Chapter 4
The Emergence of Generative AI in Higher Education:
Exploring the Perceived Challenges Among Teachers and Students

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ABSTRACT

The emergence of Generative AI (GAI) in education brings both benefits and challenges. As GAI tools become more common in schools, concerns about ethics, academic honesty, and how well teachers and students adapt to GAI are a major concern. This chapter explored the challenges of using GAI as experienced by teachers and students in rural areas, where access to technology and digital skills may affect AI use. Following a Husserlian phenomenological research design, participants were interviewed, and the transcripts were examined using thematic analysis. The findings show that teachers struggle to balance GAI tools with traditional teaching, while students face challenges with digital literacy and academic integrity. Despite these issues, both teachers and students see the potential of GAI tools in improving learning. The chapter emphasizes the need for clear ethical guidelines, digital skills training, and school support to ensure GAI tools are used responsibly. These findings show the importance of further research on AI's role in education.

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INTRODUCTION

The rapid advancement of Artificial Intelligence (AI) in education, particularly Generative AI technologies such as ChatGPT and DALL·E, is transforming higher education by influencing teaching methodologies, student engagement, and administrative tasks. These tools enable automation, personalized learning experiences, and creative content generation (Holmes et al., 2023). However, despite these promising advancements, educators and students face significant challenges in adopting and integrating Generative AI into higher education. These challenges include ethical concerns, academic integrity issues, accessibility disparities, and a lack of adequate training and guidelines (Costa K et al., 2024). Therefore, a critical examination of the perceived challenges associated with Generative AI adoption is necessary to ensure responsible and equitable implementation.

While existing literature focuses on the technological capabilities and benefits of Generative AI, important gaps remain in exploring the real-world challenges faced by educators and students in higher education. Moreover, there is a limited study on the lived experiences of educators and students directly interacting with Generative AI technologies in their daily academic tasks. Furthermore, research on the localization of Generative AI in education, particularly in rural and remote areas, is limited. Existing studies often focus on urban or well-resourced educational environments, leaving a gap in understanding how these technologies can be adapted and accessed in regions with less technological infrastructure.

To provide a structured understanding of these challenges, this study is grounded in the Technology Acceptance Model (TAM), which explains how individuals adopt and use new technologies, considering factors like perceived usefulness and ease of use, and attitude towards using technology (Kumar, 2023). TAM serves as a valuable framework for exploring the perceived challenges of using Generative AI in higher education particularly in a rural university setting where technological assess and training opportunities are limited. According to TAM, users are more likely to embrace a technology if they perceive it as beneficial and easy to use (Kumar, 2023). However, challenges on using the technology as experienced by both teachers and students may affect their overall acceptance. When there are barriers—whether related to usability, accessibility, or understanding—the adoption and effective use of the technology may be hindered (Mallinger et al., 2024). TAM provides a more focused understanding of technology adoption behavior. This study adopts TAM to investigate the perceived challenges of AI integration and its acceptance in higher education, particularly in a rural university setting where infrastructure limitations significantly impact perceived ease of use and usefulness.

While prior studies have explored AI adoption in education, they primarily focus on urban institutions with well-developed infrastructure and digital literacy programs (Sapienza et al., 2022). However, rural university setting often face limited access to high-speed internet, outdated technological infrastructure, and a lack of faculty training programs focused on AI integration (Abides, 2024; Rafiq et al., 2024). Furthermore, both students and teachers have varying levels of digital literacy which impacts the ability to utilize AI-driven educational tools effectively. Moreover, studying in rural universities is important as it provide insights on the digital divide and technological disparities in higher education. Thus, this chapter aimed to fill the gap by examining the challenges perceived by both teachers and students towards use and adoption of Generative AI technologies.

Furthermore, this chapter sought answers to the following research question: What are the perceived challenges faced by teachers and students in using Generative AI in higher education? This study aims to explore the ethical, pedagogical, and practical difficulties encountered when using Generative AI tools and to provide insights into how these challenges can be addressed. The findings will serve as a