Chapter 2
Discovering Basics:
Assistive Technology (AT)
Implementation and Best Practice

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ABSTRACT

A review of special education law and AT will provide the context for teaching and learning in the inclusive classroom. Following, foundations of AT and effective implementation strategies at the classroom level will be discussed. The process by which teachers can be supported in integrating technology tools into learning tasks will be reviewed, and the importance of making emotional connections and providing time to practice and share in an environment where failure is seen as an opportunity for growth will be provided. Finally, systemic implementation issues and strategies for success will also be shared.

INTRODUCTION

Preparing new teachers for the inclusive classroom is complex. One critical component of this preparation is the fostering of a deep understanding of effective implementation of assistive technology (AT). Those who embrace this effort are faced with a set of challenges that are not found in traditional technology integration systems or professional development offerings. In this chapter, we will expand and update the work of a previous publication (Courduff, Duncan, & Gilbreath, 2013), by reviewing the basics and identifying unaddressed perspectives that impede technology implementation within the inclusive classroom.

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**Keywords:** Assistive technology, augmentative and alternative communication, Individuals with Disabilities in Education Act, universal design for learning.

**BACKGROUND**

**Law and Assistive Technology**

The Individuals with Disabilities Education Act (IDEA) ensures that students who have special needs receive early intervention and services that support learning in the least restrictive environment (Blackhurst, 2005). Although students with special needs have been integrated into mainstream school environments for quite some time, technology tools may not be ubiquitously integrated into the teaching of these students. In considering the use of technology in special education, it might be helpful to review the basic terminologies used within this population. Assistive technology is an umbrella term that encompasses any technology device, program, website, or other resource that enables students with special needs to have fair and appropriate access to curriculum and learning of content (Edyburn, Higgins, & Boone, 2005).

By law, technology resources must include accessibility features that enable users to access programs and communicate regardless of disability (see http://idea.ed.gov/explore/home). Common accessibility features include screen readers, text-to-speech, and speech-to-text options. These are found within the general settings on any electronic device.

Assistive technology resources must always be considered within the context of the IEP process for students with disabilities. Additionally, the Technology-Related Assistance for Individuals with Disabilities Act of 1988 (amendment 1990), requires that AT devices and services be considered through ongoing evaluation of student needs; selection, purchase, lease, or acquisition technology resources; design, customization, and maintenance of technology devices; and training and technical assistance of all stakeholders involved in the education of the student including, but not limited to, the student, teacher(s), support personnel, administration, and family members (Blackhurst, 2005).

Augmentative and Alternative Communication/Assistive Augmentative Communication (AAC) technologies are specific devices or applications supporting communication that can improve levels of independence, interaction, behavior, and learning. Until very recently, AAC device options have been expensive and bulky. The evolution of mobile devices has changed this. Many applications have been released that enable AAC features on mobile devices at a relatively low cost.

Universal design for learning (UDL; Edyburn, 2010) was developed as a means to address the accessibility of curriculum for diverse learners. Universal design for learning is built upon a framework that uses:

1. Multiple means of representation to give learners various ways of acquiring information and knowledge;
2. Multiple means of expression to provide learners alternatives for demonstrating what they know; and
3. Multiple means of engagement, to tap into learners’ interests, offer appropriate challenges, and increase motivation (Zabala, 2004).