

Chapter 20


Neuropsychological Interventions in Inclusive Education: Strategies for Supporting Cognitive and Emotional Development in Diverse Learners

Efthymia Efthymiou

 <https://orcid.org/0000-0003-0411-1720>

Zayed University, UAE

Dimitra V. Katsarou

 <https://orcid.org/0000-0001-8690-0314>

University of the Aegean, Greece

Maria Sofologi

 <https://orcid.org/0000-0003-0380-2220>

University of Ioannina, Greece

Alexandros Argyriadis

 <https://orcid.org/0000-0001-5754-4787>

Frederick University, Cyprus

Agathi Argyriadi

 <https://orcid.org/0000-0003-3935-0414>

Frederick University, Cyprus

Kalliopi Megari

 <https://orcid.org/0000-0002-5861-7199>

City College, University of York, Greece

ABSTRACT

This chapter discusses the neuropsychological interventions that can be effectively employed in inclusive educational settings to support the cognitive and emotional development of children with neurodevelopmental and chronic disorders. It emphasizes the importance of tailored interventions that address the needs of diverse learners, including those with autism spectrum disorders, ADHD, communication disorders, and other conditions. The chapter aims to provide educators, clinicians, and policymakers with evidence-based strategies that bridge neuropsychological research and inclusive classroom practices.

THE ROLE OF NEUROPSYCHOLOGICAL INTERVENTIONS IN INCLUSIVE EDUCATION

Realities within schools expose a persistent failure to accommodate the needs of students with neurodevelopmental disorders (NDDs). Disorders such as autism spectrum disorder (ASD), ADHD, and communication impairments present multifaceted challenges that exceed the capacity of traditional, curriculum-centered models. The continued reliance on uniform instructional methods and generalized accommodations reflects a system resistant to change. Embedding neuropsychological frameworks into inclusive education is a prerequisite for meaningful inclusion as they offer a critical perspective into the interchange of cognition, emotional regulation, and adaptive functioning, which tend to be routinely overlooked in conventional teaching.

Evidence demonstrates that students with NDDs experience significant deficits in communication, executive functioning, and social interaction, which are foundational skills to both academic achievement and emotional well-being. For instance, children with ASD or ADHD demonstrate poorer adaptive functioning than their neurotypical peers, in socialization and daily living skills (Scandurra et al., 2019). However, this research remains heavily skewed toward Western, resource-rich contexts, calling into question the cultural relevance and generalizability of many interventions. This oversight limits our understanding of how NDDs manifest across diverse populations, perpetuating inequity by excluding low-resource or culturally distinct communities from the evidence base that informs policy and practice. Moreover, the field's fixation on early intervention has led to the neglect of older students whose needs persist or worsen over time. Students who were misdiagnosed, overlooked, or denied access to early services are left without support as they advance through educational systems ill-equipped to address their challenges.

EXECUTIVE FUNCTION DEFICITS AND SOCIAL COGNITION

Neuropsychological evaluations reveal that executive function impairments, such as difficulties with working memory, cognitive flexibility, and inhibition control, are pervasive among students with ASD and ADHD (Corbett et al., 2009), leading to diminished academic performance and disruptive classroom behavior. Moreover, impairments in social cognition, such as challenges in interpreting emotional cues and understanding the perspectives of others, further complicate peer interactions and contribute to isolation (Simmons et al., 2019). While existing studies provide strong evidence of these deficits, there is less discussion on intervention scalability in large, diverse, or resource-limited classrooms. Addressing the scalability and practical implementation of interventions will advance their relevance and effectiveness across different educational settings.

This chapter explores evidence-based strategies for improving emotional regulation and social skills as integral components of inclusive education. The implementation of structured interventions, such as social-emotional learning (SEL) programs and targeted cognitive-behavioral therapies (CBT), mitigates behavioral difficulties and improves students' capacity to navigate social relationships (Walker, 2016; Kearny et al., 2014). However, the practical application of these interventions can be hindered by barriers such as limited resources, insufficient training, or cultural incompatibilities. Therefore, this chapter also provides practical frameworks, specific examples, and step-by-step strategies to support educators and clinicians in effectively overcoming these barriers. By aligning neuropsychological perspectives with

36 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/neuropsychological-interventions-in-inclusive-education/376082

Related Content

Stress and Immunity Mechanisms and Interventions

Sneha Pawarand Rita Sangtani (2025). *Research Methodologies and Practical Applications in Psychoneuroimmunology* (pp. 43-54).

www.irma-international.org/chapter/stress-and-immunity-mechanisms-and-interventions/372762

Neuropsychological Development and Assessment From Infancy to Adolescence

Evanthia Smyrliand Kalliopi Megari (2025). *Clinical Applications of Pediatric Neuropsychology from Infancy to Adolescence* (pp. 23-42).

www.irma-international.org/chapter/neuropsychological-development-and-assessment-from-infancy-to-adolescence/376064

Role of Artificial Intelligence in Modeling Psychometrics to Detect Neurodevelopmental Disorders: Use of AI to Understand Human Behavioral Aspects

Navjot Singhand Amarjot Kaur (2020). *Interdisciplinary Approaches to Altering Neurodevelopmental Disorders* (pp. 213-227).

www.irma-international.org/chapter/role-of-artificial-intelligence-in-modeling-psychometrics-to-detect-neurodevelopmental-disorders/254678

A Review of Supportive Computational Approaches for Neurological Disorder Identification

Dulani Meedeniyaand Iresha Rubasinghe (2020). *Interdisciplinary Approaches to Altering Neurodevelopmental Disorders* (pp. 271-302).

www.irma-international.org/chapter/a-review-of-supportive-computational-approaches-for-neurological-disorder-identification/254681

Tremor Identification Using Machine Learning in Parkinson's Disease

Angana Saikia, Vinayak Majhi, Masaraf Hussain, Sudip Pauland Amitava Datta (2019). *Early Detection of Neurological Disorders Using Machine Learning Systems* (pp. 128-151).

www.irma-international.org/chapter/tremor-identification-using-machine-learning-in-parkinsons-disease/230114