

Chapter 23

Assistive Technology for Teacher Education: From Research to Curriculum

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ABSTRACT

The purpose of this chapter is to provide teacher educators with current research related to assistive technology (AT) in K-12 schools. The first two sections present findings from the literature, first related to providing AT to culturally and linguistically diverse populations within a family context, and secondly to helping students with learning disabilities use AT for writing. Implications for practice are discussed. This chapter concludes with an overview of a curriculum model for training preservice teachers to become familiar with AT across the lifespan, choose appropriate AT for their students, and be able to practically use AT in the classroom.

INTRODUCTION

Teacher educators can instruct preservice teachers using hands-on methods and training to effectively integrate assistive technology (AT) products into the classroom for their students that have disabilities. This chapter discusses some of the methods used.

The first part of this chapter is a review of literature on AT for culturally and linguistically diverse (CLD) populations of students. Augmentative and alternative communication (AAC) for students from CLD backgrounds and their families is discussed.

Teacher educators are given insight on training preservice teachers who work with CLD students that use AT.

The next section deals with a review of the literature and focuses on AT for students with learning disabilities (LDs). Students with LDs often lack psychological motivation to learn to write due to previous failures in school. AT is considered by some, one method to mitigate psychological barriers for students to learn to write proficiently (Zhang, 2000). These benefits will be discussed.

The last section describes the curriculum of the AT orientation program in the College of Education at the University of Texas in Austin (UT). The pro-

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gram developed at UT introduces preservice teachers to some of the AT they are likely to encounter in schools. The AT orientation program utilizes hands-on activities to ensure active participation of preservice teachers. The effectiveness of the program is determined from a survey students complete at the end of the training. This section provides an overview of how preservice teachers can be trained to use AT in the schools.

To ensure that students with disabilities receive the necessary services, current legislation requires that service providers have AT competencies (Tech Act, 2004; CEC, 2003). However, research suggests that many preservice teachers are not well trained to provide services on assessment, selection, and application of AT (Bausch & Hasselbring, 2004). The need for an AT orientation program as a prerequisite for preservice teachers who work with students with disabilities is vital for the success of these students in the classroom. The selection process for appropriate AT for students is made increasingly more difficult due to the rapid development of new technology (Bausch & Hasselbring, 2004). When selecting appropriate AT for students with disabilities in the classroom, technology that teachers and administrators are already familiar with is usually much more of a deciding factor in the selection process than newer AT that may be more suitable (Bausch & Hasselbring, 2004). However, even if teachers have a full range of available technology, but do not have adequate training to know which device to select, there may be reduced benefit to the student.

This chapter also details ways that colleges or universities can create a training center utilizing appropriate curriculum and up-to-date technology. The idea of the training center is to better ensure that preservice teachers enter schools with sufficient background and hands-on experience to meet the AT challenges of diverse learners.

RESEARCH I

Assistive Technology for Culturally and Linguistically Diverse Populations

It is important to consider AT for teacher preparation within CLD populations. The term CLD is used to refer to individuals or populations that are non-white, of ethnic origins outside of the United States, or with limited English language. In Binger and Light's (2006) study of demographics, it was found that 15% of preschoolers receiving AAC services were of non-white ethnicity. Because of the increasing heterogeneity of the demographics of students served in special education programs in public schools in the United States, this section addresses some of the perceptions and possible misconceptions of families from CLD backgrounds who have children with a disability receiving AT support.

Because of the changing demographics of the population, today's teacher will more likely teach in a class that is not homogeneously White. According to Utley, Delquadri, Obiakor, and Mims (2000), compounding this population statistic, only 14% of special education teachers are from CLD backgrounds, while over 32% of the students receiving special education services are from CLD backgrounds.

A large component of AT is AAC. Augmentative and alternative communication assists people with more severe communication disabilities, providing them the tools to participate more fully in such daily activities as interpersonal interaction, learning, education, and personal care management. According to Bryant and Bryant (2003), an AAC system refers to an individual's complete functional communication system that includes a communicative technique, a symbol set or system, and a communication/interaction behavior. When AAC users are from CLD backgrounds, their com-

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