

How AI Supports Returning Adult Learners in a Developing Economy: Enhancing Academic Writing Through Self-Determination Theory

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Abstract: This study examines the integration of artificial intelligence (AI), specifically ChatGPT, in enhancing the educational experiences of returning adult learners in a developing economy through the lens of Self-Determination Theory (SDT). The research aims to understand how AI tools can support the unique needs of non-traditional students by fostering autonomy, competence, and relatedness, critical components of SDT. Utilizing a qualitative inquiry approach, the study involved in-depth, semi-structured interviews with 11 returning adult learners who have adopted ChatGPT for academic writing. The participants, non-traditional students typically over 25, provided insights into their experiences with AI in their learning processes. The thematic analysis of the data revealed three key themes: Learning Partner, Writing Proficiency, and Academic Collaboration. As a Learning Partner, ChatGPT was found to facilitate idea generation, enhance writing tasks, and support independent learning, promoting learner autonomy. Regarding Writing Proficiency, AI tools contributed to expanding vocabulary, improving writing clarity, and boosting confidence, aligning with the competence component of SDT. The theme of Academic Collaboration highlighted the role of peer influence and academic support in adopting AI tools, fostering a collaborative and supportive learning environment, which addresses the relatedness component of SDT. The findings suggest that AI tools like ChatGPT have significant potential to improve the educational experiences of returning adult learners by addressing their diverse needs and motivations. The study recommends the integration of AI into academic curricula, supported by policies and training, to maximize its benefits for non-traditional students.

Keywords: Artificial Intelligence, Self-Determination Theory (SDT), Returning Adult Learners, ChatGPT, Non-Traditional Students,

1. Introduction

In recent years, the integration of artificial intelligence (AI) in education has revolutionized learning processes, particularly for returning adult learners in developing economies. These learners, who often face unique challenges such as balancing work, family responsibilities, and educational pursuits, benefit significantly from the personalized and adaptive learning experiences AI offers. AI technologies provide tailored support, helping learners to efficiently acquire new skills and knowledge, which is crucial in an era of rapid technological advancements and economic development.

Ryan and Deci(1985)'s, Self-Determination Theory (SDT) highlights the importance of autonomy, competence, and relatedness in fostering intrinsic motivation and effective learning. AI can enhance these aspects by offering customized feedback, fostering independent learning, and creating virtual communities for peer interaction and support. AI-driven platforms can provide real-time feedback on assignments, suggest resources based on

individual learning progress, and facilitate communication among learners, thereby promoting a supportive and engaging learning environment (Cardona et al., 2023; Seo et al., 2021) In developing economies, where access to quality education can be limited, AI serves as a powerful tool to bridge the gap. It enables adult learners to access a wealth of educational resources and learning opportunities that were previously unavailable or difficult to obtain. This democratization of education through AI not only empowers individuals but also contributes to the broader socio-economic development of these regions (Carmo, 2023; Aderibigbe et al., 2023).

This paper employs Self-Determination Theory (SDT) to explore the use of artificial intelligence (AI) in supporting the educational experiences of returning adult learners. SDT set forth that human motivation is driven by the need for autonomy, competence, and relatedness (Ryan & Deci, 2000). By applying SDT, this study aims to understand how AI tools can enhance these motivational constructs among Returning Adult learners, ultimately facilitating their academic success and personal development.

To address these objectives, this study poses the following research questions:

How does the use of ChatGPT as an AI-driven tool enhance the autonomy, competence, and relatedness of returning adult learners in academic writing, according to the principles of Self-Determination Theory (SDT)?

What are the specific impacts of AI tools like ChatGPT on the writing proficiency and academic collaboration of non-traditional students in a developing economy?

This qualitative study seeks to contribute to the existing literature by examining the nuanced motivations of non-traditional students and the potential of AI to address their unique needs within the context of higher education.

2. Review of Related Literature and Theoretical Foundation

Non-traditional students or adult learners are defined as individuals who are typically over 25 and do not follow the traditional path of enrolling in higher education immediately after high school. These students often have multiple roles and responsibilities, such as employment, family care, and community involvement, influencing their educational experiences and needs. They may attend college part-time and need more interest in extracurricular activities on campus. Non-traditional students seek higher education later in life, aiming to balance their studies with other significant life commitments (Diego, 2024). From the self-determination theory perspective, adult learners have psychological needs for autonomy, competence, and relatedness, which are essential for internal motivation and effective engagement in online learning environments (Salikhova et al., 2021). Social and academic engagement, including developing meaningful relationships with peers and instructors and participating in academic activities, is crucial for their success and retention. Additionally, their persistence in education is influenced by their ability to integrate socially and intellectually within the institution, with support systems like academic advising playing a significant role.

Integrating artificial intelligence, particularly ChatGPT, in educational settings, has opened new avenues for supporting non-traditional students. ChatGPT can provide personalized assistance, facilitate self-paced learning, and offer resources tailored to individual needs, which are particularly beneficial for non-traditional students who often juggle multiple responsibilities. The application of AI in education promises significant benefits, including personalized learning, immediate feedback, and enhanced engagement through conversational interfaces like ChatGPT. Studies indicate that AI can improve students' self-efficacy and motivation, particularly for those with special needs or those who struggle with traditional teaching methods. The flexibility and accessibility of AI tools can also support students with demanding schedules or from socioeconomically disadvantaged backgrounds (Mogavi et al., 2024). Non-traditional college students leverage ChatGPT to enhance their learning experiences. These students use ChatGPT for various purposes, including academic support, research assistance, and improving writing skills. The flexibility and accessibility of

ChatGPT make it an ideal tool for non-traditional students who may not have regular access to traditional academic support services due to their unique schedules and commitments. The integration of ChatGPT technology in educational settings presents both opportunities and challenges. ChatGPT can provide personalized learning support, offering timely feedback and guidance to students, thereby addressing their needs for autonomy, competence, and relatedness (Labadze et al., 2023). However, there are concerns about students becoming overly reliant on technology, potentially diminishing their interpersonal communication skills (Zhou & Li, 2023).

To mitigate these issues, it is suggested that ChatGPT be used judiciously, with a focus on enhancing rather than replacing human interaction (Labadze et al., 2023). In the study by Mondal & Mondal (2023), ChatGPT, an AI-powered language generation tool, aids in various aspects of academic writing, such as idea generation, drafting, and revision. The connection of non-traditional students' motivations and the practical applications of AI tools like ChatGPT exemplifies a comprehensive approach to supporting this demographic. ChatGPT, by addressing the diverse needs and motivations of non-traditional students, enhances their educational experiences through personalized support and accessible resources. This integration not only highlights the potential of AI in bridging gaps in traditional educational support systems but also underscores its role in fostering a more engaging and manageable educational journey for non-traditional students, aligning with their unique challenges and motivations. Self-Determination Theory (SDT), developed by Deci and Ryan, provides a theoretical lens through which to understand the motivational dynamics of students, particularly non-traditional students. SDT set that motivation lies on a spectrum from intrinsic to extrinsic, with three basic psychological needs underpinning motivation: autonomy, competence, and relatedness (Zhou & Li, 2023).

To apply Self-Determination Theory (SDT) to returning adult learners using ChatGPT, the Researchers focus on three main ideas: autonomy, competence, and relatedness. Autonomy: by let learners choose how they use ChatGPT, allowing them to ask any questions and decide on their own learning paths. Competence: ChatGPT helps learners improve by giving feedback, suggesting useful resources, and showing their progress over time. Relatedness: by creating a sense of community by enabling interactions with other learners and making ChatGPT feel like a personalized support system. By checking how learners feel about these areas through interviews Researchers can see how well ChatGPT helps them in their studies. Existing research shows that non-traditional I students face unique challenges and can benefit from AI tools like ChatGPT. However, there's a gap in understanding how effective and sustainable these AI tools are over time, especially regarding how these students perceive and use them. More research is also needed to explore how AI interacts with the motivational factors identified by SDT to better support non-traditional students.

3. Methodology

This study adopts a qualitative inquiry approach to explore how returning adult learners utilize ChatGPT as an AI-powered writing tool within the framework of Self-Determination Theory (SDT) using semi-structured interviews. This qualitative methodology is particularly well-suited for capturing the nuanced experiences, motivations, and learning contexts of these learners, offering a comprehensive understanding that might be missed by quantitative studies. The research ultimately aims to provide practical recommendations for optimizing AI-driven support for non-traditional students, focusing on their unique needs and motivations.

The study involves 11 returning adult learners from diverse backgrounds, all of whom have adopted ChatGPT for academic writing. These participants, typically over the age of 25, are employed in various offices of the Local Government Unit of Las Piñas City and are currently third-year students pursuing a Bachelor of Science in Information Systems. The participants were selected through purposive sampling to capture a broad range of experiences and perspectives. To explore the experiences and perceptions of returning adult learners using AI tools.

The participants identified popular AI tools that assist in the writing tasks such as ChatGPT and Grammarly as their most frequently used tools, followed by Quilbot (10 users),

and several other tools. The protocol included open-ended questions to elicit detailed insights, maintaining flexibility for deeper exploration of topics as they arose. Ethical considerations, such as informed consent, confidentiality, and neutrality, were strictly observed throughout the interview process. Recordings were made with participant consent to capture a comprehensive range of responses, thereby deepening understanding of their experiences and perceptions.

The researchers conducted a thematic analysis of the interview data to identify patterns and themes related to the learners' use of ChatGPT. This analysis began with data familiarization, involving repeated readings of the transcripts to gain a thorough understanding. Open coding was used to label key phrases, statements, and observations linked to participants' experiences, motivations, and interactions with ChatGPT. These codes were then grouped into broader categories based on similarities and patterns, resulting in three primary themes: Learning Partner, Writing Proficiency, and Academic Collaboration. The themes were reviewed and refined to ensure they accurately represented the data and aligned with the study's objectives, resolving any discrepancies through discussion. Each theme was clearly defined and connected to Self-Determination Theory (SDT), demonstrating its alignment with the components of autonomy, competence, and relatedness. The final themes were synthesized into a coherent narrative, supported by direct quotes from participants to provide rich, detailed insights into their experiences.

4. Results and Discussion

The researchers conducted a thematic analysis of the interviews of the eleven Adult Learners. The analysis was conducted using the principles of Self-Determination Theory (SDT) as outlined by Ryan & Deci, (2000). The Researchers were able to formulate three themes namely: Learning Partner, Writing Proficiency, and Academic Collaboration. The thematic analysis revealed three main themes, each aligned with components of Self-Determination Theory (SDT). The "Learning Partner" theme reflects SDT's autonomy component, as participants saw ChatGPT as a collaborative partner that supports independent learning by facilitating idea generation, enhancing writing tasks, and providing feedback, fostering personal agency. The "Writing Proficiency" theme aligns with the SDT competence component, showing how AI tools like ChatGPT help learners improve their writing skills by expanding vocabulary, enhancing clarity, and boosting confidence. This support enables learners to feel more capable in their academic tasks. Finally, the "Academic Collaboration" theme connects to the SDT relatedness component, highlighting how ChatGPT fosters peer influence and academic support, promoting a sense of community and belonging. The use of ChatGPT enhances social connections and a supportive learning environment, addressing the need for relatedness. These findings illustrate how AI tools can improve the educational experiences of returning adult learners by addressing their diverse needs and motivations within the SDT framework. The succeeding tables will elaborate each theme. See Table 1 for the first theme.

Table 1. Learning Partner

Theme: Learning Partner	
Codes	Definition
Idea generation	Returning adult learners use ChatGPT as a collaborative partner to brainstorm, explore, and express ideas, generating new thoughts, offering different perspectives, and encouraging deeper reflection.
Enhanced Writing	Returning adult learners utilize artificial intelligence tools, like ChatGPT, to independently manage, organize, and improve their writing tasks.
Learning Assistant	For returning adult learners, ChatGPT supports self-directed learning by enabling quick draft creation, enhancing sentence construction, and offering initial feedback to refine their writing tasks without needing constant external assistance.

The theme of Learning Partner reveals three key elements: Idea Generation, Enhanced Writing, and Learning Assistant, which together demonstrate the vital role AI tools like ChatGPT play in supporting returning adult learners by improving their writing and facilitating independent learning. This theme aligns with the concept of autonomy within Self-Determination Theory (SDT), highlighting the importance of self-directed learning and personal agency in fostering motivation and engagement.

Idea Generation shows how returning adult learners use ChatGPT to brainstorm, explore, and effectively express ideas. These learners view ChatGPT as a valuable collaborative partner in their academic writing, assisting at various stages of idea generation. As one learner shared, "ChatGPT helps me explore and express ideas by acting as a collaborative brainstorming partner, offering suggestions and questions that lead to deeper reflection" (P06). ChatGPT is also praised for its reliability and effectiveness in supporting academic writing tasks. Another learner noted, "My motivation for using ChatGPT in academic writing comes from its effective and reliable support in generating ideas, structuring content, and refining language" (P02), underscoring the tool's role in enhancing the quality and clarity of their work.

Enhanced Writing emphasizes how returning adult learners use ChatGPT to improve their writing by organizing thoughts, structuring content, and ensuring clarity and coherence. Learners find ChatGPT invaluable for enhancing the overall quality of their academic writing. One participant mentioned, "It helps organize thoughts and structure content, ensuring that ideas are communicated in a clear and logical way" (P03). ChatGPT is also recognized for helping overcome writer's block and maintaining clarity, with one learner saying, "ChatGPT can be beneficial in overcoming writer's block and ensuring clarity and coherence in academic work" (P01).

Learning Assistant demonstrates how returning adult learners leverage ChatGPT to support their learning processes, particularly in synthesizing information, generating content, and enhancing academic writing. Learners find ChatGPT essential in managing complex information and synthesizing new ideas by combining diverse perspectives. One learner observed, "AI can summarize complex information from multiple sources, aiding in the synthesis of new ideas by combining insights from different perspectives" (P01). Additionally, ChatGPT helps learners construct better sentences, making their writing more polished. As one learner emphasized, "ChatGPT helps me construct better sentences, making my thoughts more concise and my academic writing more presentable" (P07). ChatGPT's initial feedback helps identify and correct errors, improving clarity and coherence, while encouraging deeper reflection on study topics.

In the study of Xie et al., (2019), the effectiveness of AI-driven tools in enhancing student engagement and fostering a collaborative learning environment aligns with the Idea Generation code. Their study found that AI tools can stimulate critical thinking and creativity by offering diverse perspectives and suggestions during the brainstorming process. Dong, (2023) highlights the role of AI in enhancing writing skills, emphasizing the importance of tools like ChatGPT in helping students organize their thoughts and structure their content. Their research supports the "Enhanced Writing" code, demonstrating how AI tools aid in overcoming writer's block and ensuring clarity and coherence in academic writing. Wang et al., (2023) explore the impact of AI on self-directed learning, noting that tools like ChatGPT serve as effective learning assistants. This aligns with the Learning Assistant code, where AI helps learners synthesize complex information, generate content, and improve sentence construction. Their findings suggest that AI can significantly enhance the learning process by providing instant feedback and facilitating independent learning. Zhang, (2022) (as cited in Crompton & Burke, 2023) further emphasize the importance of AI in education, highlighting its role in providing personalized learning experiences and supporting students' academic tasks. This supports the overall theme of Learning Partner by illustrating how AI tools foster deeper engagement with study materials and promote autonomous learning. See Table 2 for the second theme.

Table 2. Writing Proficiency

Theme: Writing Proficiency	
Code	Definition
Vocabulary Enhancement	Returning adult learners use language models to expand their vocabulary and incorporate varied sentence structures into their writing.
Writing clarity	Returning adult learners benefit from AI-driven tips and suggestions that help make their writing clearer and more polished.
Confidence boost	Experience increased self-assurance and trust in their writing abilities as a result of using ChatGPT.

The theme of Writing Proficiency reveals three key areas where AI tools like ChatGPT significantly impact returning adult learners: Vocabulary Enhancement, Writing Clarity, and Confidence Boost. These areas illustrate how AI tools contribute to improving the writing skills of adult learners, aligning with the concept of competence within Self-Determination Theory (SDT).

Vocabulary Enhancement demonstrates how AI tools introduce returning adult learners to a broader range of vocabulary, offering synonyms and alternative phrases that improve both precision and expressiveness in their writing. One adult learner noted, "The AI introduces users to a wider range of vocabulary, offering synonyms and alternative phrases that can make their writing more precise and varied" (P01). This highlights the AI's ability to expand a learner's vocabulary by suggesting diverse word choices, thereby enhancing precision and variety. Another learner emphasized the benefits of improved sentence structures and vocabulary for effective communication, stating, "The examples of well-crafted sentences and paragraphs are used as models for effective academic writing. ChatGPT's ability to create ideas and offer alternative phrasing has increased my vocabulary and improved my ability to express complicated concepts succinctly and accurately" (P06). This demonstrates how AI tools not only expand vocabulary but also provide models of well-structured sentences and paragraphs.

Writing Clarity focuses on how AI-driven tips and suggestions help returning adult learners make their writing clearer and more polished by offering guidance on grammar, structure, and style. One learner noted the overall enhancement in their academic writing due to the AI's assistance, stating, "ChatGPT has improved my basic academic writing. It gives me tips, helps me organize my thoughts, and suggests different ways to express ideas" (P02). This highlights the AI's ability to provide useful tips that help learners structure their thoughts more effectively. By offering alternative ways to express ideas, AI tools aid in developing a more coherent and clear writing style, making academic papers more comprehensible and engaging. Another learner emphasized the professional polish that the AI's guidance brings to their writing, mentioning, "My writing has become more polished and professional with the guidance on grammar, structure, and style provided by the AI, which has significantly reduced my anxiety about making mistakes" (P03). This highlights the AI's role in refining the overall quality of writing by addressing common issues related to grammar, sentence structure, and style, reducing anxiety about errors and boosting confidence.

Confidence Boost highlights how AI tools provide guidance, suggestions, and improvements, making returning adult learners feel more competent and capable in their writing tasks. This support helps refine ideas, enhance clarity, and polish the overall quality of writing, which in turn reduces anxiety and builds confidence in the writer's skills. One learner expressed how using ChatGPT boosts their confidence in basic writing, stating, "Using ChatGPT boosts my confidence in my basic writing. It helps me refine my ideas and suggests ways to make my writing clearer and more effective. Having that extra support makes me feel more sure of my writing tasks" (P02). Another learner highlighted the impact of AI on their writing confidence by saying, "ChatGPT's ability to create ideas and alternative phrasings allows me to tackle complicated topics and communicate my thoughts more effectively, which boosts my overall confidence in my writing skills" (P04). This showcases the AI's capability to

assist with complex topics by offering ideas and alternative phrasings, enhancing the learner's ability to communicate effectively and significantly boosting their overall confidence in writing.

Research has shown that AI-driven writing tools can be especially beneficial for returning adult learners who may not have been in school for a period of time. These tools provide personalized feedback that helps improve grammar, vocabulary, and overall clarity in their writing (Nazari et al., 2021; Seo et al., 2021). Additionally, the use of AI tools has been linked to increased adult learner confidence, as these tools offer immediate and constructive feedback, reducing anxiety and building self-assurance in writing abilities (Cardona et al., 2023). The theme of Writing Proficiency, encompassing Vocabulary Enhancement, Writing Clarity, and Confidence Boost, highlights the significant impact of AI tools like ChatGPT on adult learners' writing skills. The theme of Writing Proficiency, which includes Vocabulary Enhancement, Writing Clarity, and Confidence Boost, highlights the significant impact of AI tools like ChatGPT on the writing skills of these learners. By expanding vocabulary, providing clearer writing tips, and boosting confidence, these tools help returning adult learners, who may have been away from formal education for some time, to quickly regain and enhance their writing proficiency. These improvements align with the competence component of Self-Determination Theory (SDT), demonstrating how AI tools effectively support these learners in developing their writing skills and improving their overall academic performance. See Table 3 for the third theme.

Table 3. Academic Collaboration

Theme: Academic Collaboration	
Code	Definition
Peer Influence	The way individuals within a learning environment affect each other's academic behaviors, attitudes, and outcomes.
Academic Support	The encouragement, acceptance, and positive reinforcement from professors and peers towards the use of technological tools like ChatGPT in academic settings.

The theme of Academic Collaboration highlights two primary aspects: Peer Influence and Academic Support, demonstrating how AI tools like ChatGPT enhance both individual and group engagement in academic settings. This theme aligns with the concept of relatedness within Self-Determination Theory (SDT), which underscores the importance of social connections and a supportive community in fostering motivation and engagement.

Peer Influence refers to how individuals within a learning environment affect each other's academic behaviors and outcomes. This influence often stems from shared knowledge and collaborative activities. For example, one student noted, "My peers also used ChatGPT. Actually, I learned ChatGPT because of my classmates. And thanks to them, I now know how to use this AI thing" (P07). This illustrates how peers can significantly impact each other's learning by sharing resources and encouraging the adoption of new technologies. Another learner mentioned, "When I mentioned using ChatGPT for my writing or other tasks to my friends, they already knew about AI and how it works. We chat about how tools like ChatGPT function and the ways they affect various aspects, not just in writing" (P02).

Academic Support highlights the encouragement and positive reinforcement from professors and peers toward using tools like ChatGPT in academic settings. This support fosters learning, improves writing skills, and contributes to overall academic development. One learner shared, "Some profs support any tool that helps us learn and improve writing skills" (P01). Another observed, "Most of my professors and peers have expressed satisfaction with my works paraphrased in ChatGPT. They frequently remark on how my ideas are developed, and they have observed improvements in the work's organization" (P04). These examples underscore the supportive environment that promotes the effective use of AI tools for educational advancement.

Several studies highlight how peer influence significantly impacts learning behaviors and outcomes, with students often adopting new technologies and study practices based on

peer recommendations (Xie et al., 2022; Kelly et al., 2023). Furthermore, research indicates that a supportive academic environment, where professors and peers encourage the use of innovative tools, enhances student engagement and academic achievement (Almarzuqi & Mat, 2024; Vaughan et al., 2023).

In the study of Almarzuqi & Mat, (2024), the Researchers found that peer-led discussions about technological tools positively influenced students' willingness to adopt and utilize these tools, leading to improved academic performance. Similarly, Vaughan et al., (2023) highlighted the importance of collaborative learning environments in fostering technological adoption and enhancing educational outcomes.

The theme of Academic Collaboration, encompassing Peer Influence and Academic Support highlights the significant impact of AI tools like ChatGPT on enhancing academic engagement and performance. By fostering a collaborative learning environment and providing supportive feedback, these tools facilitate substantial improvements in writing skills and overall academic development. Educators and institutions should consider promoting the use of AI technologies and creating supportive academic environments to maximize the benefits of these innovative tools for student learning.

5. Limitations, Conclusion and Recommendation

One key limitation of this study is its reliance on a purposive sampling technique, which may affect the generalizability of the findings. Since the research was conducted within a single institution and focused on a specific group of returning adult learners, the results may not be applicable to other educational settings or institutions. The unique characteristics and context of the institution, as well as the specific experiences of the participants, limit the extent to which the findings can be extrapolated to broader populations. As a result, caution should be exercised when applying the insights gained from this study to other institutions, as the motivational dynamics and the effectiveness of AI tools like ChatGPT might differ in other educational environments. Future research should consider expanding the scope of the study to include multiple institutions and a more diverse sample to enhance the generalizability of the findings.

This study explored the integration of artificial intelligence (AI), particularly ChatGPT, in enhancing the educational experiences of returning adult learners in a developing economy, framed through Self-Determination Theory (SDT). The findings demonstrate that AI tools like ChatGPT significantly benefit returning adult learners by serving as a Learning Partner, improving Writing Proficiency, and fostering Academic Collaboration. As a Learning Partner, ChatGPT plays a crucial role in facilitating idea generation, enhancing writing tasks, and supporting independent learning, thereby promoting learner autonomy. This aligns with the autonomy component of SDT, emphasizing the importance of self-directed learning and personal agency. In terms of Writing Proficiency, the study found that AI tools contribute to expanding vocabulary, improving writing clarity, and boosting confidence in writing abilities. These improvements correspond to the competence component of SDT, highlighting how AI supports learners in developing their skills and improving their academic performance. The study also underscores the significance of Academic Collaboration, where AI tools like ChatGPT foster peer influence and academic support, promoting a collaborative and supportive learning environment. This aspect aligns with the relatedness component of SDT, emphasizing the importance of social connections in fostering motivation and engagement. The implications of these findings are profound. Universities should integrate AI tools like ChatGPT into their curricula, supported by comprehensive training for both students and faculty. CHED should develop guidelines that encourage the responsible use of AI in higher education, with a focus on equitable access and long-term effectiveness. Employers should recognize the value of AI in supporting continuous learning and development, while technology developers should design AI tools tailored to the unique needs of returning adult learners.

In conclusion, this study highlights the transformative potential of AI tools like ChatGPT in bridging gaps in traditional educational support systems for non-traditional students. By addressing the diverse needs and motivations of these learners, AI tools can significantly

enhance their educational journey, contributing to broader socio-economic development and the lifelong learning process.

Based on the findings of this study, several key recommendations can be made to optimize the use of AI tools like ChatGPT in supporting returning adult learners in developing economies. Universities should integrate AI tools such as ChatGPT into their curricula, particularly in programs targeting non-traditional students. Comprehensive training should be provided to both students and faculty to ensure effective use of these tools. Additionally, universities should develop policies that promote the responsible and ethical use of AI in education, focusing on enhancing student autonomy, competence, and relatedness. The Commission on Higher Education (CHED) should create guidelines to encourage the integration of AI tools in higher education, particularly for adult learners. These guidelines should include best practices for using AI to enhance learning, methods for assessing its impact, and strategies to ensure equitable access. CHED should also support further research on the long-term effectiveness of AI in education, especially in the context of non-traditional students. Employers should recognize the potential of AI tools in facilitating continuous learning and skill development for employees returning to education. Encouraging the use of AI-driven educational tools can help employees stay competitive. Partnerships with educational institutions to integrate AI into training programs are also recommended to enhance workforce skills. Finally, technology developers should design AI tools that cater specifically to the needs of returning adult learners. Developers should focus on creating user-friendly interfaces that support self-directed learning, provide personalized feedback, and foster collaborative learning environments. Collaboration with educational institutions and policymakers is crucial to ensure these tools align with the learning goals and challenges faced by non-traditional students. Implementing these recommendations will help maximize the benefits of AI tools like ChatGPT, ensuring they effectively support the unique needs of returning adult learners and contribute to their academic and professional success.

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