

Conversational AI and Older Adult Learning: Exploring Generative AI as a Psychological and Educational Resource in Lifelong Learning

Research Overview

This study explores older adults' engagement with generative AI in Taiwan's lifelong learning programs. Through a qualitative AI literacy course, it examines digital confidence, emotional experiences, and perceptions of conversational AI. Findings suggest that natural language interaction may support psychological empowerment, digital inclusion, and active aging among older learners.

Purpose

The rapid development of generative artificial intelligence (AI), particularly conversational AI systems such as OpenAI ChatGPT, has transformed how individuals access information, communicate, and participate in learning. While current educational discussions surrounding AI primarily focus on younger learners, workforce preparation, and technological innovation, relatively limited attention has been paid to how older adults experience generative AI within lifelong learning contexts. This issue is increasingly significant in aging societies, where digital exclusion may intensify social isolation, technological anxiety, and unequal participation in contemporary knowledge cultures. This study investigates how older adults engage with conversational AI in a university-based lifelong learning program in Taiwan. Drawing upon Self-Determination Theory, Active Aging, and Digital Inclusion, the study conceptualizes generative AI not merely as a technological tool, but as a psychological and educational resource capable of supporting autonomy, competence, and social participation in later life. In this study, AI literacy refers not only to operational ability, but also to learners' confidence in interacting with AI, critical awareness of AI-generated information, ethical understanding, and the capacity to meaningfully use

conversational AI in daily life. Particular attention is given to the role of natural language interaction in reducing technological barriers commonly associated with traditional digital systems. The study aims to contribute to emerging discussions on AI literacy, geragogy, and lifelong learning by examining how conversational AI reshapes older adults' relationships with technology, learning, and self-perception in aging societies.

Methods

This study adopted a qualitative case study approach. The research was conducted in a university-based lifelong learning program for older adults in Taiwan. A total of 26 participants aged between 58 and 84 voluntarily enrolled in a six-week AI literacy course consisting of 12 instructional hours.

The course employed a peer-learning and collaborative exploration model. Participants were introduced to conversational AI, AI-assisted information searching, language learning, image generation, and practical AI applications in everyday life. Learning activities included guided demonstrations, hands-on practice, reflective discussion, and collaborative sharing. Participants used AI tools for tasks such as travel planning, storytelling, recipe searching, communication assistance, and creative expression.

Data collection included participant observation, reflective learning notes, classroom interaction records, and semi-structured interviews. Interview questions focused on emotional reactions toward AI, perceived learning difficulties, confidence in technology use, ethical concerns, and experiences of interacting with conversational AI systems.

Data were analyzed using thematic analysis based on the framework proposed by Virginia Braun and Victoria Clarke. To enhance trustworthiness, triangulation was conducted through cross-comparisons among classroom observations, participant reflections, and interview narratives.

Results and Discussion

The findings suggest that conversational AI significantly influenced older adults' perceptions of technology, learning motivation, and psychological engagement. Although many participants initially expressed anxiety, fear of failure, and low digital confidence, most gradually developed greater curiosity and willingness to engage with AI technologies throughout the course.

One major finding was that conversational AI reduced technological barriers commonly associated with traditional digital systems. Participants frequently described conversational AI as “easier to approach” because interaction occurred through natural language rather than procedural commands or multilayered interfaces. This shift from interface-centered interaction toward language-centered communication appeared to create a form of technological transparency, in which the complexity of the technology became less visible to learners. As a result, participants experienced lower levels of technological intimidation and greater willingness to experiment with digital tools.

The findings also demonstrated strong connections with Self-Determination Theory. Conversational AI appeared to support autonomy by allowing participants to direct their own learning through natural language questioning and self-paced exploration. Competence was strengthened as learners gradually experienced successful interactions with AI systems and developed confidence in completing digital tasks independently. In addition, some participants described AI as a “learning companion” that responded patiently and encouraged continued engagement, reflecting a sense of relatedness and emotional connection through anthropomorphic interaction.

Interestingly, several participants began to reconstruct their perceptions of aging and learning. Rather than viewing themselves as technologically incapable, they increasingly perceived themselves as active learners capable of participating in contemporary digital culture. These findings suggest that generative AI may contribute

not only to digital skill acquisition, but also to psychological empowerment and active aging.

However, participants also expressed concerns regarding misinformation, privacy, overreliance on AI, and ethical uncertainty. Furthermore, repeated guidance and scaffolded instruction remained necessary for some learners due to differences in prior digital literacy. These findings highlight the importance of geragogical instructional design emphasizing repetition, emotional support, paced learning, and guided interaction in AI education for older adults.

Overall, this study suggests that conversational AI may redefine older adults' relationships with technology by transforming digital participation into a more language-mediated and psychologically accessible experience. The study further recommends that lifelong learning programs and senior education initiatives in Taiwan incorporate conversational AI into digital literacy curricula to reduce technological anxiety and promote digital inclusion in aging societies.