Chapter 3
Is It the End of Undergraduate Dissertations?
Exploring the Advantages and Challenges of Generative AI Models in Education

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ABSTRACT

This chapter delves into the intriguing realm of generative artificial intelligence (AI) models and their potential impact on undergraduate dissertations in the field of education. As AI continues to advance and permeate various aspects of our lives, the educational landscape is not immune to its transformative influence. The chapter begins by providing an overview of generative AI models, including their underlying principles and techniques such as deep learning, natural language processing, and neural networks. It then explores how these models can be harnessed to generate written content that is coherent, creative, and relevant, raising the question of whether undergraduate dissertations, as we know them, are destined to become obsolete. Advantages of employing generative AI models in education are scrutinized, highlighting their potential to enhance the efficiency and quality of student work.

1. INTRODUCTION

1.1 The Significance of Undergraduate Dissertations in Education

In the ever-accelerating landscape of higher education, undergraduate dissertations hold a remarkable position as a formative milestone for students. Surprisingly, despite their decades-long tradition, these academic endeavors continue to retain their profound significance in shaping the intellectual growth and research acumen of students across diverse disciplines. As the capstone projects of undergraduate studies, dissertations provide a unique opportunity for students to delve deep into a subject of their choice, exploring its intricacies, addressing pertinent research questions, and contributing to the existing body

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of knowledge. This immersive and rigorous process fosters critical thinking skills, nurtures creativity, and instills a sense of intellectual curiosity that transcends the confines of the classroom. Moreover, through the mentoring and guidance of faculty advisors, students cultivate the ability to formulate research methodologies, analyze data, and communicate their findings effectively—essential attributes for their future academic and professional pursuits (Roberts and Seaman, 2018; Kenwright, 2016b). Thus, the enduring significance of undergraduate dissertations in education lies not only in their role as a conduit for learning but also as a testament to the unwavering commitment of educational institutions to nurture the next generation of scholarly minds (Webster et al., 2000).

1.2 Emerging Trends in Technology and Their Impact on Dissertations

Emerging trends in technology are significantly impacting the the education landscape (Kenwright, 2020) ushering in exciting possibilities and transformative changes both in the classroom and in assessments such as dissertations. Advancements in data analytics and big data have revolutionized research methodologies, enabling scholars to access and analyze vast datasets, enriching the depth and scope of their dissertations. Virtual collaboration tools have transcended geographical barriers, facilitating seamless interactions among researchers and promoting global collaboration in dissertation committees. AI-driven content generation tools have streamlined the writing process, providing support for literature reviews and content creation while preserving academic integrity. Interactive data visualization tools enhance the presentation of complex research findings, making dissertations more engaging and accessible to audiences. Moreover, the open-access movement and digital repositories have facilitated the dissemination of research, encouraging broader knowledge sharing and societal impact. As technology continues to evolve, researchers must embrace these trends mindfully, considering ethical implications and ensuring that they receive adequate training to leverage technology effectively and responsibly in their dissertations, thus propelling academic research into a dynamic and promising future.

1.3 Contribution

The key contributions of this chapter are, (1) recognizing the proliferation around AI in education; (2) addressing concerns and questions surrounding the role of AI in dissertations; (3) elaborating on the implications of AI in dissertations; (4) reviewing potential challenges and ethical conundrums around AI-written dissertations; and (5) Providing insights and recommendations for future dissertations in light of the rise of intelligent assistive technologies.

2. UNDERSTANDING GENERATIVE AI AND CHATGPT

2.1 ChatGPT: A New Secret Weapon for Learning in Higher Education

In the rapidly evolving educational landscape, technological innovations continue to shape the way students learn and engage with course materials. Among the latest breakthroughs, ChatGPT emerges as a new secret weapon for learning in higher education (Kasneci et al., 2023). Developed by OpenAI, ChatGPT is a cutting-edge language model based on the GPT architecture, designed to generate human-like responses to text prompts. Its remarkable ability to comprehend and generate contextually relevant