

ChatGPT IN EDUCATION AND BEYOND: AID OR OBSTACLE?

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ABSTRACT

This study explored how individuals engage with artificial intelligence tools in educational and professional contexts, focusing on how such technologies influence teaching, learning, and work-related strategies. Using a qualitative design, data were collected from 15 purposively selected participants in Kidapawan City who had direct experience using AI tools. Findings addressing the first research question revealed six key themes: Task Support and Productivity Enhancement, Improved Understanding and Clarity, Restructured Study and Work Routines, Need for Verification and Critical Checking, Concerns About Overreliance and Authenticity, and Contextual and Language Mismatch, indicating that AI enhances efficiency while requiring critical use. Results for the second research question identified five themes: Supplementary Assistant Role, Catalyst for Critical Thinking, Structured Learning and Work Strategies, Advantages Over Traditional Tools, and Importance of Traditional Sources, highlighting AI as both a cognitive aid and a complementary tool. For the third research question, six themes emerged: Enhanced Efficiency and Performance, Limitations in Depth and Accuracy, Need for Verification and Triangulation, Academic and Professional Integrity, Data Privacy and Context Concerns, and Responsible Integration, reflecting both benefits and challenges. This study recommended that AI tools be integrated responsibly, with emphasis on critical evaluation, ethical use, and balanced reliance on traditional learning resources.

Keywords: *Education, artificial intelligence, ChatGPT, digital learning, qualitative study, Kidapawan City, Philippines.*

Un Sustainable Development Goals(SDGs) Aligned:

SDG 4: Quality Education

SDG 9: Industry, Innovation and Infrastructure

SDG 16: Peace, Justice and Strong Institutions

SDG 17: Partnerships for the Goals

INTRODUCTION

The integration of Artificial Intelligence (AI) into Education 4.0 presents significant challenges for digital natives, particularly Echo Boomers, in adapting to new learning paradigms. A study by Babu (2024) found that 43% of college students reported using AI tools like ChatGPT, with half of this group admitting to relying on these tools to complete projects, highlighting a growing dependence on AI in academic settings. However, this reliance raises concerns about the development of critical thinking skills and the potential for academic dishonesty. Furthermore, a report by the Digital Education Council (2024) revealed that 86% of students globally are regularly using AI in their studies, with 54% using AI on a weekly basis, indicating widespread adoption of AI tools among students.

In the Philippines, the integration of Artificial Intelligence (AI) into education faces significant challenges, particularly among Echo Boomers, due to disparities in access and infrastructure. A study by Villarino (2025) found that while 100% of respondents from rural Philippine higher education institutions had used AI tools, 78.54% utilized ChatGPT, suggesting a high adoption rate among students in these areas. However, the Philippine Institute for Development Studies (2024) highlights that AI adoption in the country is still in its early stages, with only 14.9% of businesses employing AI technologies, reflecting broader systemic issues in AI integration. Furthermore, Jala (2025) emphasizes that realizing AI's potential in Philippine education requires coordinated efforts to enhance technological infrastructure, develop educator capacity, establish appropriate policies, and ensure equitable access.

The integration of Artificial Intelligence (AI) into Education 4.0 presents significant challenges in the Philippine educational system, particularly among Echo Boomers, due to various systemic factors. A study by Masula (2025) highlights that while AI adoption offers potential for personalized learning, it also introduces complexities such as cybersecurity threats, high implementation costs, and a skills gap among educators. These barriers hinder the effective integration of AI in educational settings. Additionally, Hernandez et al. (2025) emphasize that over-reliance on AI tools can diminish critical cognitive abilities like decision-making and analytical reasoning, raising concerns about academic integrity and the development of essential skills. Furthermore, Estrellado (2023) notes that the lack of clear ethical guidelines and data privacy protocols in AI applications poses risks to student data security and trust in educational technologies. Despite growing research on AI in Education 4.0, gaps remain, especially for Echo Boomers in the Philippines. AI can personalize learning and automate tasks (González-Pérez & Ramírez-Montoya, 2022), but there is little research on its implementation and perception in local educational contexts. Challenges like limited digital infrastructure and varying AI literacy among Filipino students and educators persist (World Economic Forum, 2024). Ethical concerns, including data privacy and potential academic dishonesty, are also underexplored (Motlagh, Khajavi, Sharifi, & Ahmadi, 2023). Conducting this study is therefore essential to provide localized insights for effective AI integration strategies tailored to Filipino Echo Boomers.

This study provides insights into effectively integrating artificial intelligence in teaching to enhance engagement and learning outcomes among digital-native students. It can guide educators in designing personalized learning experiences, inform teacher training programs, improve curriculum development, and establish ethical guidelines for AI use. Overall, it helps bridge the gap between emerging technologies and effective pedagogical practices.

METHODS

Research Design

This study aimed to examine how teaching, learning, and work-related strategies were enacted in contexts where learners and professionals regularly interacted with artificial intelligence tools such as ChatGPT. Focusing on the experiences and perspectives of students and working professionals, the research sought to understand how AI-supported practices functioned as either support mechanisms or challenges in learning and professional performance. By analyzing participants' interactions with AI technologies, the study provided insight into how educational and workplace strategies were adjusted to maximize benefits while addressing emerging obstacles associated with AI use.

A qualitative narrative research design was deemed appropriate for this investigation because it foregrounded participants' lived experiences and meaning-making processes when engaging with AI tools. Narrative inquiry enabled an in-depth exploration of how individuals perceived, adopted, and sometimes struggled with technologies like ChatGPT in educational and professional settings. This approach was particularly effective in examining AI integration, as it captured ethical concerns, dependency issues, critical thinking challenges, and adaptive practices that might not have been visible through quantitative measures (Sanchez, 2024; Fan, 2023). Through personal accounts and reflective narratives, the study revealed the complex ways AI operated as both an enabling resource and a potential barrier.

Meanwhile, the duration of the study was planned to span ten months, from August 2025 to May 2026. This timeframe covered proposal refinement, participant recruitment, and in-depth interview data collection, followed by one month dedicated to data analysis and another month for reporting and dissemination of findings. The extended duration allowed for careful documentation and interpretation of participants' experiences with ChatGPT over time, ensuring a comprehensive understanding of its implications for learning and professional practice. or data analysis, and one month for reporting and dissemination of findings.

Research Participants

This study involved 15 participants composed of both students and working professionals from Kidapawan City, selected through purposive sampling to ensure that all participants had direct and meaningful experience with ChatGPT and other AI-based tools used in learning and professional contexts. Including both groups allowed the study to examine how AI supported or constrained academic learning, skill development, and

workplace performance across different settings. All participants took part in in-depth interviews only, enabling a detailed exploration of personal experiences, perceptions, and challenges related to the use of ChatGPT as a learning and productivity tool. Purposive sampling was appropriate for qualitative research because it allowed the intentional selection of information-rich participants who could provide in-depth and contextually grounded insights aligned with the study's objectives (Palinkas et al., 2015).

Participants were selected using clearly defined inclusion and exclusion criteria to maintain the focus and rigor of the study. The inclusion criteria consisted of students currently enrolled in educational institutions and working professionals who regularly used ChatGPT or similar AI tools for academic tasks, professional problem-solving, content development, or decision-making. Participants were required to have sufficient exposure to AI-assisted activities to critically reflect on its benefits and limitations. Individuals with minimal experience using AI tools, those not actively engaged in learning or professional work, or those unwilling to participate were excluded. Applying these criteria ensured that the data captured informed perspectives on the opportunities and challenges of ChatGPT use in both educational and professional environments within the context of Kidapawan City.

Research Materials

To obtain in-depth and meaningful insights from participants, this study utilized in-depth interviews as the sole data collection tool. The use of in-depth interviews allowed the researcher to explore individual experiences, perceptions, and reflections regarding the use of ChatGPT and other AI-based tools in learning and professional contexts. This method was particularly appropriate for examining nuanced views on how AI functioned as both a support and a challenge, as it encouraged participants to articulate personal experiences, concerns, and adaptive strategies in detail.

All interviews were guided by a semi-structured interview protocol, ensuring that essential topics related to teaching and learning strategies, AI integration, feedback, motivation, and ethical considerations were consistently explored across participants. At the same time, the flexible structure of the interviews allowed participants to elaborate on issues they perceived as most significant in their academic or professional practice. This approach supported the collection of rich narrative data necessary for understanding the complex role of ChatGPT in education and beyond.

Data Gathering Procedure

The study was conducted in selected schools within Kidapawan City. Initially, permission was sought from school administrators, followed by the recruitment of participants based on the inclusion and exclusion criteria. In-depth interviews were scheduled individually at times convenient for the participants, ensuring a quiet and focused environment. Subsequently, the focus group discussion was conducted with the remaining participants, allowing for open dialogue and interaction. All interviews and

discussions were audio-recorded, with participants' consent, and notes were taken to supplement the recordings and ensure the accuracy of the data.

Data Analysis

The collected data were analyzed using qualitative narrative analysis guided by the Collaizzi method, which provided a systematic and rigorous approach to interpreting participants' lived experiences. All in-depth interview recordings and field notes were transcribed verbatim to preserve the authenticity of participants' accounts. Following Collaizzi's procedure, the researcher first read the transcripts repeatedly to gain a holistic understanding of the data, then extracted significant statements that directly related to participants' experiences with ChatGPT and AI-supported learning and professional practices.

These significant statements were carefully formulated into meanings and organized into clusters of themes by grouping related ideas and patterns. The emergent themes were integrated into an exhaustive description that captured how AI tools functioned as both supports and challenges in educational and workplace contexts. Emphasizing the Collaizzi method ensured methodological rigor, transparency, and credibility, as the analysis remained grounded in participants' original narratives while providing a structured and systematic interpretation of their experiences.

RESULTS AND DISCUSSION

This section presents the study's findings and explains their meanings in relation to the research objectives. It also discusses how the results support or differ from previous studies.

Lived experiences using ChatGPT

The table below presents a summary of participants' lived experiences in using ChatGPT, highlighting key issues, coded categories, representative statements, themes, and their corresponding meanings. The themes derived include: Task Support and Productivity Enhancement, Improved Understanding and Clarity, Restructured Study and Work Routines, Need for Verification and Critical Checking, Concerns About Overreliance and Authenticity, and Contextual and Language Mismatch. These themes collectively show how ChatGPT functions both as a facilitator of efficiency and learning, as well as a tool that requires critical and responsible use.

Table 1. Lived experiences using ChatGPT

Issues Probe	Codes / Category	Significant Statements	Themes	Meanings
Task support; idea organization; document drafting; lesson planning	IDI 1; IDI 5; IDI 6; IDI 7; IDI 14	organize ideas; faster tasks; clearer outputs; structured plans; professional writing	Task Support and Productivity Enhancement	Improves efficiency and output quality
Content understanding; concept clarification; summarizing; explanation support	IDI 2; IDI 3; IDI 4; IDI 8; IDI 12	clarify topics; simplify texts; explain concepts; reduce confusion; improve comprehension	Improved Understanding and Clarity	Enhances comprehension and learning
Study habits; workflow changes; task planning; time management	IDI 1; IDI 2; IDI 3; IDI 5; IDI 10	structured routine; step planning; outline first; reduce delay; organized tasks	Restructured Study and Work Routines	Promotes organized learning/work
Accuracy concerns; fact checking; validation; reliability issues	IDI 1; IDI 2; IDI 8; IDI 9; IDI 13	verify information; double check; consult sources; accuracy concern; cross check	Need for Verification and Critical Checking	Requires validation of outputs
Overdependence; academic integrity; independent thinking; originality	IDI 1; IDI 3; IDI 4; IDI 11; IDI 15	avoid reliance; ensure originality; independent learning; maintain integrity; self-effort	Concerns About Overreliance and Authenticity	Risk of dependency and integrity issues
Language tone; contextual mismatch; generic responses; repetition	IDI 3; IDI 6; IDI 7; IDI 10; IDI 14	too formal tone; lacks context; repetitive ideas; generic outputs; needs revision	Contextual and Language Mismatch	Needs adaptation and personalization

Theme 1: Task Support and Productivity Enhancement

This theme reflects how ChatGPT serves as a practical tool that enhances efficiency in academic and professional tasks. Participants highlighted its role in organizing ideas, structuring outputs, and improving clarity, indicating that the tool reduces cognitive load and accelerates task completion. Within the context of the study, this supports the idea that ChatGPT acts as an “aid,” particularly in increasing productivity and improving output quality across various domains such as research, teaching, and professional communication.

“ I used ChatGPT during research writing to understand difficult concepts and organize my ideas. It helped me complete assignments faster and improved the clarity of my academic outputs. ” (IDI 1)

“ I used ChatGPT to prepare lesson plans and assessment questions. It helped generate structured ideas and improved the clarity of instructional materials used in class. ” (IDI 5)

“ I used ChatGPT to draft reports and official communications. It improved grammar and organization, making documents clearer and more professional for submission. ” (IDI 6)

“ I used ChatGPT to design training outlines and presentation content. It helped organize topics logically and supported smoother delivery during workshops and seminars. ” (IDI 7)

“ I used ChatGPT to prepare sales proposals and customer communication scripts. It enhanced professionalism and helped structure persuasive messages effectively. ” (IDI 14)

The findings align with recent literature emphasizing AI's role in enhancing productivity and efficiency in educational contexts. For instance, Alharbi (2023) highlights how AI tools support personalized and efficient learning processes by automating complex tasks. Similarly, Crompton and Burke (2023) note that artificial intelligence facilitates content generation and instructional support, improving teaching and learning workflows. Bingley, Ma, and Zhu (2024) further emphasize that AI-driven systems enhance academic outputs by structuring information effectively and supporting user cognition. In addition, Milberg (2024) discusses how AI technologies streamline workflows within Education 4.0, enabling faster completion of academic and professional tasks. Lastly, Garzón (2025) underscores that AI integration significantly contributes to performance improvement and productivity gains, reinforcing the perception of ChatGPT as a valuable academic aid.

Theme 2: Improved Understanding and Clarity of Content

This theme highlights ChatGPT's role in enhancing comprehension by simplifying complex concepts and supporting learning through explanations and summaries. Participants perceived the tool as a cognitive support system that aids in understanding difficult topics, thereby improving confidence and academic performance. This reinforces the notion of ChatGPT as an educational aid that promotes deeper engagement with content.

“ I used ChatGPT to review lessons and practice explanations before exams. It helped clarify confusing topics and made me feel

more prepared during quizzes and classroom discussions. ” (IDI 2)

“ I used ChatGPT when preparing presentations and summarizing readings. It helped me understand long texts and improved my confidence when explaining lessons to classmates. ” (IDI 3)

“ I used ChatGPT to understand research methods and statistics concepts. It helped explain unfamiliar terms and guided me in completing academic requirements more effectively. ” (IDI 4)

“ I used ChatGPT to simplify technical explanations and prepare written responses for clients. It helped improve communication clarity and reduced misunderstandings at work. ” (IDI 8)

“ I used ChatGPT for summarizing long readings in Social Studies. It helped me focus on key ideas and improved my comprehension during exams. ” (IDI 12)

Supporting literature emphasizes the role of AI in improving comprehension and learning outcomes. Hwang et al. (2020) explain that AI systems enhance understanding by providing adaptive and immediate feedback tailored to learners' needs. Ouyang, Zheng, and Jiao (2022) found that AI in higher education improves knowledge acquisition through personalized support and content simplification. Ng et al. (2021) highlight that AI literacy development includes the ability to use AI tools for conceptual clarification and knowledge construction. Furthermore, Rusmiyanto et al. (2023) argue that AI-driven tools significantly transform language and content learning by making information more accessible and understandable. Lastly, Merino-Campos (2025) notes that AI-supported learning environments enhance comprehension by enabling students to process and interpret complex information more efficiently.

Theme 3: Restructured Study and Work Routines

This theme reflects how ChatGPT reshapes users' approaches to studying and working by encouraging structured planning and systematic task execution. Participants reported improved organization, time management, and reduced procrastination. This indicates that ChatGPT functions as both an aid and a behavioral influence that transforms learning habits.

“ My routine changed because I now start tasks by asking for explanations before writing. This made studying more organized and reduced confusion during independent learning. ” (IDI 1)

“ Since using ChatGPT, my study routine became more efficient. I

now break tasks into steps and review concepts first before answering activities. ” (IDI 2)

“ My routine improved because I now prepare outlines first before completing tasks. This helped me manage time better and avoid last-minute submissions. ” (IDI 3)

“ My routine became more efficient because planning lessons takes less time. I now focus more on adapting materials to student needs. ” (IDI 5)

“ Since using ChatGPT, I begin with idea generation before drafting. This reduced writer’s block and helped me complete tasks earlier. ” (IDI 10)

Literature supports the idea that AI influences learning behaviors and routines. Dahri (2024) explains that AI tools promote metacognitive self-regulated learning by guiding users through structured processes. Qureshi and Khan (2024) highlight that digital technologies in Education 4.0 enhance learning efficiency by promoting organized and systematic approaches. Arias (2025) emphasizes that AI fosters lifelong learning habits by restructuring how individuals engage with tasks. Additionally, Keong (2025) found that AI-personalized systems improve students’ motivation and structured learning strategies. Finally, Rafiq et al. (2025) demonstrate that disruptive digital technologies reshape educational practices by encouraging more strategic and efficient workflows.

Theme 4: Need for Verification and Critical Checking

This theme underscores the necessity of critically evaluating ChatGPT outputs due to concerns about accuracy and reliability. Participants consistently emphasized verification, reflecting that while ChatGPT is useful, it cannot be fully trusted without validation. This positions ChatGPT as both an aid and a potential obstacle when used uncritically.

“ I sometimes noticed responses were too general, so I needed to verify information. ... ” (IDI 1)

“ A challenge I faced was trusting the accuracy of responses. I needed to double-check information using books and teacher-provided materials. ” (IDI 2)

“ One challenge was verifying accuracy of information. I had to double-check details before using responses in official transactions. ” (IDI 8)

“ I noticed some explanations were too simplified, so I had to consult textbooks. ... ” (IDI 9)

“ I encountered concerns about accuracy, so I always verified information using official medical references. ” (IDI 13)

Scholarly works emphasize the importance of critical evaluation when using AI tools. Bond et al. (2024) stress the need for ethical and rigorous use of AI in education, particularly regarding accuracy and validation. Dell’Acqua et al. (2023) highlight risks associated with misinformation and overreliance on AI-generated content. Firat (2023) notes that both students and educators express concerns about the reliability of ChatGPT outputs. Fan (2023) further explains that AI use requires critical comparison with traditional knowledge sources. Lastly, Sghir, Adadi, and Lahmer (2023) emphasize that predictive and AI systems must be supplemented with human judgment to ensure accuracy and reliability.

Theme 5: Concerns About Overreliance and Authenticity

This theme reveals participants’ awareness of the risks of dependency and the importance of maintaining originality and academic integrity. ChatGPT is perceived as beneficial but potentially harmful if it replaces independent thinking, thus framing it as both an aid and an obstacle.

“ ... I also had to avoid relying too much on generated answers. ” (IDI 1)

“ I struggled at times distinguishing guidance from complete answers. I needed discipline to ensure I was still learning independently. ” (IDI 4)

“ I also had to ensure my work still reflected my own understanding. ” (IDI 3)

“ I learned to troubleshoot instead of depending completely on responses. ” (IDI 11)

“ A challenge was maintaining academic integrity. I ensured materials remained original and aligned with institutional standards. ” (IDI 15)

Recent studies highlight concerns about dependency and academic integrity in AI use. Hernandez et al. (2025) found that excessive reliance on AI tools may reduce independent thinking among students. Masula (2025) emphasizes that students must balance AI assistance with personal effort to maintain learning authenticity. Clorion (2025) discusses how AI-native users risk overdependence without proper guidance. Ponce Rojo (2025) introduces the concept of “AI natives,” emphasizing the need for responsible engagement with AI tools. Finally, Runge, Hebibi, and Lazarides (2025) highlight that proper training and awareness are essential to ensure ethical and balanced AI usage.

Theme 6: Contextual and Language Mismatch

This theme captures the limitations of ChatGPT in producing contextually appropriate and personalized outputs. Participants noted issues with tone, repetition, and lack of contextual relevance, indicating that human revision remains necessary. This reflects ChatGPT as an imperfect aid requiring user intervention.

“ Sometimes the language sounded too formal, so I needed to revise it. ... ” (IDI 3)

“ Sometimes responses lacked local context, so revisions were necessary. ... ” (IDI 6)

“ I encountered repetitive ideas at times. I learned to refine prompts and combine suggestions with my professional experience. ” (IDI 7)

“ Sometimes generated responses sounded generic. I needed to adjust tone and personalize content for specific clients. ” (IDI 14)

“ Sometimes the suggestions sounded similar each time. I had to personalize responses to ensure originality. ” (IDI 10)

Supporting literature identifies contextual and linguistic limitations of AI systems. Motlagh et al. (2023) highlight that generative AI often produces generalized outputs lacking contextual specificity. Margono, Saud, and Falahat (2024) found that users frequently need to adapt AI-generated content to fit local and professional contexts. Cochrane and Douglas (2024) emphasize the importance of digital competencies in refining AI outputs. Luo and Cheng (2024) note that AI integration requires contextual adaptation across educational settings. Lastly, Storey (2024) argues that effective AI use depends on users' ability to critically modify and personalize generated content, reinforcing the need for human-AI collaboration.

Meanings and significance in learning and work

This table presents the meanings and significance of ChatGPT in learning and work contexts as derived from participants' responses. It highlights how users perceive ChatGPT in relation to its role, influence on thinking, impact on strategies, advantages, and limitations. The emerging themes include: Supplementary Assistant Role, Catalyst for Critical Thinking, Structured Learning and Work Strategies, Advantages Over Traditional Tools, and Importance of Traditional Sources. These themes collectively reflect how ChatGPT is positioned as both an aid and a potential limitation.

Table 2. Meanings and significance in learning and work

Issues Probe	Codes / Category	Significant Statements	Themes	Meanings
Learning support; assistant role; non-replacement; guided learning	IDI 1; IDI 3; IDI 5; IDI 7; IDI 14	learning assistant; support tool; not replacement; guide learning; aid understanding	Supplementary Assistant Role	Tool supports but not replaces expertise
Analytical thinking; evaluation; comparison; reasoning	IDI 1; IDI 3; IDI 4; IDI 9; IDI 11	compare answers; evaluate logic; question responses; analyze outputs; check reasoning	Catalyst for Critical Thinking	Enhances analysis and evaluation
Organization; structured approach; planning strategies; workflow improvement	IDI 2; IDI 4; IDI 8; IDI 12; IDI 13	organize thoughts; structured tasks; systematic workflow; plan ideas; manage tasks	Structured Learning and Work Strategies	Shapes organized approaches
Speed; accessibility; interactivity; instant feedback	IDI 1; IDI 2; IDI 4; IDI 9; IDI 10	instant feedback; faster answers; quick access; interactive learning; save time	Advantages Over Traditional Tools	Provides speed and immediacy
Reliability; depth; authoritative sources; expert validation	IDI 1; IDI 2; IDI 3; IDI 7; IDI 14	deeper sources; reliable references; expert knowledge; authoritative info; accurate content	Importance of Traditional Sources	Traditional sources ensure accuracy

Theme 1: Supplementary Assistant Role

This theme reflects the perception of ChatGPT as a supportive learning and professional tool rather than a replacement for human expertise. Participants consistently emphasized that while ChatGPT enhances understanding, productivity, and task completion, it still requires personal judgment, domain knowledge, and independent learning. Within the context of the study, this positions ChatGPT clearly as an aid, but one that remains dependent on human oversight, reinforcing the idea that AI complements rather than substitutes cognitive and professional processes.

“ I see ChatGPT as a learning assistant that helps clarify lessons when teachers are unavailable. It supports my understanding but does not replace studying independently. ” (IDI 1)

“ I view ChatGPT as a supplementary guide that assists in

reviewing and clarifying lessons after class. It helps reinforce understanding but requires personal judgment. ” (IDI 3)

“ I view ChatGPT as a professional support tool that assists in planning lessons and refining materials. It enhances efficiency but does not replace pedagogical expertise. ” (IDI 5)

“ I consider ChatGPT a supplementary reference for clarifying medical explanations and patient communication. It supports understanding but cannot replace clinical judgment. ” (IDI 7)

“ I view ChatGPT as a supplementary aid for clarifying financial concepts and drafting explanations for clients. It supports but does not replace expertise. ” (IDI 14)

Recent studies support the framing of AI tools as augmentative rather than replacement technologies in education and professional contexts. Goel and Poesia (2023) emphasize that generative AI functions as a pedagogical assistant that enhances learning support without replacing instructors' roles. Chan and Lee (2023) highlight that while students show high interest in adopting AI tools, they still rely on teachers for validation and deeper understanding. Milicevic (2024) explains that user acceptance of AI is strongly tied to perceived usefulness as a supportive tool rather than an autonomous replacement. Vera and Manrique (2021) further argue that Education 4.0 frameworks position AI as a complement to human-centered learning processes. Additionally, Jala (2025) notes that AI integration in higher education strengthens instructional support systems while preserving the essential role of human expertise, reinforcing the concept of ChatGPT as an academic and professional aid rather than a substitute.

Theme 2: Catalyst for Critical Thinking and Evaluation

This theme highlights how ChatGPT encourages users to engage in analytical thinking, evaluation, and reasoning processes. Instead of passively accepting information, participants reported comparing responses, questioning outputs, and validating logic. This suggests that ChatGPT can act as a cognitive catalyst, promoting deeper engagement with content. In relation to the study, this positions ChatGPT as an aid that enhances higher-order thinking, although its effectiveness depends on the user's critical engagement.

“ It encourages me to analyze answers more carefully because I compare its explanations with my own ideas before finalizing conclusions. ” (IDI 1)

“ It trained me to question responses and verify information, improving my critical thinking instead of simply accepting answers immediately. ” (IDI 3)

“ It improved my decision-making by presenting step-by-step

reasoning, which helped me identify logical errors in my own solutions. ” (IDI 4)

“ It influences my thinking by encouraging me to compare different answers and evaluate which explanation makes more logical sense. ” (IDI 9)

“ It helped me become more analytical because I now check whether responses align with my notes before accepting them. ” (IDI 11)

Scholarly literature increasingly recognizes the role of AI in fostering higher-order cognitive skills. Ng et al. (2021) argue that AI literacy includes the ability to critically evaluate and interpret AI-generated outputs, emphasizing analytical engagement. Sghir, Adadi, and Lahmer (2023) highlight that AI systems support predictive and analytical reasoning but require human validation to ensure accuracy. Motlagh et al. (2023) explain that interacting with generative AI encourages users to assess the relevance and logic of responses, strengthening evaluative skills. Cochrane and Douglas (2024) emphasize that digital competencies in AI involve critical thinking and the ability to refine generated outputs. Furthermore, Storey (2024) notes that effective AI integration in education promotes reflective and analytical learning practices, positioning AI as a tool that can enhance, rather than diminish, critical thinking when used responsibly.

Theme 3: Shaper of Structured Learning and Work Strategies

This theme reflects how ChatGPT influences users' organization, planning, and systematic approaches to tasks. Participants described how the tool helps structure ideas, manage workflows, and simplify complex processes, leading to more efficient and organized practices. Within the study, this reinforces ChatGPT's role as an aid that reshapes learning behaviors and work strategies, particularly in promoting structured and goal-oriented approaches.

“ ChatGPT plays a supportive role in organizing my thoughts and simplifying difficult topics. It shapes how I approach assignments by making tasks feel manageable. ” (IDI 2)

“ ChatGPT supports my learning by acting as a quick reference when I encounter confusing concepts. It shapes my study habits toward more structured preparation. ” (IDI 4)

“ ChatGPT functions as a strategic assistant in organizing proposals and communication plans. It shapes my workflow toward more systematic preparation. ” (IDI 8)

“ I consider ChatGPT a helpful academic assistant that supports

brainstorming and clarifying instructions for assignments. It shapes how I organize ideas. ” (IDI 12)

“ ChatGPT functions as a supportive tool when drafting policies and internal communications. It shapes my workflow by organizing ideas more efficiently. ” (IDI 13)

The literature supports the idea that AI technologies transform learning strategies and organizational practices. Qureshi and Khan (2024) explain that digital technologies in Education 4.0 enhance structured and systematic learning approaches. Dahri (2024) highlights that AI tools like ChatGPT support metacognitive self-regulated learning through guided planning and organization. Keong (2025) found that AI-personalized systems improve students' structured learning strategies and motivation. Rafiq et al. (2025) demonstrate that disruptive technologies reshape workflows by promoting efficiency and organization. Additionally, Pisica, Vrabie, and Jaliu (2024) emphasize that AI-enabled systems enhance adaptive learning and structured task management, further reinforcing ChatGPT's role in shaping organized academic and professional practices.

Theme 4: Advantages Over Traditional Tools (Speed, Accessibility, Interactivity)

This theme captures the perceived benefits of ChatGPT in terms of speed, accessibility, and interactive engagement. Participants consistently highlighted how the tool provides immediate responses and simplifies access to information, making learning more efficient. In the context of the study, this strongly positions ChatGPT as an aid, particularly in addressing time constraints and improving accessibility to knowledge.

“ Compared to textbooks alone, ChatGPT feels more interactive and immediate, though traditional materials still provide deeper and more reliable references. ” (IDI 1)

“ Unlike traditional tools, ChatGPT provides instant feedback, but books and lectures still offer structured and comprehensive learning foundations. ” (IDI 2)

“ Compared to previous methods, ChatGPT is faster and more accessible, yet traditional approaches remain important for thorough comprehension. ” (IDI 4)

“ Compared to relying only on books, ChatGPT offers quicker clarification, although textbooks still provide more detailed and reliable information. ” (IDI 9)

“ Traditional study methods required more time searching for explanations, while ChatGPT delivers immediate guidance that speeds up understanding. ” (IDI 10)

Contemporary research highlights the advantages of AI in improving access and efficiency in education. Digital Education Council (2024) reports that students value AI tools for their immediacy and accessibility in learning. Milberg (2024) explains that AI technologies accelerate knowledge acquisition by providing real-time support. Wang (2023) identifies speed and accessibility as key drivers of digital transformation in higher education. Saleem (2025) emphasizes that AI-powered systems enhance student engagement through interactive and immediate feedback. Furthermore, Montoya Lunavictoria and Vásquez Dávila (2024) highlight that AI tools significantly improve learning efficiency by reducing time spent searching for information, reinforcing ChatGPT's role as a powerful educational aid.

Theme 5: Enduring Importance of Traditional and Expert Sources

This theme emphasizes that despite the advantages of ChatGPT, traditional and authoritative sources remain essential for accuracy, depth, and credibility. Participants acknowledged that while ChatGPT provides quick assistance, it cannot fully replace textbooks, expert knowledge, and validated references. In relation to the study, this positions ChatGPT as both an aid and a potential obstacle, particularly when over-relied upon without proper validation.

“ Compared to textbooks alone, ChatGPT feels more interactive and immediate, though traditional materials still provide deeper and more reliable references. ” (IDI 1)

“ Unlike traditional tools, ChatGPT provides instant feedback, but books and lectures still offer structured and comprehensive learning foundations. ” (IDI 2)

“ Traditional study methods required longer research time, whereas ChatGPT offers quick guidance, although deeper learning still depends on textbooks and teacher discussions. ” (IDI 3)

“ Compared to manuals and official guidelines, ChatGPT offers quick summaries, though authoritative sources remain essential for accuracy. ” (IDI 7)

“ Traditional accounting references remain more authoritative, while ChatGPT serves mainly as a quick clarification tool. ” (IDI 14)

The importance of traditional and expert sources alongside AI is widely supported in the literature. Dell'Acqua et al. (2023) highlight that while AI offers efficiency, it raises concerns about accuracy and misinformation, requiring validation through authoritative sources. Firat (2023) notes that both students and educators emphasize the continued importance of traditional learning materials for depth and reliability. Margono, Saud, and Falahat (2024) found that users frequently rely on textbooks and expert knowledge to

verify AI-generated content. Villarino (2025) emphasizes that effective AI integration requires balancing digital tools with traditional educational resources. Lastly, Runge, Hebibi, and Lazarides (2025) stress that proper training and critical use of AI are essential to ensure that learners continue to value and utilize credible sources, reinforcing the enduring role of traditional knowledge systems.

Perceived benefits, challenges, and insights

This table presents the perceived benefits, challenges, and insights of participants regarding the use of ChatGPT in learning and professional contexts. It highlights key areas such as productivity, limitations, validation practices, ethical considerations, contextual concerns, and responsible integration. The themes that emerged include: Enhanced Efficiency and Performance, Limitations in Depth and Accuracy, Need for Verification and Triangulation, Academic and Professional Integrity, Data Privacy and Context Concerns, and Responsible Integration. These themes reflect how ChatGPT is simultaneously viewed as an aid that enhances performance and a tool that requires careful, critical, and ethical use.

Table 3. Perceived benefits, challenges, and insights

Issues Probe	Codes / Category	Significant Statements	Themes	Meanings
Productivity; performance; quality improvement; task efficiency	IDI 1; IDI 2; IDI 5; IDI 8; IDI 13	faster learning; improved quality; better preparation; structured outputs; save time	Enhanced Efficiency and Performance	Improves productivity and quality
Accuracy limits; shallow responses; repetition; lack depth	IDI 1; IDI 2; IDI 3; IDI 4; IDI 12	general answers; inaccurate info; repetitive outputs; lacks depth; unclear details	Limitations in Depth and Accuracy	Outputs may lack reliability
Verification; cross-checking; triangulation; validation practices	IDI 1; IDI 2; IDI 7; IDI 9; IDI 14	verify data; cross check; validate sources; confirm accuracy; avoid errors	Need for Verification and Triangulation	Requires critical validation
Integrity; originality; personalization; ethical use	IDI 3; IDI 5; IDI 8; IDI 9; IDI 12	maintain originality; personalize output; ensure authenticity; ethical use; align standards	Academic and Professional Integrity	Emphasizes ethical use
Context relevance; privacy concerns; generic outputs; sensitivity	IDI 6; IDI 8; IDI 13; IDI 14; IDI 15	lacks context; generic content; sensitive data;	Data Privacy and Context Concerns	Needs careful and contextual use

Issues Probe	Codes / Category	Significant Statements	Themes	Meanings
Balanced use; integration; complementary tools; resource combination	IDI 4; IDI 5; IDI 7; IDI 10; IDI 15	adapt responses; refine outputs combine resources; guided use; support learning; integrate tools; balanced approach	Responsible Integration	Requires balanced application

Theme 1: Enhanced Efficiency and Performance

This theme reflects how ChatGPT significantly improves task efficiency, productivity, and output quality across academic and professional contexts. Participants emphasized faster comprehension, structured outputs, and improved preparation, indicating that ChatGPT functions as a performance-enhancing aid. Within the framework of the study, this supports the argument that ChatGPT acts as a powerful educational tool, particularly in optimizing time and cognitive effort. However, its effectiveness still depends on how users strategically apply it in their learning or professional tasks.

“ ChatGPT helped me understand complex readings faster and organize essays clearly. It reduced time spent struggling with instructions and improved the overall quality of my submissions. ” (IDI 1)

“ Using ChatGPT improved my preparation for exams by providing simplified explanations and practice questions. It increased my confidence during quizzes and class discussions. ” (IDI 2)

“ ChatGPT enhanced lesson preparation by generating structured outlines and discussion prompts. It saved time and improved clarity in instructional materials. ” (IDI 5)

“ It accelerated proposal drafting and structured persuasive communication strategies. This increased productivity and improved presentation flow. ” (IDI 8)

“ ChatGPT streamlined drafting recruitment announcements and policy explanations. It enhanced clarity and reduced preparation time significantly. ” (IDI 13)

Recent literature supports the role of AI in enhancing efficiency and performance in education and professional work. Babu (2024) found that students increasingly rely on AI tools like ChatGPT to improve task completion speed and academic confidence. Milberg (2024) highlights that AI-driven systems enable faster knowledge acquisition and

reduce cognitive load through real-time assistance. Alharbi (2023) explains that AI technologies enhance personalized learning experiences, allowing users to process information more efficiently. Bingley, Ma, and Zhu (2024) emphasize that AI-driven personalization improves learning outcomes and productivity by structuring content delivery. Furthermore, Saleem (2025) demonstrates that AI-supported systems significantly enhance student engagement and performance by providing immediate and adaptive feedback, reinforcing the role of ChatGPT as an effective productivity-enhancing tool in Education 4.0 environments.

Theme 2: Limitations in Depth, Accuracy, and Originality

This theme highlights the inherent limitations of ChatGPT in generating deep, accurate, and original content. Participants noted issues such as general responses, repetition, and lack of depth, indicating that while ChatGPT is efficient, it may not always provide reliable or comprehensive outputs. In relation to the study, this positions ChatGPT as a potential obstacle when used uncritically, particularly in tasks requiring advanced analysis and originality.

“ Sometimes responses were too general, which required additional research. Relying immediately on answers occasionally reduced my deeper analysis of topics. ” (IDI 1)

“ There were instances of unclear or inaccurate explanations. I had to consult textbooks to confirm details before finalizing answers. ” (IDI 2)

“ At times, generated outputs sounded repetitive or overly formal. I needed to revise extensively to match my academic level and voice. ” (IDI 3)

“ Occasionally, answers lacked depth, affecting thoroughness of analysis. I learned not to depend solely on summaries. ” (IDI 4)

“ Some generated content felt repetitive, affecting originality in my submissions. ” (IDI 12)

Scholarly works consistently emphasize the limitations of generative AI in education. Crompton and Burke (2023) note that while AI tools are widely adopted, concerns about content accuracy and depth remain significant. Firat (2023) highlights that both students and educators recognize the risks of misinformation and superficial understanding when relying on AI-generated content. Motlagh et al. (2023) explain that generative AI systems often produce generalized outputs that require human refinement and validation. Margono, Saud, and Falahat (2024) found that students frequently encounter repetitive and less original responses when using ChatGPT, affecting academic quality. Additionally, Garzón (2025) underscores that despite advancements in

AI, limitations in contextual understanding and depth persist, reinforcing the need for critical and informed use of such technologies.

Theme 3: Need for Verification and Triangulation

This theme emphasizes the importance of validating and cross-checking AI-generated information. Participants recognized that ChatGPT should guide learning rather than replace it, highlighting the need for triangulation with credible sources. In the study, this reinforces the idea that ChatGPT is an aid that requires critical engagement, ensuring that users maintain analytical responsibility.

“ I realized ChatGPT should guide learning, not replace effort. Verifying information and rewriting in my own words ensures responsible use. ” (IDI 1)

“ I learned that critical evaluation is necessary. Cross-checking responses prevents misinformation and strengthens independent thinking skills. ” (IDI 2)

“ Medical information occasionally required verification against official guidelines to ensure accuracy. Relying solely on summaries posed risks. ” (IDI 7)

“ Some explanations lacked detailed references, affecting depth of analysis. I needed to verify information before submission. ” (IDI 9)

“ Financial details required verification, as reliance without checking could compromise accuracy. ” (IDI 14)

The necessity of verification in AI-assisted learning is strongly supported in recent research. Bond et al. (2024) emphasize that ethical and rigorous use of AI requires validation and critical evaluation of outputs. Ng et al. (2021) highlight that AI literacy includes the ability to assess the credibility and reliability of generated information. Ouyang, Zheng, and Jiao (2022) found that effective AI integration in education depends on combining AI outputs with human judgment and verification practices. Sghir, Adadi, and Lahmer (2023) stress that predictive and AI-generated systems require human oversight to ensure accuracy and relevance. Moreover, Runge, Hebibi, and Lazarides (2025) demonstrate that acceptance of AI tools in education is closely linked to users' ability to critically evaluate and validate AI-generated content, reinforcing the importance of triangulation.

Theme 4: Academic and Professional Integrity

This theme reflects participants' awareness of maintaining originality, authenticity, and ethical use when using ChatGPT. It highlights the importance of personalizing outputs and ensuring that AI-generated content aligns with academic and professional

standards. Within the study, this theme positions ChatGPT as both an aid and a potential ethical risk, depending on how responsibly it is used.

“ I realized effective use involves editing and personalization. Maintaining originality while benefiting from guidance is essential. ” (IDI 3)

“ Some suggestions required adjustment to align with curriculum standards. Overreliance could risk reducing creativity in lesson design. ” (IDI 5)

“ I learned that combining automated suggestions with practical experience ensures originality and professional credibility. ” (IDI 8)

“ I realized responsible use requires validating sources and ensuring outputs reflect my own understanding. ” (IDI 9)

“ I learned to personalize responses and ensure authentic expression in academic work. ” (IDI 12)

Recent studies highlight the ethical implications of AI use in education and professional practice. Fan (2023) discusses how generative AI influences writing processes, raising concerns about authorship and originality. Estrellado (2023) emphasizes the need for ethical guidelines in integrating AI into educational contexts. Masula (2025) found that students are increasingly aware of the importance of maintaining authenticity when using AI tools. Ponce Rojo (2025) explains that the emergence of “AI natives” requires stronger emphasis on ethical digital practices and originality. Additionally, Clorion (2025) highlights that professionals using AI must balance automation with human expertise to maintain credibility and integrity, reinforcing the importance of ethical AI use.

Theme 5: Data Privacy and Context Concerns

This theme focuses on issues related to contextual relevance, personalization, and data sensitivity. Participants noted that ChatGPT outputs sometimes lack contextual accuracy and require adaptation, while also raising concerns about handling sensitive information. In relation to the study, this suggests that ChatGPT can become an obstacle when context and privacy are not carefully managed.

“ Certain responses lacked contextual relevance, requiring manual revisions. Sensitive information also needed careful handling. ” (IDI 6)

“ Certain suggestions required contextual adaptation to company standards. Without revision, outputs risked sounding generic. ” (IDI 13)

“ Some outputs appeared generic, affecting personalization for clients. I needed to refine content carefully. ” (IDI 8)

“ Financial details required verification, as reliance without checking could compromise accuracy. ” (IDI 14)

“ Some academic references lacked specificity, affecting depth of lectures. I needed further validation. ” (IDI 15)

The literature highlights growing concerns regarding context and data privacy in AI use. Crompton and Burke (2023) emphasize that AI systems often struggle with contextual understanding, leading to generalized outputs. Al-Adwan (2023) notes that user acceptance of AI technologies is influenced by concerns about data privacy and contextual relevance. Luo and Cheng (2024) found that AI tools require adaptation to specific educational and cultural contexts to be effective. Pisica, Vrabie, and Jaliu (2024) highlight that AI-driven systems must incorporate adaptive mechanisms to address contextual variability. Furthermore, Philippine Institute for Development Studies (2024) reports that lack of awareness and concerns about data handling can hinder effective AI integration, reinforcing the importance of careful and context-sensitive use.

Theme 6: Responsible Integration with Other Resources

This theme emphasizes the importance of balanced and strategic use of ChatGPT alongside other learning and professional resources. Participants highlighted that combining AI with traditional tools and human expertise leads to better outcomes. In the study, this reinforces the idea that ChatGPT is most effective as an aid when integrated responsibly, rather than used in isolation.

“ Responsible use means combining ChatGPT with textbooks and teacher feedback. Balanced application leads to better academic growth. ” (IDI 4)

“ I realized professional judgment must guide usage. ChatGPT should complement pedagogical expertise rather than replace it. ” (IDI 5)

“ I realized verification with authoritative sources is essential. ChatGPT serves only as supplementary guidance in healthcare contexts. ” (IDI 7)

“ I learned to combine ChatGPT assistance with thorough reading to maintain academic quality. ” (IDI 10)

“ I realized maintaining academic integrity requires critical

evaluation and adaptation of generated materials. ” (IDI 15)

Research strongly supports the need for balanced AI integration in education and professional settings. Qureshi and Khan (2024) explain that Education 4.0 emphasizes the integration of digital technologies with traditional learning methods. Vera and Manrique (2021) highlight that AI should complement human-centered educational practices rather than replace them. Rafiq et al. (2025) demonstrate that effective use of digital technologies involves combining multiple resources for optimal outcomes. Storey (2024) emphasizes that AI integration in education requires critical thinking and responsible application. Lastly, Villarino (2025) notes that successful AI adoption depends on balancing technological tools with existing educational practices, reinforcing the importance of responsible and integrated use of ChatGPT.

Synthesis

The findings indicate that ChatGPT plays a significant role in supporting learning and work by improving efficiency, organizing ideas, and clarifying complex concepts. Participants described it as a helpful assistant that enhances productivity, supports structured study and work routines, and provides quick access to explanations and feedback. However, they also emphasized the importance of verifying information, maintaining originality, and avoiding overreliance on AI-generated responses. Challenges such as accuracy concerns, contextual mismatches, and repetitive outputs highlight the need for critical evaluation and personalization of results. Overall, ChatGPT is viewed as a supplementary tool that enhances performance and understanding, but its effective use depends on responsible integration with traditional sources and independent thinking.

CONCLUSION

In the light of the study, the following conclusion were drawn:

1. The results reveal that ChatGPT enhances productivity, comprehension, and structured learning practices, indicating its strong potential as a supplementary instructional tool. This implies that educators can strategically integrate ChatGPT into teaching and learning processes to support task organization, concept clarification, and student engagement. However, its role should remain facilitative rather than substitutive, ensuring that human instruction, guidance, and expertise remain central in the learning process.
2. Across all findings, the consistent need for verification, triangulation, and critical evaluation highlights that ChatGPT use requires higher-order thinking skills. This implies that educational institutions must emphasize AI literacy, particularly in developing students' ability to question, validate, and refine AI-generated outputs. Integrating critical evaluation frameworks into instruction becomes essential to prevent passive learning and to promote analytical engagement.
3. The study underscores concerns related to overreliance, academic integrity, contextual mismatch, and data privacy. This implies the need for clear institutional policies and guidelines on ethical AI use, including maintaining

originality, ensuring contextual appropriateness, and safeguarding sensitive information. ChatGPT should be positioned as part of a balanced learning ecosystem, where responsible integration with traditional and authoritative sources is strongly encouraged.

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