Chapter 17
Impact of Generative AI in Transforming Higher Education Pedagogy

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ABSTRACT

The purpose of this study is to investigate the impact of generative artificial intelligence in higher education. This study investigates how generative artificial intelligence enhances teaching and learning practices in higher education institutions. Additionally, it also explores applications, advantages, and problems associated with the use of generative artificial intelligence. This study analyses the implementation of Generative AI in higher education institutions employing qualitative methods such as focus groups study and interviews The findings of this study show how significantly generative AI has impacted teaching in higher education. Generative AI solutions can enhance personalized learning experiences, as well as create custom learning resources for students. It also helps in automating administrative processes. However, there are difficulties with adaptability, privacy concerns, and ethical issues in utilizing AI generated applications. The findings of this study have recommendations for teachers, administrators, and policymakers of higher education.

INTRODUCTION

Teachers in higher education have a long history of using traditional pedagogy, which has served as the backbone of academic instruction for decades. Although, traditional methods of teaching have been effective in the past, but they are inadequate in the

age of generative artificial intelligence (Generative AI). One of the fundamental limitations of the approach is that it adopts an all-or-nothing approach to teaching, which is a significant flaw. It has been observed that traditional pedagogical methods frequently are unable to suit the great variety of learning styles, speeds, and requirements that students have at present.

In contrast to that, generative AI has the potential to address this issue by offering personalized educational content and pathways based on student background, in so doing student engagement and performance gets improved (Cooper, 2023; Yang, 2022; Tomar & Verma, 2021). Additionally, traditional pedagogy frequently requires teachers to spend a lot of time and resources on mundane administrative tasks like grading and assessment which requires a lot of time and energy.With the help of generative AI, these mundane activities can be taken care of if teachers are able to utilize generative AI application effectively. Thus, teachers will get time for mentoring, engaging in interactive learning, and assisting students in developing the critical thinking and problem-solving abilities that are crucial in the digital age (North et al., 2023; Bygstad et al., 2022; Tomar & Verma, 2021). Thus, it is clear that in a time where generative AI can provide students adaptable, effective, and personalized educational experiences which has ultimate power to transform the landscape of higher education, as the constraints of traditional pedagogy are becoming more evident.

We cannot deny that the landscape of higher education is shifting, and as a result, pedagogy is being transformed significantly (Grassini, 2023; North et al., 2023). Generative AI, a branch of artificial intelligence (AI), has enormous potential for use in higher education institutions (Tomar & Verma, 2021). This study's main objective is to analyse how generative AI has its impact on educationsimultaneously highlighting its uses, advantages, and difficulties.

With the emergence of Generative AIas a revolutionary force, technological developments have led the way in a new era in education (North et al., 2023; Bearman et al., 2022; Yang, 2022). This study's aim is to analyse how generative AI can change the pedagogy in higher education, covering its uses, advantages and challenges. Through quantitative data analysis using interviews and questionnaires, this study explores the adoption of Generative AI in higher education institutions and its implications for teaching and learning.

In this studyqualitative research design is effective in providing thorough investigation of the use of Generative AI in higher education. A standardized survey questionnaire was distributed in higher education institutes located in Faridabad, Haryana. Data was collected from professors and students of higher education institutions in the course of this study. A survey was undertaken on perceived influence of generative AI, its adoption, application and challenges in higher education.Purposive sampling was used to choose institutions from Haryana, India.

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