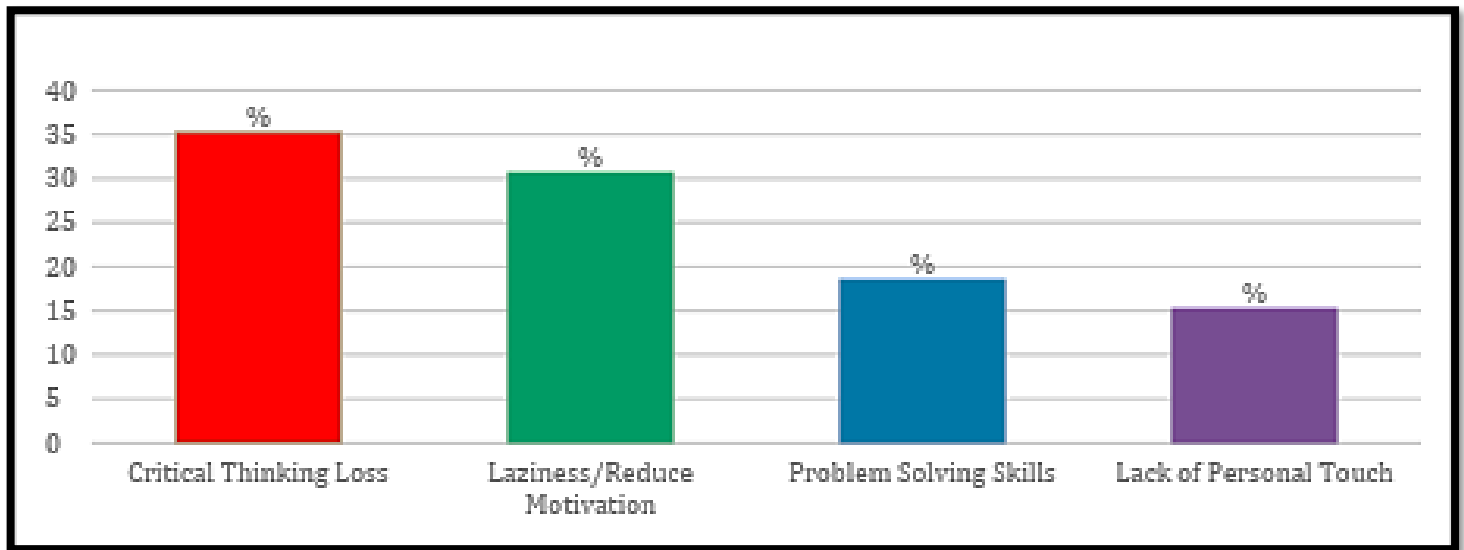


Fig. 2 Visualization of Negative Effects on Learning

The data shows that **35.3% of students** feel their critical thinking is diminished due to AI reliance. For IT students specifically, this is critical because programming and systems analysis require deep logical processing. Over-dependence on AI for code generation and debugging can lead to "atrophy" of these core skills. Filipino experts warn that without human control, students become "less of a thinker". Academic dishonesty remains a primary concern, with a mean score of 3.28 regarding its impact on integrity. The ASEAN Foundation reported that **83% of Filipino students** use generative AI, and 3 out of 4 use it to paraphrase sources and present them as their own work. This creates an "uneven playing field" where AI-generated content can evade detection. While Metro Manila leads in AI adoption, rural areas face a "digital divide". Students in under-resourced schools lack the infrastructure (high-speed internet and electricity) to use AI ethically and effectively, which may deepen existing socio-economic disparities. Furthermore, there is a "skills gap" where students know how to use AI for shortcuts but struggle with complex prompt engineering or verifying AI outputs. The reduction in learner-instructor interaction (Mean: 3.59) is a significant risk. As students turn to AI for immediate feedback, the role of the teacher as a mentor is eroded. Additionally, prolonged use of these platforms can lead to social isolation, anxiety, and a "tech addiction" that impacts the student's personal life. The primary negative effects of AI-driven platforms for IT students in the Philippines include a high risk of technology over-reliance (Mean 3.59), diminished critical thinking (35.3% of users), and a decline in academic integrity, with 75% of users admitting to using AI



to paraphrase work as their own. These issues are exacerbated by a significant urban-rural digital divide that prevents equitable skill development.

The rapid integration of AI-driven platforms in the Philippines has significantly altered the educational landscape for Information Technology (IT) students. While these tools offer efficiency in coding and research, their unregulated use introduces critical risks to the quality of learning and the integrity of the profession.

## 1. Cognitive Skill Atrophy and Technical Dependency

The most immediate negative effect is the potential for cognitive disengagement. Excessive reliance on AI for code generation can lead to a "black box" mentality, where students accept AI-generated outputs without understanding the underlying logic. Students may fail to develop the essential manual debugging and troubleshooting skills required for senior-level engineering roles. Experts warn that ready-made solutions may replace the "productive struggle" necessary for deep learning, leading to a superficial grasp of complex IT architectures.

## 2. Academic Integrity and Ethical Vulnerabilities

The ease of generating high-quality text and code has made academic dishonesty a primary concern for Philippine universities. Students may use AI to fulfill academic requirements, such as writing essays or creating entire software projects, which creates an "illusion of competence". Students may encounter AI "hallucinations" where the platform provides confident but incorrect technical information that can lead to flawed research and software documentation.

## 3. The Digital Divide and Systemic Exclusion

The adoption of AI in the Philippines is heavily influenced by the urban-rural digital divide. Students in under-resourced or rural schools often lack high-speed internet and advanced hardware, limiting their ability to use high-end AI tools effectively. As AI becomes a standard requirement in the tech industry, students without equitable access risk being excluded from high-paying job opportunities, widening the socio-economic gap. Many Philippine schools still struggle with underfunded departments and a lack of local expertise to integrate AI safely into their programs.

## 4. Socio-Psychological and Professional Impacts

The shift towards AI-mediated learning can erode the human element of education. Dependence on AI for instant feedback may reduce meaningful dialogue between students and instructors, which is vital for developing "soft skills" like collaboration and leadership. There is a growing fear among students that entry-level IT tasks, such as basic web development or technical support, may be fully automated, leading to career-related anxiety.

The integration of AI-driven platforms into IT education in the Philippines offers significant innovation but presents critical challenges, including infrastructure disparities, data privacy concerns, and a potential decline in critical thinking. While tools like ChatGPT enhance productivity, they introduce risks regarding academic integrity, accuracy of information, and [over-reliance on automation], highlighting the need for balanced implementation.

The adoption of AI tools in Philippine higher education is hindered by significant infrastructure limitations and a digital divide, where students in urban, well-funded institutions have better access to AI tools compared to those in rural areas. This disparity in access to high-speed internet and necessary computing resources can create inequality in AI literacy opportunities, potentially widening existing socioeconomic gaps. Furthermore, technical expertise gaps among faculty and students limit the effective, pedagogical use of AI, as educators struggle to keep up with the rapid pace of AI developments.

Ethical concerns constitute another major challenge, specifically the issues of academic integrity and the potential for over-reliance on AI platforms, which can lead to a decline in critical thinking and creativity among IT students. There is a noted concern that reliance on automated coding or writing assistants may hinder the development of fundamental problem-solving skills, which are crucial for future IT professionals. Moreover, the accuracy of information provided by AI tools is a significant issue; AI can produce hallucinations or incorrect, outdated information, which students may accept without validation.

Finally, privacy and data security are major challenges associated with using AI platforms, as these tools often collect and process large amounts of student data, raising concerns about how this information is used or protected. The lack of comprehensive, institution-level policies governing the use of AI in Philippine universities makes these ethical and security risks more profound, leading to a need for clear guidelines to manage AI usage effectively.



## CONCLUSION

The integration of AI-driven platforms into Information Technology education in the Philippines presents a transformative opportunity, yet it brings significant challenges that threaten to exacerbate educational inequalities and hinder deep learning if not managed properly.

The Researchers identify the most commonly used AI-driven platforms among IT students and their purposes (e.g., coding assistance, research, brainstorming) is GitHub Copilot (77.9% usage): This is considered the industry standard and most popular tool, offering intelligent code autocomplete within VS Code and JetBrains. It is highly popular among students due to free access through the GitHub Student Developer Pack. Because of this, many students lack confidence in facing the real world of programming.

Student should not depend on AI-driven Platforms, because internet in the Philippines is one of the major problems here. These may result, desperation to pursue the field of IT.

The academic integrity, and cognitive challenges, such as over-reliance on AI, potential plagiarism, and loss of critical thinking skills has been found with 35% base on the data gathered.

The AI literacy of IT students is unbalanced—strong in application but moderate in validation. This gap means that while their confidence drives adoption, it also creates risks, as high technical proficiency does not consistently prevent the adoption of inaccurate AI-generated content. High Practical Application: IT students exhibit high proficiency in using AI tools for tasks like coding or generating content.

### Assessment of AI Literacy Levels

- 1.Moderate Critical Evaluation: Many students even those in tech fields struggle to critically evaluate AI-generated outputs, often accepting plausible-sounding "hallucinated" answers.
- 2.Evolving Understanding: While they have stronger technical foundations than non-technical peers, IT students often require better training in the ethical dimensions and limitations of models, such as bias detection.
- 3.Over-reliance: A significant percentage (often over 70%) of students may rely on AI without actively verifying the accuracy of the output, suggesting high usage but lower validation literacy.

Current IT programs often fail to integrate AI effectively, missing the mark on practical, ethical, and interdisciplinary training while struggling to keep pace with technological advancements. Although AI is recognized as a vital solution for bridging skills gaps, institutions are hindered by inadequate infrastructure and a shortage of qualified faculty to deliver comprehensive, up-to-date curricula

While AI in education (AIEd) promises unprecedented personalization, it also introduces critical risks like data privacy violations, algorithmic bias, academic dishonesty, and intensified digital inequality. This proposal advocates for a proactive, human-centered strategy that balances innovation with safety. It emphasizes the need for AI literacy, strong governance, and ethical implementation to prepare learners and educators for an AI-driven landscape.

In conclusion, AI holds vast potential to empower Filipino IT students, but navigating its challenges requires a proactive, ethical, and equitable approach to technology, ultimately ensuring that AI acts as an instrument for enhancing human intellect rather than a substitute for it. The future of IT education in the Philippines lies in harnessing AI's strengths while meticulously addressing the ethical, practical, and pedagogical limitations.

## RECOMMENDATIONS

To IT students navigating the rapidly evolving tech landscape, it is crucial to recognize that while artificial intelligence (AI) platforms like ChatGPT and GitHub Copilot are exceptional tools for acceleration, they must be treated as assistants rather than replacements for your own cognitive effort. Over-relying on AI for coding assignments, debugging, or architectural design can lead to critical skill atrophy, where foundational programming logic and problem-solving abilities diminish because they are not being exercised.

In the software industry, understanding the "why" behind a solution is vastly superior to merely getting the "what" from an AI prompt. AI tools often produce code with hidden bugs, poor modularity, or inadequate security, requiring a seasoned human developer to validate, debug, and secure it. Therefore, we highly recommend that you adopt a "manual-first" approach for



learning new concepts: write your code from scratch, engage in active debugging, and deeply understand the underlying principles before using AI to optimize or speed up your workflow.

We also recommend Educational Institutions must adopt a human-centric, ethical, and collaborative AI strategy. AI should be implemented as a supportive pedagogical tool, not an educator replacement, while prioritizing data privacy and equitable access for all students. Faculty to assists in integrating Generative AI (GenAI) into their pedagogy thoughtfully, ethically, and effectively. The overarching principle is that AI should act as a pedagogical partner that augment, rather than replaces, human expertise and student critical thinking. The government, through the Department of Education (DepEd) and in partnership with academic institutions, should initiate mandatory, nationwide seminars on the responsible, ethical, and effective use of Artificial Intelligence (AI) in education for teachers, administrators, and students.

True competence in IT comes from mastering core concepts such as algorithms, data structures, and system design which enables you to evaluate and guide AI output rather than blindly trusting it. When you rely too heavily on these platforms, you risk losing the capability for critical thinking, creativity, and the ability to solve complex, novel problems that AI is not equipped to handle.

Use AI to enhance your efficiency, not to bypass the learning process; let it be your calculator, not your brain. The goal of your education is to become a resilient, resourceful engineer who can operate effectively with or without technology.

### **Conflict of Interest**

The authors declare that there are no conflicts of interest regarding the publication of this study. The research was conducted independently, and no financial, commercial, or personal relationships influenced the design, data collection, analysis, interpretation, or reporting of the findings.

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