Chapter 7
The Role of Artificial Intelligence (AI) in Diagnosis and Intervention in Students With Disabilities and Special Educational Needs: Current Trends

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ABSTRACT

In recent years Artificial Intelligence (AI) has been used in the field of education settings but also in special education as well. The technologies that are implied can transform the process of learning and teaching and create inclusive environments for students who face a variety of difficulties in learning. The current review focuses on two dimensions: a) the use of AI in diagnosis and the use of AI in intervention for students with disabilities and special educational needs. We emphasize the advantages and disadvantages of using AI in diagnosis and intervention in special education. We also address ethical considerations for the use of AI in special education. Suggestions for the use of AI in diagnosis and intervention in Special Education are also developed to help teachers, professionals such as psychologists, speech therapists, occupational therapists, parents, students, and policymakers in developing an effective context in the use of AI in special education.

INTRODUCTION

Special education refers to specially designed instruction that is tailored to meet the unique needs of individuals with disabilities. This educational approach ensures that young children, school-aged children, and young adults have access to the supports and services necessary for their development and learning. The goal of special education is to prepare these individuals for further education, employment, and/or independent living by providing equitable access to instruction through various means such as early intervention, instructional accommodations, and modifications based on each student's strengths and needs (Harkins et al., 2025).

Special education services often include individualized education programs (IEPs) that outline the specific educational goals and supports for each student, ensuring that they receive appropriate and meaningful educational opportunities (Frey, 2019).

Artificial Intelligence (AI) definition is broad and has an interdisciplinary nature, spanning cognitive emulation, decision-making, and adaptability in various domains. A more general definition for AI is the ability of machines or systems to perform tasks that typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and natural language processing (Alsudairy & Eltantawy, 2024). AI in education refers specifically to supporting personalized learning, feedback, and guidance, aiming to simplify complex tasks and tailor educational content to individual learner needs (Alsudairy & Eltantawy, 2024).

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