

# Chapter 7

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

**Maria Georgiadi**

 <https://orcid.org/0000-0002-6846-0156>

*University of Crete, Greece*


**Dimitra Maria Tomprou**

*Frederick University, Greece*

**Ifigenia Inglezaki**

*University of Crete, Greece*

**Ilias Meramveliotakis**

 <https://orcid.org/0000-0002-8963-8953>

*Frederick University, Greece & Hellenic Mediterranean University, Greece*

**Stefanos Plexousakis**

*Frederick University, Greece*

DOI: 10.4018/979-8-3373-0573-8.ch007

## **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).

32 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/the-role-of-artificial-intelligence-ai-in-diagnosis-and-intervention-in-students-with-disabilities-and-special-educational-needs/387517](http://www.igi-global.com/chapter/the-role-of-artificial-intelligence-ai-in-diagnosis-and-intervention-in-students-with-disabilities-and-special-educational-needs/387517)

## Related Content

---

### AI-Enabled Predictive Analytics in Cybersecurity Insurance Optimising Risk Transfer and Digital Resilience

Wael Hadi, Ahmad al-Qerem, Ala Hamarshah, Amjad Aldweeshand Saad Alateef (2026). *AI-Driven Cybersecurity Insurance: Innovations in Risk, Governance, and Digital Resilience* (pp. 1-32).

[www.irma-international.org/chapter/ai-enabled-predictive-analytics-in-cybersecurity-insurance-optimising-risk-transfer-and-digital-resilience/387302](http://www.irma-international.org/chapter/ai-enabled-predictive-analytics-in-cybersecurity-insurance-optimising-risk-transfer-and-digital-resilience/387302)

### Learning in the Cloud, Drifting in the Mind: Reclaiming Focus and Psychological Wellbeing in AI-Driven Classrooms

Azza Mahmoud Gamal El Din (2026). *Transforming Policy and Practice Through AI-Driven Educational Leadership* (pp. 1-28).

[www.irma-international.org/chapter/learning-in-the-cloud-drifting-in-the-mind/404818](http://www.irma-international.org/chapter/learning-in-the-cloud-drifting-in-the-mind/404818)

### An Optimal Data Placement Strategy for Improving System Performance of Massive Data Applications Using Graph Clustering

S. Vengadeswaranand S. R. Balasundaram (2018). *International Journal of Ambient Computing and Intelligence* (pp. 15-30).

[www.irma-international.org/article/an-optimal-data-placement-strategy-for-improving-system-performance-of-massive-data-applications-using-graph-clustering/204346](http://www.irma-international.org/article/an-optimal-data-placement-strategy-for-improving-system-performance-of-massive-data-applications-using-graph-clustering/204346)

### The Role of Artificial Intelligence (AI) in Sustainable Marketing

Anshika Kumari, Ramji Nagariya, Maureen Primrose Laland Sunny Joseph (2024). *Modern Management Science Practices in the Age of AI* (pp. 71-90).

[www.irma-international.org/chapter/the-role-of-artificial-intelligence-ai-in-sustainable-marketing/355156](http://www.irma-international.org/chapter/the-role-of-artificial-intelligence-ai-in-sustainable-marketing/355156)

## Towards a Service-Oriented Architecture for Knowledge Management in Big Data Era

Thang Le Dinh, Thuong-Cang Phan, Trung Bui and Manh Chien Vu (2018).

*International Journal of Intelligent Information Technologies* (pp. 24-38).

[www.irma-international.org/article/towards-a-service-oriented-architecture-for-knowledge-management-in-big-data-era/211190](http://www.irma-international.org/article/towards-a-service-oriented-architecture-for-knowledge-management-in-big-data-era/211190)