


Chapter 12


AI Strategies for Inclusive Education Resources and Support

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ABSTRACT

This chapter explores how Artificial Intelligence (AI) supports inclusive education by improving resources, accessibility, and mental health for students with special needs. It discusses tools, such as adaptive learning platforms, assistive technologies, and mental health applications, that help educators address diverse learning needs. Using practical examples, case studies, and frameworks, this chapter offers actionable insights for educators and stakeholders to apply AI to equitable and accessible education. It also addresses challenges such as data privacy, resource disparities, and ethical concerns, while proposing collaborative approaches to ensure that AI solutions are inclusive and effective for all learners.

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INTRODUCTION

Defining Inclusive Education and Its Importance

Special educational provisions were created to accommodate children with special needs in the educational system. “Special Educational Needs (SEN) refer to learning difficulties that hinder a child’s academic, social, behavioral, or emotional development (Wedell, 2003). Children with SEN face greater challenges in understanding information, learning, and accessing educational resources than their peers. The Education Act 1996 categorizes SEN students into three groups: 1) visually impaired, 2) partially or fully deaf, and 3) those with learning difficulties (Alias et al., 2012).

Recognizing these challenges, global initiatives have been established to promote inclusive education as a fundamental right. The Salamanca Statement (United Nations Educational, Scientific and Cultural Organization [UNESCO], 1994) and the Biwako Millennium Framework for Action (BMF) (National Council on Disability Affairs, 2002) are foundational to this global movement. These frameworks have significantly influenced international policies and guided nations toward equitable education opportunities. Similarly, UNESCO guidelines and the United Nations 2030 Agenda for Sustainable Development highlight inclusion and equity as key principles of education policies, affirming the importance of human rights in education (UNESCO, 2017; United Nations, 2015).

Inclusive education ensures all learners, regardless of their needs, receive quality educational experiences within their local communities alongside peers (European Agency for Special Needs and Inclusive Education, 2016). Students with SEN should have equal opportunities to participate, learn, and grow in an environment that upholds their rights, fosters respect, ensures equity, demonstrates compassion, and preserves their personal dignity. They should also be able to achieve this alongside their peers. These principles are realized when SEN students are integrated into mainstream classrooms (Kefallinou et al., 2020).

The Role of Artificial Intelligence in Enhancing Inclusivity

Artificial Intelligence (AI) refers to advanced technologies such as machine learning, natural language processing, and robotics that mimic human intelligence (Ertel, 2024; Pedro et al., 2019). These technologies can work together to analyze complex patterns to enhance teaching, learning, and administrative tasks (Hwang et al., 2020; Soodtoetong & Rattanasiriwongwut, 2022). Increasingly, these technologies are being applied in inclusive education to support students with diverse needs. AI has transformed inclusive education by addressing equity gaps, creating

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