

Chapter 13

A Longitudinal Case Study on the Use of Assistive Technology to Support Cognitive Processes across Formal and Informal Educational Settings

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ABSTRACT

This chapter describes a chronology of increasingly sophisticated technological supports and interventions used across complex formal and informal educational settings with a 10th grade female student who has documented learning challenges. A progression from low technology devices to computerized, high technology assistive devices are employed to provide access to materials and to academic information over a period of 10 years. Understanding both the inner and outer context of this learner's environment provides the reader with a background to process the progression of the use, improvement, and availability of assistive technology in the life of this user.

PURPOSE

The National Center for Education Statistics (2008a; 2008b) cites that of the 49.8 children and youth enrolled in public schools, some 6.7 million receive special education services for classroom instruction and during assessments. While assistive technology (AT) can be included in an *individualized educa-*

tional plan (IEP), parents and adult caregivers can also re-purpose common technology applications to support the learner. The purpose of this discourse is to present a chronology of one parent's efforts to utilize both low and high technology across formal and informal educational settings over a ten-year period. Impact of legislative actions on the education of the student serves as the backdrop through which the affects of AT on the student's cognitive process is viewed.

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THEORETICAL FRAMEWORK

The female learner in this case study was born in 1992 and major pieces of legislation that define the context of her learning environment started in 1965 when the Elementary and Secondary Education Act (ESEA) was initiated. This legislation did little in terms of addressing accommodations to assist learners with special needs. It did, however, mandate the annual assessment in reading and mathematics of students who received services under Title I. Following ESEA for 10 years, children enrolled in special education classes were segregated from general education classes, save for classes in art, music, and physical education (ESEA, n.d.). During this time, students with significant cognitive disabilities were segregated from general education classes. The first legislative move toward equity for students with disabilities occurred in 1975 with the passage of Public Law 94-142 (Education of All Handicapped Children Act), codified as IDEA (Individuals with Disabilities Education Act) in 1997. Congress mandated that for states to receive federal funds, they must develop and implement policies that assure a free appropriate public education (FAPE) to all children with disabilities. The state plans must be consistent with the federal statute, Title 20 United States Code Section 1400 et seq. (20 USC 1400).

Assistive technology appears in the law in 1992 with the passage of the Technology Related Assistance for Individuals with Disabilities Act. This act provides financial support and assistance to states to support system change and advocacy for AT, which “it further defines any item, piece of equipment or product system, whether acquired commercially off the shelf, modified, or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities [20 U.S. C. Chapter 33, Section 1401 (250)].”

In 1994, accountability for student progress appears as the Improving America’s Schools Act of 1994 (IASA). This law shifts the focus of test-

ing from individual student gains to looking at all students against state standards, and requires that valid and reliable tests be provided in reading/language arts and mathematics at least once in each of three grade spans from grades 3-12. In 1995, IDEA reinforced the requirement for states to provide FAPE to children with disabilities in the least restrictive environment (LRE). In addition, it empowers parents and the local educational agency to make appropriate decisions about what constitutes Legislation of 1997 through 2001 applied only to students enrolled in public schools. Children in parochial or private institutions did not receive benefit from these laws. Emma is one such child.

The Assistive Technology Act of 2004 ensures that individuals with disabilities have access to the technologies they need to help them in school, at home, at work, and in the community. The Individuals with Disabilities Improvement Act of 2004, passed by Congress, was designed to improve learning outcomes for infants, toddlers, children, and youth with disabilities; made the language and intent of IDEA 2004 consistent with NCLB; and ensured access to technology for individuals with disabilities.

Federal legislation ensures access for public school students and for students with disabilities in private schools, however, these protections and services are not mandated. Part E of Title XIV—Uniform Provisions for the Participation of Private School Students requires Local Education Agencies (LEA) to “service eligible private school children who reside in the LEA” (USDE, n.d., p. 1 ¶ 3). Although this section of the law requires “timely and meaningful consultation” between the LEA and the private school, Part B of IDEA does not require “parentally placed students with disabilities to receive services provided to students enrolled in public schools” (USDE, nd, p. 3 ¶ 2). Further complicating the situation is that each state sets eligibility requirements for services to children and youth with disabilities. Emma did not receive the maximum benefit from federal

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