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Beyond the Algorithm: A Qualitative Inquiry into How College Students Navigate Artificial Intelligence Tools

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ABSTRACT

This qualitative narrative inquiry explored how undergraduate teacher education students at Sacred Heart College of Calamba, Incorporated, navigated artificial intelligence (AI) tools in academic and inquiry-based tasks during School Year 2025–2026. The study examined students' lived experiences, academic challenges, and coping mechanisms through semi-structured interviews and narrative thematic analysis. The thesis identifies fifteen purposively selected students with experience using AI for coursework and exposure to Technology for Teaching and Learning 1 and 2. Findings revealed that students routinely used AI to support writing, research, brainstorming, comprehension, and task completion. While these tools offered convenience, feedback, and improved productivity, students also encountered inaccurate responses, unreliable references, difficult explanations, cognitive dependency, diminished confidence in independent work, and uncertainty about academic integrity. Participants reported fact-checking, rewriting AI outputs, contributing personal ideas, limiting AI assistance, monitoring their dependence, and observing institutional expectations. The findings portray AI as a potentially useful learning scaffold whose benefits depend on students' critical engagement and ethical judgment. Clear institutional guidance, AI literacy, and assessments that sustain independent thinking are recommended.

Keywords: *artificial intelligence; academic integrity; AI literacy; college students; narrative inquiry; cognitive dependency.*

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Introduction

Artificial intelligence has become increasingly visible in higher education, changing how students search for information, compose academic texts, generate ideas, and approach inquiry-based tasks. Tools such as ChatGPT and AI-assisted writing applications can provide explanations, draft suggestions, language corrections, and rapid feedback. Their accessibility makes them attractive to students managing coursework and deadlines. Yet their usefulness introduces an important educational question: whether technological assistance strengthens learning or displaces the reasoning that learning requires.

The literature reviewed in the thesis portrays AI as both an instructional scaffold and a potential cognitive crutch. When students use generated responses as starting points for questioning, comparing evidence, and revising ideas, AI may support engagement and reduce unnecessary workload (Dempere et al., 2023; Chan & Hu, 2023). When students accept outputs uncritically, however, polished responses can conceal factual errors, weak references, and superficial understanding. Concerns about authorship and the boundaries of acceptable assistance further complicate the use of AI in writing and research.

Academic integrity is especially important in teacher education, where students are preparing to become educators who will model responsible digital practices. AI-supported writing can blur distinctions among editing, brainstorming, and submitting generated work as one's own. Moreover, access to AI tools does not automatically confer the ability to evaluate outputs or recognize fabricated information. Responsible integration therefore requires not only technical familiarity but also critical AI literacy, self-regulation, and clear expectations from instructors and institutions.

In a theoretical perspective, Constructivist Learning Theory (Piaget, 1936), Sociocultural Theory (Vygotsky, 1978), and Cognitive Load Theory (Sweller, 1988), as presented in the thesis. Constructivism emphasizes the active construction of knowledge; sociocultural theory situates learning within interactions and mediating tools; and cognitive load theory draws attention to the balance between helpful support and reduced cognitive effort. Together, these perspectives suggest that AI can facilitate learning when it assists, rather than replaces, the learner's intellectual work.

Although studies increasingly document AI adoption and its perceived benefits, the thesis identifies a need for closer attention to students' own accounts of decision-making, ethical concerns, and learning habits in a Philippine higher education setting. Understanding these narratives can help distinguish purposeful academic support from passive reliance. The investigation focused on undergraduate teacher education students at Sacred Heart College of Calamba, Incorporated, who had completed or were enrolled in Technology for Teaching and Learning 1 and 2.

Specifically, the study sought to answer three questions: What are students' lived experiences of using AI tools for academic and inquiry-based tasks? What academic challenges do they encounter? What coping mechanisms and strategies do they develop to regulate AI use? By centering these questions, the study aimed to inform teaching approaches, institutional guidance, and student practices that promote innovation while maintaining academic honesty and independent thinking.

Methods

The study employed a qualitative narrative inquiry design at Sacred Heart College of Calamba, Incorporated, Calamba, Misamis Occidental, during School Year 2025–2026. The thesis describes purposive selection of fifteen undergraduate teacher education students who had completed or were taking Technology for Teaching and Learning 1 and 2 and had firsthand experience using AI tools for coursework. Data were obtained through semi-structured, in-depth interviews designed to elicit experiences, challenges, and coping strategies. The research instrument was subjected to expert review, and interview narratives were transcribed, coded, and organized into themes through narrative thematic analysis; the methodology also identifies NVivo as an intended analytical aid. The study described voluntary participation, informed consent, confidentiality, and attention to the Data Privacy Act of 2012. Findings were interpreted as situated student accounts rather than measurements of academic performance or causal effects of AI use.

Results and Discussions

1. Lived Experiences of College Students Using AI

Emergent Themes	Sub-Themes
Widespread Integration of AI in Academic Tasks	Frequent Use of AI Tools (e.g., ChatGPT, Grammarly); Use Across Multiple Subjects; Use for Writing, Research, and Understanding Lessons
AI as a Learning Support Tool	Use for Planning, Drafting, and Revising; Idea Generation and Brainstorming; Simplifying Complex Concepts
Increased Efficiency and Productivity	Faster Task Completion; Time-Saving Benefits; Easier Completion of Assignments
Enhanced Comprehension and Accessibility	Improved Understanding of Difficult Topics; Immediate Feedback and Explanation; Personalized Learning Support
Emerging Dependency and Reduced Critical Thinking	Overdependence on AI; Reduced Independent Thinking; Difficulty Generating Own Ideas
Impact on Confidence and Academic Identity	Doubting Own Ideas; Questioning Originality of Work; Reduced Self-Confidence
Balancing AI Use and Human Thinking	Use as Guide, Not Replacement; Revising and Personalizing Outputs; Verifying AI Information
Ethical Dilemmas and Academic Integrity Issues	Concerns About Academic Honesty; Uncertainty About Acceptability; Fear of Plagiarism or Detection
Limitations and Challenges of AI Tools	Inaccurate or Irrelevant AI Responses; Need for Verification of Information; Difficulty Understanding AI Output

The findings revealed that students experienced the widespread integration of artificial intelligence (AI) into their academic activities, particularly in writing, research, lesson comprehension, brainstorming, drafting, and revising academic outputs. Participants described AI-powered applications, including ChatGPT and Grammarly, as accessible learning resources that supported academic productivity and facilitated the completion of various educational tasks. They emphasized that AI provided immediate explanations, simplified complex concepts, generated ideas, and assisted in organizing academic requirements, thereby reducing the time and effort needed to accomplish assignments. These experiences suggest that AI functions as a supplementary learning resource that can support students' academic engagement and access to information. These findings are consistent with Kasneci et al. (2023), who discussed the potential of large language models to support personalized learning, feedback, and educational assistance. Similarly, Lo (2023) identified potential educational applications of ChatGPT, including instructional support, content generation, and learning assistance, while also highlighting the need to consider its limitations.

Furthermore, Sweller (1988) explained that learning is influenced by cognitive demands, providing a theoretical perspective for understanding how instructional support may reduce unnecessary cognitive processing. However, the findings suggest that AI-assisted efficiency should not automatically be interpreted as improved learning, since meaningful understanding still requires students' active participation, critical evaluation, and independent reasoning. Participants identified emerging concerns regarding overdependence on AI, reduced independent thinking, diminished confidence in their original ideas, academic integrity, and the reliability of AI-generated information. Although students recognized the convenience of AI-assisted learning, some expressed uncertainty about the originality of their academic work and the appropriate boundaries of AI use. Participants also acknowledged that inaccurate, irrelevant, or misleading AI-generated responses required verification and careful judgment. Consequently, they emphasized the importance of treating AI as a guide rather than a replacement for human reasoning, revising generated outputs, and maintaining personal responsibility for academic submissions. These findings are supported by UNESCO (2023), which emphasized the importance of human-centered approaches, ethical safeguards, and responsible integration of generative AI in education and research.

Likewise, Tlili et al. (2023) discussed the educational opportunities and ethical challenges associated with chatbot technologies, including concerns about reliability, academic integrity, and responsible use. Kasneci et al. (2023) further highlighted the importance of critical thinking and human oversight when integrating large language models into educational activities. Overall, the findings suggest that students' experiences with AI reflect a complex relationship between technological assistance and academic independence. While AI offers opportunities for improved efficiency, accessibility, and learning support, its educational value depends on students' ability to verify information, exercise critical judgment, preserve academic integrity, and maintain ownership of their learning processes.

2. Academic Challenges in Navigating AI Tools

Emergent Themes	Sub-Themes
Reliability and Accuracy Issues	Inaccurate or Misleading AI Responses; Irrelevant or Misaligned Answers; Lack of Reliable References
Comprehension and Cognitive Challenges	Difficulty Understanding AI Outputs; Complex or Confusing Explanations; Misinterpretation of Information
Dependency and Reduced Critical Engagement	Overdependence on AI Tools; Reduced Independent Thinking; Difficulty Generating Own Ideas
Cognitive Skill Decline	Loss of Critical Thinking Skills; Reduced Problem-Solving Ability; Superficial Learning
Impact on Confidence and Academic Identity	Doubting Personal Abilities; Reduced Self-Confidence; Comparing Own Work with AI Outputs
Ethical and Policy-Related Challenges	Confusion About Academic Integrity; Uncertainty on Acceptable AI Use; Fear of Plagiarism or Detection
Technological and Accessibility Constraints	Limited Access to Internet/Data; Lack of Devices or Resources; Connectivity Issues
Technical and Usage Challenges	Difficulty Crafting Effective Prompts; Repeating Prompts for Desired Output; Limited Skill in AI Navigation

The findings revealed that students encountered various challenges in utilizing artificial intelligence (AI) for academic purposes, particularly concerning information reliability, comprehension difficulties, technological limitations, and excessive dependence on AI-generated outputs. Participants reported encountering inaccurate, misleading, irrelevant, and insufficiently supported responses, which required additional verification and evaluation of information. Some students also experienced difficulties understanding complex AI-generated explanations, interpreting responses, and formulating effective prompts to obtain relevant academic information. Furthermore, repeated reliance on AI for brainstorming, writing, and problem-solving raised concerns about reduced independent thinking, superficial learning, and diminished opportunities to practice critical reasoning. These findings are supported by Kasneci et al. (2023), who emphasized that large language models present educational challenges involving inaccurate information, potential learner overreliance, and the need for critical evaluation of generated content. Similarly, Lo (2023) identified concerns regarding the reliability of ChatGPT-generated information and its implications for teaching and learning. Sweller (1988) further explained that learning is influenced by cognitive demands, providing a theoretical basis for understanding how students may struggle when presented with explanations that exceed their existing knowledge or processing capacity. These perspectives suggest that although AI can facilitate academic activities, its effectiveness depends on students' ability to comprehend, evaluate, and independently apply the information provided. Importantly, participants' concerns about declining cognitive skills reflect their

perceptions and experiences rather than objectively measured reductions in critical thinking or problem-solving ability.

Moreover, participants identified challenges involving academic confidence, ethical decision-making, institutional policies, and unequal access to technological resources. Some students expressed doubts about their personal abilities when comparing their academic outputs with AI-generated responses, while others experienced uncertainty regarding acceptable AI assistance, originality, plagiarism, and compliance with academic integrity expectations. Limited internet connectivity, inadequate devices, and insufficient knowledge of effective AI prompting further complicated their academic experiences. These findings are consistent with UNESCO (2023), which emphasized the importance of ethical guidelines, equitable access, human agency, and responsible integration of generative AI in education. Likewise, Tlili et al. (2023) highlighted the ethical, pedagogical, and technological challenges associated with AI chatbots, including concerns about academic integrity, information accuracy, and appropriate educational use. Bandura (1997) also emphasized the importance of self-efficacy in shaping individuals' confidence, motivation, and persistence when performing challenging tasks, offering a theoretical perspective on students' reported uncertainty about their academic capabilities. Overall, the findings suggest that students' challenges in using AI extend beyond technological limitations to include cognitive engagement, academic independence, ethical responsibility, and personal confidence. Addressing these concerns requires clear institutional policies, AI literacy education, reliable access to digital resources, explicit guidance on effective prompting, and instructional practices that encourage students to critically evaluate AI-generated information while maintaining ownership of their academic work.

3. Coping Mechanisms and Strategies for Regulating AI Use

Emergent Themes	Sub-Themes
Maintaining Academic Originality	Rewriting AI Outputs in Own Words; Adding Personal Ideas and Insights; Revising and Personalizing Content
Critical Evaluation and Verification	Fact-Checking AI Information; Cross-Checking with Reliable Sources; Analyzing AI-Generated Content
Controlled and Purposeful AI Use	Using AI as Guide Only; Limiting AI for Brainstorming and Support; Avoiding Overdependence
Self-Regulation and Awareness	Self-Monitoring of AI Dependence; Recognizing Overreliance Signs; Limiting Use When Not Learning
Adherence to Academic Integrity and Policies	Following Teacher Guidelines; Respecting Institutional Rules; Using AI Responsibly and Ethically

The findings revealed that students employed various coping strategies to address the challenges associated with artificial intelligence (AI) use in academic activities, particularly maintaining academic originality, critically evaluating AI-generated information, and practicing controlled and purposeful AI utilization. Participants emphasized the importance of incorporating personal insights, revising generated content, and developing their own interpretations to preserve intellectual ownership of academic outputs. Rather than accepting AI-generated responses without evaluation, students reported verifying information, cross-checking claims with credible academic sources, and analyzing the relevance and accuracy of generated content before incorporating it into their work. These practices reflected their awareness of the potential limitations of AI and their efforts to maintain meaningful participation in the learning process. These findings are supported by Kasneci et al. (2023), who emphasized the importance of critical thinking, human oversight, and responsible engagement with large language models in educational settings. Similarly, UNESCO (2023) highlighted the need to preserve human agency, academic integrity, and ethical responsibility when integrating generative AI into education and research. Furthermore, Zimmerman (2002) explained that self-regulated learners actively monitor, evaluate, and adjust their learning strategies to achieve academic goals. These perspectives suggest

that responsible AI use requires students to remain active decision-makers who critically assess technological assistance rather than relying exclusively on automated responses. However, paraphrasing or personalizing AI-generated content does not independently establish academic originality or compliance with academic integrity policies, particularly when the use of AI is restricted or requires disclosure.

Moreover, participants demonstrated self-regulation and ethical awareness by establishing boundaries for AI use, monitoring their dependence on automated assistance, and following institutional guidelines and teachers' instructions. Students described using AI primarily for brainstorming, clarification, idea organization, and preliminary academic support while attempting to preserve independent reasoning and problem-solving opportunities. They also recognized the importance of limiting AI assistance when it interfered with their understanding or reduced their active engagement in academic tasks. These findings are consistent with Bandura (1991), who emphasized that self-regulation involves self-monitoring, personal judgment, and self-directed behavioral adjustment. Likewise, Tlili et al. (2023) discussed the importance of addressing ethical concerns and promoting responsible educational practices when using AI chatbots. Lo (2023) also highlighted the need for educators and institutions to establish appropriate practices for integrating ChatGPT into teaching and learning. Overall, the findings suggest that students' coping strategies reflect a developing awareness of the need to balance technological assistance with academic independence, critical thinking, and ethical responsibility. Across the three research questions, participants' experiences demonstrated that AI offered convenience, efficiency, and accessible learning support while simultaneously presenting challenges involving reliability, comprehension, overdependence, and academic integrity. Their reported strategies of information verification, content evaluation, purposeful use, self-monitoring, and adherence to academic policies illustrate efforts to maintain control over their learning processes. Nevertheless, the effectiveness of these strategies depends not only on students' individual responsibility but also on clear institutional policies, appropriate teacher guidance, and sustained AI literacy education that promotes responsible, transparent, and academically meaningful technology use.

Conclusions

College students in the study integrated AI tools into routine academic and inquiry-based tasks to obtain explanations, generate ideas, improve writing, and complete work efficiently. Although they perceived substantial practical benefits, they also reported unreliable information, comprehension problems, excessive dependence, and ethical uncertainty. Students responded through critical checking, independent revision, selective use, self-regulation, and attention to academic integrity. The findings suggest that AI is most educationally useful when it supports rather than replaces students' thinking. As a qualitative account of student perceptions, the study does not establish causal effects on cognitive performance.

Recommendations

Students should verify AI-generated information, retain responsibility for their own ideas, and use AI primarily for guidance and clarification. Teachers should explicitly teach critical evaluation and ethical AI use while designing inquiry-based tasks that require reflection, evidence, and original reasoning. Program heads and school administrators should develop and communicate consistent policies on acceptable AI assistance, disclosure, privacy, and authorship, alongside professional development for faculty. Educational stakeholders and policymakers may support equitable access and practical AI literacy initiatives. Future studies could examine these experiences across institutions and disciplines and investigate longer-term learning outcomes using complementary research methods.

Conflict of Interests

The author declares no conflict of interest.

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