


# Chapter 13


## Leading With Data: AI-Driven Decision Making in Special Education

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### ABSTRACT

*This chapter explores the potential of artificial intelligence in advancing data-informed decision-making in special education. By systematically collecting and analyzing large sets of student data, AI can identify performance patterns, predict challenges, and suggest tailored interventions—all of which enhance individualized learning outcomes and streamline administrative processes. This chapter highlights successful experiences with AI in school administration to demonstrate its practical impact on special education programs. However, the adoption of AI technologies also introduces critical considerations, including data privacy, stakeholder trust, and the need for professional development. The chapter underscores the importance of strategic implementation and inclusive engagement through a balanced evaluation of both the benefits and complexities of AI-supported decision-making. When thoughtfully applied, AI can promote more responsive and efficient special education services, empowering educators to address the diverse needs of students*

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*with greater precision and care.*

## **INTRODUCTION**

Artificial intelligence (AI) has evolved from a futuristic concept to an essential tool utilized across various industries. AI has significantly transformed fields such as healthcare, finance, and customer service through automation and data-driven insights. Globally, millions of individuals depend on AI to enhance efficiency, automate processes, and allocate more time to other tasks (Lametti, 2022). AI can be defined as a system wherein computers and machines collaboratively emulate logical human cognition (Tai, 2020). For individuals with disabilities, AI applications are particularly meaningful, as many utilize assistive technology features—such as speech-to-text—on smartphones and other technologically enabled devices to facilitate more effective interaction with their environments (Fernandez-Batanero et al., 2022). Indeed, most individuals engage with AI daily, often unknowingly, through routine activities such as online shopping, social media engagement, ride-sharing, travel planning, and internet searches.

In the education sector, AI has emerged as a transformative force and has influenced curriculum design, assessment of student progress, and personalization of learning experiences (Abdallah et al., 2024). The integration of AI within special education is especially promising. A critical area of exploration involves utilizing extensive datasets and advanced analytics, which enables school administrators to identify specific educational challenges, customize interventions for individual students, and optimize resource allocation effectively. This synergy between AI and special education has significant potential to enhance student outcomes and overall program efficacy (Marino & Vasquez, 2024).

## **BACKGROUND**

Data synthesis is foundational to effective educational practice, especially for special education administrators. This process involves collecting, compiling, and analyzing data from multiple sources to inform decision-making, policy formulation, and program selection (Bornstein et al., 2017). By synthesizing and disseminating data-driven findings, administrators can make informed decisions regarding staffing and programming (Hammond et al., 2020). This comprehensive approach provides valuable insights into program effectiveness, student outcomes, and areas requiring

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