

The Impact of Generative Artificial Intelligence and ChatGPT on Adult Education

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Abstract

Artificial intelligence has shown tremendous promise in fostering educational transformation as a result of the quick advancement of information technology. The launch of the artificial intelligence tool “ChatGPT” in November 2022 garnered a lot of interest, especially in the education sector. Although ChatGPT has many useful features, it also has some drawbacks that need to be fixed, including the accuracy of question-answers, data pollution issues, ethical and safety concerns, and the possibility of knowledge plagiarism. ChatGPT can also answer user questions, complete user-specified tasks, and even continuously optimise task performance. The use of ChatGPT presents both potential and difficulties in the process of advocating for adult education reform. Additionally, the rise of ChatGPT gives educators a chance to consider their professional worth and raises expectations for them. This article seeks to shed light on adult educators' opinions regarding generative artificial intelligence use while also highlighting education technology features and tools that can help adults better address the requirements of a variety of learners and hone their instructional design abilities.

Keywords: *ChatGPT, artificial intelligence, adult education, teacher literacy, educational transformation.*

Introduction

The integration of artificial intelligence (AI) tools in the classroom has attracted a lot of interest in the ever-evolving field of modern education. Among these

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resources, ChatGPT stands out as a noteworthy AI model with possible applications in the fields of education and learning. Despite a number of studies, such as Rueda's comprehensive review, that have examined ChatGPT's effects on education, there is still a noticeable lack of clarity regarding its exact worth to teachers and its usefulness in the classroom. Previous studies have mostly focused on the general use of ChatGPT in classrooms, with some highlighting its growing popularity among adult teachers. The term "the production of entirely new creative works, such as text, pictures, music, or poetry, in response to simple prompts" refers to generative artificial intelligence (GenAI) (Cacicio & Riggs, 2023). ChatGPT, Midjourney, DALL-E, Synthesia, Bard, and Stable Diffusion are well-known instances of GenAI that can help teachers automate tasks (Cacicio & Riggs, 2023). GenAI tools offer the ability to accelerate the quick generation of high-quality, individualised, and engaging materials for instruction and evaluation in any given learning situation, which is particularly useful in adult education where teacher capacity and resources are constrained (Cacicio & Riggs, 2023). Nevertheless, despite the excitement around the revolutionary possibilities of GenAI technologies (such as ChatGPT, Claude, Bard, and Bing Chat) in the realm of education, there have been dire forecasts regarding their application by educators and learners (Rudolph et al., 2023). Regarding the effects of GenAI tools on teacher practice, teacher education, and student learning, educators have been given conflicting information and are quite unsure (Mishra et al., 2023). Given a number of considerations, including their accuracy, response quality, perceived utility, ethical concerns, etc., it is advised to deploy GenAI tools for teaching and learning with caution (Adarkwah et al., 2023; Tlili et al., 2023). To help educators use GenAI as an instructional tool in adult learning, the "GenAI adult learning ecology" framework (GenAI-ALE) has been presented. The suggested framework is thought to encourage the proper and safe application of GenAI technologies in adult education. Improving adults' competencies and giving them the fundamental skills they need to handle problems in the real world is one of the main goals of education. According to a survey, 71% of adults with postgraduate degrees and higher education degrees think AI chatbots will affect their jobs (Hsu & Ching, 2023). Therefore, it is extremely valuable to provide a framework to direct the creation, development, and application of GenAI solutions for adult learners.

Generative AI's Potential for Adult Education

The population of adult learners is varied and complex, with a range of educational paths and socioeconomic origins (Hollander et al., 2023). By encouraging independence and improving educational results, the application of GenAI presents a special chance to customise their educational experiences (Hsu & Ching, 2023).

The following are particular instances of the use of generative AI in adult education:

1. **Personalised Learning:** AI-powered adaptive learning systems may evaluate student performance and modify the level of difficulty and learning speed.
2. **AI-Generated Content:** AI is able to produce learning resources that are specifically suited to a given skill level and area of development, including case studies, study guides, and practice exercises for each learner's needs.
3. **Virtual Tutors:** AI-driven chatbots are available around-the-clock to help, answering enquiries, offering clarifications, and offering guidance whenever needed.
4. **Interactive Learning:** AI is capable of producing games, simulations, and other interactive learning materials that increase student interest.
5. **Visual Aids:** AI can produce pictures, charts, and films to improve education, especially for those who learn best visually.
6. **Visual Aids:** AI can create videos, charts, and images to enhance learning, particularly for those who learn best visually.
7. **Language Learning:** AI is able to produce interactive language exercises, virtual language teachers, and conversational practice scenarios.
8. **Automated Grading:** Teachers can concentrate on student interaction and tailored feedback by using AI to grade assignments automatically.
9. **Virtual assistants:** AI-driven chatbots can assist students with administrative procedures, remind them of deadlines, and respond to frequently asked inquiries.
10. **Effective Lesson Planning:** Teachers can save time and effort by using AI to create lesson plans, teaching resources, and assessment activities.
11. **ChatGPT:** It is a comprehensive language model that may be used for writing, summarising, and responding to enquiries, among other things.
12. **Bing AI:** An information-gathering and research chatbot powered by Microsoft.
13. **Midjourney:** An application that uses word prompts to create graphics.
14. **QuillBot:** A tool for better writing and paraphrasing.

Generative Artificial Intelligence in a Common Education Technology

Instrument: Teachers, marketers, and artists all utilise Canva, a free design tool. 2023 saw the introduction of Canva Magic Design, Magic Write, and Magic Edit, which are among the GenAI-powered Magic features (Adams, 2023). Like a number of well-known tech firms, such as Google, Adobe, and OpenAI, Canva also includes a text-to-image function. Teachers can enter any text prompt in real time and for

free. The applications of GenAI are wide-ranging, from text generation to image, video, and music generation. AI has the potential to support complex learning experiences with multiple people and resources and augment human abilities in a variety of learning contexts. As with any new and emerging technology, educators need to prioritise learning goals over tools and ensure that the use of GenAI tools and features supports learners in meeting their unique and diverse learning needs and aspirations. GenAI has many uses, including the creation of text as well as images, videos, and music. AI could help enhance human capabilities in a range of learning scenarios and provide intricate learning experiences involving several individuals and resources. Like with any new and developing technology, educators must put learning objectives ahead of tools and make sure that using GenAI capabilities and features helps students achieve their various and distinct learning needs and goals. Furthermore, considering the obvious disparities in access to technology and digital literacy skills, digital learning programmes and experiences need to be created via a trauma-informed lens for various communities of adult learners (Housel, 2023). While assessing and minimising significant hazards to the participating instructors and students, efforts to use GenAI technology in adult education should further educational objectives (U.S. Department of Education, Office of Educational Technology, 2023).

Generative Artificial Intelligence and AI Human-Centred Andragogy:

This refers to implementing instructional strategies that give adult learners' needs and preferences top priority. This involves utilising GenAI to offer individualised learning routes, feedback, and support based on the unique profiles of each student. In contrast to pedagogy, which places greater emphasis on the education of children and teenagers, andragogy merely refers to the education of adults (Forrest & Peterson, 2006). One learner-centred approach to adult education is human-centred andragogy (Forrest & Peterson, 2006). The human-centred approach, which emphasises the development of human capabilities and agency for successful human-machine collaboration in learning, life, and work, is UNESCO's (2023b) guideline for integrating GenAI into education. The adult learner is given greater weight than GenAI technology in a human-centred andragogy.

Generative Artificial Intelligence (GenAI) in Literacy: This discusses using GenAI tools to improve the knowledge and abilities of adult learners. GenAI literacy "includes the ability to understand how Large Language Models (LLMs) are trained, to appreciate the differences between AI tools designed for specialised tasks as opposed to an all-purpose... as well as to understand what types of problems current GenAI tools are good at solving." Building AI-literate citizens is necessary, given

that GenAI will transform education, the workplace, and society (Adarkwah et al., 2023; Chen et al., 2023; Chiu, 2023; Tlili et al., 2023). In order for adult learners to effectively utilise GenAI tools for both work and education, it is necessary to provide them with opportunities to learn about GenAI and reflect on their personal connections to it (Chen et al., 2023). For instance, creating powerful prompts is a necessary ability to fully utilise GenAI's capabilities (Robertson et al., 2024). Building AI-literate citizens is necessary given that GenAI will transform education, the workplace, and society (Adarkwah et al., 2023; Chen et al., 2023; Chiu, 2023; Tlili et al., 2023). In order for adult learners to effectively utilise GenAI tools for both work and education, it is necessary to provide them with opportunities to learn about GenAI and reflect on their personal connections to it (Chen et al., 2023). For instance, creating powerful prompts is a necessary ability to fully utilise GenAI's capabilities (Robertson et al., 2024).

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Conclusion

GenAI solutions can be easily integrated into learning management systems and are now available as add-ons in virtual meeting platforms for educational reasons. Generative AI has the potential to revolutionise adult education by facilitating problem-based, individualised, and self-directed learning. But it also brings up significant issues about its moral application, certain biases, and the requirement for thorough integration with conventional teaching methods.

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