Chapter 6
Empowering Educators for the AI-Driven Classroom:
Strategies for Training and Professional Development

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ABSTRACT

Teachers' roles are changing quickly as artificial intelligence continues to change the educational landscape. Teachers must now use AI-powered tools that automate exams, personalise learning, and offer data-driven insights. They are no longer limited to using traditional teaching approaches. Although artificial intelligence (AI) has enormous potential to improve teaching and learning, its successful implementation in classrooms depends on one crucial element: teachers' readiness. The chapter examines the pressing need for professional growth and organised teacher training in order to give teachers the abilities, self-assurance, and ethical awareness needed for teaching with AI. This chapter offers guidance for instructors to become flexible, introspective, and creative facilitators in the era of artificial intelligence by looking at important competencies, professional learning models, and real-world issues.

INTRODUCTION

A revolutionary change in the way teaching and learning processes are planned, carried out, and experienced in the twenty-first century is represented by the incor-

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poration of artificial intelligence (AI) in education (Kim, 2024). The justification for this integration is AI's capacity to improve administrative effectiveness, broaden access to high-quality learning options, and personalise education. Teachers may customise curriculum, exams, and support systems to match a range of individual needs by using AI-powered tools and platforms that can analyse students' learning habits, preferences, and progress in real-time (Lazarus et al., 2024). This promotes a more welcoming and stimulating learning atmosphere and aids in quickly filling in learning gaps. AI can also automate repetitive administrative duties like resource allocation, attendance tracking, and grading, freeing up teachers' time for engaging and effective teaching methods. AI-driven solutions facilitate sophisticated data analysis, content production, and knowledge management in research and higher education, encouraging creativity and multidisciplinary investigation (Karadag et al., 2023). Additionally, AI can democratise education by providing language translation services, intelligent tutoring systems, and virtual learning environments that transcend socioeconomic, linguistic, and geographic boundaries. The incorporation of AI becomes not only a technological breakthrough but also a strategic necessity to promote quality, equity, and lifelong learning in the current and future educational landscapes, as educational systems around the world work to give students skills they will need in the future and adjust to the quickly shifting demands of a globalised world (Yeadon & Hardy, 2024). In education, artificial intelligence (AI) is revolutionising the field. To fully utilise AI in education, a comprehensive and interdisciplinary framework for AI literacy is needed, one that can guide practice, research, and policy (Allen & Kendeou, 2024).

RATIONALE FOR AI INTEGRATION IN EDUCATION

Artificial Intelligence (AI) in education is not just a fad; rather, it represents a substantial shift in how knowledge is taught, learnt, and handled. Early computer-assisted instruction systems, such as PLATO (Programmed Logic for Automated Teaching Operations), were created in the middle of the 20th century to facilitate learning through preprogrammed instructions. This is when artificial intelligence (AI) first appeared in educational contexts. But as computing power, machine learning algorithms, and data analytics have increased in the twenty-first century, artificial intelligence (AI) has become a potent instrument that can revolutionise traditional teaching methods (Williamson, 2024). The growing need to address enduring issues in educational systems, such as huge class sizes, a variety of learner demands, restricted access to high-quality teaching resources, and administrative inefficiencies, is the justification for incorporating AI into education. AI provides cutting-edge technologies that help automate repetitive administrative and academic