

Chapter 1

Integrated Support of Students With Autism Spectrum Disorders and Learning Disabilities

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ABSTRACT

This chapter outlines the integrated approach to support children and young adults diagnosed with learning disabilities and autism spectrum disorders (ASD). In this context, the authors, first, discuss the legislative background providing legal basis for the disability support in educational environments. They, further, address psychological and neurological aspects of learning disabilities and ASD diagnostics and consider how legislative and neurological issues influence special education methods, counseling, and instructional technology support. The educational tools addressed include mobile devices and applications, virtual reality, and robotics. The chapter concludes with a report on the development of college-level course in instructional technology, intended for technology facilitators and teachers working with the ASD students. The case study focuses primarily on the use of the affordable and popular LEGO robots. The holistic approach to support of those with disabilities, outlined in the chapter, combines educational leadership issues, psychological and job counseling, special education methods, and instructional technology.

INTRODUCTION

The topic of autism attracted the author due to his long-term involvement in the educational process, at the K-12 and college levels, as a department chair, Instructional Technology coordinator and an instructor who has taught more than thirty different courses. Some students, pursuing Instructional Technology degree, especially those involved in special education, need competencies in educational technologies

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and tools for students with disabilities. Moreover, as a result of the legislative changes and improved diagnostic techniques, institutions of higher education enhanced their overall requirements to students seeking teaching or related certifications (such as Instructional Technology Specialist) for those within the K-12 system and beyond; the changes in state-level requirements underlined the emphasis on serving students with disabilities at the federal level, from the landmark *Public Law 94-142, The Education for All Handicapped Children Act* (EHA) to *PL 108- 456 The Individuals with Disabilities Education Improvement Act* of 2004 (IDEA, 2004).

At the same time, the educational and counseling support for learning disabilities and Autism Spectrum Disorders has been gaining attention in academic and clinical communities due to improved diagnostic techniques and continuing legislative changes. The key legislative landmarks go back to *Public Law 94-142, The Education for All Handicapped Children Act* (EHA), passed in 1975 by the United States Congress. In 2004, this law, intended to ensure equal access of all children to public education, was reauthorized as *The Individuals with Disabilities Education Act* (IDEA). The IDEA law ensures that children with disabilities are guaranteed access to a free and appropriate education (FAPE) in the least restrictive environment (LRE). An important element of the original 1975 law was the concept of an Individualized Educational Plan (IEP), allowing to modify the educational curriculum in order to meet the needs of students with disabilities. As a result of legislative changes at the federal level, the state departments of education across the United States have been introducing new guidelines and requirements for special education teachers and instructional technology specialists; for example, the Pennsylvania Department of Education introduced additional special education requirements (competencies) for K-12 teachers and those seeking certification as instructional technology specialists.

The legislative changes have been evolving hand in hand with the development of diagnostic techniques in the medical research community. Under the Section B of IDEA, a child with a disability must be classified under one of the following categories such as *Autism, Deaf-blindness, Deafness, Emotional Disturbance, Hearing Impairment, Intellectual Disability, Multiple Disabilities, Orthopedic Impairment, Other Health Impaired, Specific Learning Disability, Speech or Language Impairment, Traumatic Brain Injury, and Visual Impairment* (IDEA, 2004). Among the aforementioned categories, the autism-related group – Autism Spectrum Disorders (ASD) – has become the fastest growing developmental disability, largely due to enhanced depth and breadth of symptomatic analysis accompanied by greater administrative awareness and improved data collection techniques. The most recent advances in disability diagnostics are reflected in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5, 2013). As a result, the diagnosed prevalence of autism in U.S. children increased by 119.4 percent from 2000 (1 in 150) to 2010 (1 in 68) (“Autism Society,” n. d.). It is also important to note that some of the physical and mental ‘disorders’ that do not qualify a student under the IDEA act still need to be addressed in the general classroom environment, since affected individuals may be covered by the *Rehabilitation Act 1973*, protecting the right of handicapped individuals. Apart from the spectrum disorders, common learning disabilities include Dysgraphia, Dyslexia, Discalculia and Auditory Processing Disorder. Some conditions, such as Attention Deficit Disorder, overlap with the ASD symptomatic.

Accordingly, the increased attention to ASD as a disability group was accompanied by the growing research focused on potential links between the developmental and learning aspects of ASD, with the new special education strategies specifically being developed for those on the autism spectrum. While Harwell and Jackson (2008) note that “prior to 1937 there was no recognition of learning disabilities” (p. 2), the IDEA act explicitly defines learning disability as “a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, which disorder may manifest

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