

Chapter 3

Artificial Intelligence as a New Paradigm in Education and the Future of Social Sciences

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ABSTRACT

Artificial Intelligence (AI) is emerging as a transformative paradigm in education and the future of social sciences, reshaping how knowledge is created, disseminated, and applied. AI-driven technologies enhance personalized learning, adaptive assessments, and intelligent tutoring systems, fostering more inclusive and efficient educational environments. In the social sciences, AI facilitates advanced data analysis, predictive modeling, and behavioral insights, enabling deeper understanding of complex societal issues. This paradigm shift raises critical questions about ethics, data privacy, and the evolving role of educators and researchers. The integration of AI in these fields offers opportunities to bridge educational gaps, promote equity, and support evidence-based policy-making. It also presents challenges related to algorithmic bias, digital inequality, and the need for interdisciplinary collaboration. This study explores the multifaceted impact of AI on education and social sciences, highlighting both the transformative potential and the ethical considerations.

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INTRODUCTION

Artificial intelligence (AI) is currently receiving widespread attention as potentially the most important paradigm shift of our time, especially as it enters the domains of society and culture, often under the rubric of the so-called fourth industrial revolution. While attention is occurring in all sectors, it is exceptionally pressing in education. The relatively new thrust in AI, percolating through educational research, is driven by several socio-technical developments that span over two decades (Kaur, 2024). In light of these developments, a renewed interest in articulating the future of teaching, learning, and social sciences seems timely, if not overdue. Rather than this being a matter of trend, fad, or catch-up, what is called for is a critical interpretation of the impetus of AI in education, i.e., to critically engage in what AI makes possible and the implications it carries for learning, society, and the dynamics of capital (Shafik, 2024a).

In anticipation of AI's contribution to reshaping education, it is important to understand the socio-technological matrix in which the use of AI becomes relevant. While positive inroads and promising potentialities are heralded independently of empirical evidence, AI may be apprehended as a teachbot and learning tutor possessing heuristic competencies, possibly more extensive and fascinating than human tutors or teachers (Shafik, 2024b). However, since AI development in general and educational AI encompasses several profound educational, social, cognitive, neuroscientific, and interdisciplinary transitions, in conjunction with mega-corporations and certain governments that have a stake in AI and, by proxy, the species called the AI-enhanced, we propose that AI should be a matter of overture, critique, possibility, and caution in anticipation of its arrival on the socio-educational scene (Gondwe, 2024).

AI significantly impacts education and research processes at schools and universities. Starting with persuasive technologies and affective computing, today's AI technologies are widely used in various applications such as educational data mining, learning analytics, etc. The potential of AI-based technologies to support individual learning through adaptive and personalized learning platforms is not questionable. However, it is also not questionable that the associated risks and side effects, in terms of disturbing and transforming teaching, guiding, and reading performance data from students in ways that require thinking about AI's ethical and legal guidance, are discussed to a minimal degree (Habibipour, 2024). In that context, this sheds some light on the discussion of what AI can and cannot do or may not affect social science research, especially concerning the mind, society, and related fields. We will analyze AI's potential and challenges before presenting our concluding remarks. With that overall comprehensive intention, the ambition is to holistically shed light on the socially enriching cognitive potential of AI, its ethically challenging potential

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