


Chapter 2

AI as an Educational Partner: Potential, Ethical Dilemmas, and the Future of Teaching

Anand Soni

 <https://orcid.org/0009-0001-4896-0639>


Bahrain Polytechnic, Bahrain

Satya Ratnakaram

 <https://orcid.org/0000-0002-8908-302X>


Bahrain Polytechnic, Bahrain

Om Prakash Yadav

 <https://orcid.org/0000-0003-0802-8684>

Lovely Professional University, India

Harris Saseendran

 <https://orcid.org/0000-0001-7386-8001>

Bahrain Polytechnic, Bahrain

Zakir Hossen Shaikh

 <https://orcid.org/0000-0003-4733-4166>

College of Business Administration, Bahrain

ABSTRACT

Rapid advancements in Artificial Intelligence (AI) are dramatically reshaping various sectors, with education at the forefront of this transformation. AI-driven technologies, including intelligent tutoring systems, automated grading tools, and personalized learning platforms—are revolutionizing traditional teaching methodologies by

DOI: 10.4018/979-8-3373-0396-3.ch002

delivering tailored educational experiences and streamlining administrative tasks (Francesc et al., 2019). This paper investigates AI's potential as an essential educational partner rather than a substitute for human teachers, highlighting its role in enhancing personalized learning and freeing educators to focus on mentorship and critical thinking. This study discusses the ethical concerns, issues/ impact and future of teaching in an AI-assisted environment, advocating for a balanced approach that leverages technological advancements while preserving the indispensable human element in education. The paper calls for responsible AI deployment to support and enhance the core values of teaching and learning.

1. INTRODUCTION

In 1959, Arthur Samuel coined machine learning as “the ability to learn without being explicitly programmed,” marking an early milestone in AI. While AI can exist without machine learning, doing so demands extensive manual coding. Deep Learning, a subfield of machine learning, uses layered neural networks to extract meaningful patterns from data. AI heavily relies on big data, defined as datasets too large for conventional tools, characterized by Volume, Variety, and Velocity (Manyika et al., 2011). In education, Educational Data Mining and Learning Analytics use data to improve teaching, predict learner behaviors, and provide real-time feedback for enhanced learning outcomes (Francesc et al., 2019).

1.1 Background and Context

Artificial Intelligence (AI) is reshaping education by transforming traditional teaching models into dynamic, personalized systems. From intelligent tutors to adaptive learning platforms, AI addresses demand for individualized instruction and administrative efficiency (Sierra, 2024). Tools like ChatGPT, virtual assistants, and learning analytics provide real-time feedback and help identify learning gaps, especially in technical fields like medicine and engineering (Mirza et al., 2025; Varghese et al., 2025).

However, this progress brings ethical concerns, including data privacy, bias, and reduced teacher autonomy (Jafari, 2024).

AI in education has changed from rule-based systems to psychologically intelligent tools that actively adopt learning (Lucietto & Peters, 2024). However, limited access in less focused areas highlights ongoing equity challenges (Sapohov, 2024). As AI becomes a collaborative classroom partner, it restyles traditional teaching roles and responsibilities (Ka & Colloton, 2024). Ethical venture of AI in education demands clear and strong digital literacy between the educators and learners (Eshaghi, 2024).

22 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage: www.igi-global.com/chapter/ai-as-an-educational-partner/392179

Related Content

Autonomous Vehicles

Roesfiansjah Rasjidin, Nizirwan Anwar, Yaddarabullah Yaddarabullah, Muhamad Hadi Arfian, Suwarno Suwarno, Jufri Jufri, Popong Setiawati, Agus Herwantoand Raden Teddy Iswahyudi (2027). *Encyclopedia of Modern Artificial Intelligence* (pp. 1-26).

www.irma-international.org/chapter/autonomous-vehicles/407387

YOLO-IP: An Efficient and Robust Deep Learning Framework to Detect Insect Pests for Agricultural Applications

Rashmiranjan Nayak, Prashant Dwivediand Umesh Chandra Pati (2023). *Artificial Intelligence Tools and Technologies for Smart Farming and Agriculture Practices* (pp. 133-158).

www.irma-international.org/chapter/yolo-ip/325573

Multicriteria Decision-Making Method Under a Single Valued Neutrosophic Environment

Shapu Ren (2017). *International Journal of Intelligent Information Technologies* (pp. 23-37).

www.irma-international.org/article/multicriteria-decision-making-method-under-a-single-valued-neutrosophic-environment/187179

Modeling of Agent-Based Complex Network to Detect the Trust of Investors in P2P Platform

Yuwei Yan, Jian Zhangand Xiaomeng Ma (2019). *International Journal of Intelligent Information Technologies* (pp. 20-31).

www.irma-international.org/article/modeling-of-agent-based-complex-network-to-detect-the-trust-of-investors-in-p2p-platform/225067

Generative AI in Modern Healthcare: Benefits, Challenges, and Ethical Implications

Moona Kanwaland Muhammad Shahab Siddiqui (2025). *Intersection of Human Rights and AI in Healthcare* (pp. 117-146).

www.irma-international.org/chapter/generative-ai-in-modern-healthcare/365862