A Bibliometric Analysis of Generative Artificial Intelligence Research in Higher Education: Implications for Public Administration Education

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Abstract: The rapid advancement of generative artificial intelligence (AI) has begun to transform the landscape of higher education, influencing teaching, learning, assessment, and research practices in profound and unprecedented ways. As generative AI tools such as ChatGPT increasingly enter classrooms, research environments, and administrative systems, they are reshaping how knowledge is created, shared, and evaluated. While the pedagogical and ethical implications of generative AI are widely discussed across disciplines, a comprehensive understanding of how scholarly research on this topic has evolved remains limited. Existing studies often focus on localized pedagogical impacts or conceptual reflections, leaving a gap in the systematic mapping of global research patterns. This study addresses this gap by conducting a large-scale bibliometric analysis to chart the development, thematic trends, and intellectual structure of generative AI research in higher education. By uncovering key patterns and research frontiers, the paper provides insights relevant not only to educational innovation but also to the evolving competencies required of future public administrators, for whom AI literacy, ethical awareness, and governance capabilities are becoming increasingly vital.

The primary aim of this paper is to identify conceptual and empirical gaps in the existing body of literature and to outline a future research agenda that situates the role of generative AI within the broader digital transformation of higher education. The study applies bibliometric techniques to a corpus of 2,791 documents related to generative AI and higher education, published up to October 2025 and indexed in the Scopus database. Both established and advanced bibliometric methods were implemented using Python software to ensure analytical rigor, transparency, and reproducibility. The methodological approach integrates performance analysis, keyword co-occurrence mapping, and network visualization to trace dominant research themes, interdisciplinary linkages, and the temporal evolution of scholarly discourse. This comprehensive mapping allows the identification of influential authors, institutions, and publication venues, providing an empirical foundation for understanding how generative AI has become embedded within global educational research ecosystems.

The findings reveal an exponential rise in publications between 2023 and 2025, underscoring the surge of academic interest following the widespread adoption of generative AI technologies. Journals such as Education Sciences, Computers and Education: Artificial Intelligence, and Frontiers in Education have emerged as leading outlets for this expanding research domain, reflecting the convergence of educational, technological, and policy-oriented inquiry. Thematic analysis identifies four dominant clusters centered on ChatGPT and other large language models, AI literacy and skill development, academic integrity and assessment redesign, and ethical and governance frameworks for responsible AI integration. Highly cited studies emphasize the pedagogical opportunities and institutional challenges posed by generative AI, highlighting tensions between innovation, quality assurance, and ethical accountability. Taken together, these patterns reveal a rapidly consolidating field that bridges education, computer science, and public governance perspectives. The results not only capture the dynamics of this emerging research landscape but also provide a foundation for strengthening AI-related competencies in public administration.