

Chapter 17

Technology–Assisted Learning for Students with Moderate and Severe Developmental Disabilities

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ABSTRACT

For students with moderate and severe developmental disabilities, including autism spectrum disorders and intellectual disability, technology can provide critical support for learning and life functioning. A growing body of research demonstrates the benefits of technology for these students to acquire academic skills, improve social functioning, and perform tasks of daily living. This chapter provides a description of this population and their learning needs. The research on technology applications for students with developmental disabilities is reviewed and synthesized. The review includes literature on technology to assist instruction and to provide options for student responding. Examples are provided of how technology can be applied to both instruction and assessment.

INTRODUCTION

Technology has transformed everyday life for many people in the 21st century, but for individuals with moderate and severe developmental disabilities it has especially opened doors of opportunity

not previously available. Multiple studies have demonstrated that students with moderate and severe developmental disabilities can benefit from technology in learning academic skills (Knight, McKissick, & Saunders, 2013; Pennington, 2010), managing social skills (Ramdoss, et al., 2011), or

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performing daily living skills (Mechling, Gast, & Seid, 2010). Technology can also promote job-related learning (Morgan & Horrocks, 2011).

Ironically, students with developmental disabilities may not access these opportunities to the extent students who are nondisabled do. While the use of technology in schools may be as high as 98% of students overall (National Center for Education Statistics, 2008), school access for students with intellectual disability may be much lower (Edyburn, 2013; Wehmeyer, Smith, Palmer, & Davies, 2004). Educators need more information on how technology can be used to assist instruction and promote new opportunities for learning.

Technology also can offer a means for students with developmental disabilities to show what they know. All states are required to provide alternate assessments for students who cannot participate in the state's general assessment with or without accommodations. Students with moderate and severe disabilities often are candidates for these alternate assessments. In contrast, Towles-Reeves, Kearns, Kleinert, and Kleinert (2009) found from 17-26% of these students only had emerging symbolic communication and another 8-11% were presymbolic. As Kleinert, Kearns, and Kleinert (2010) note communication is critical to learning and demonstrating achievement in state assessments. Technology can be crucial to promoting communicative competence for students who lack speech.

Given the proliferation of technology in today's world and its potential to promote learning and quality of life for individuals with moderate and severe developmental disabilities, the need exists to identify the research on how to use technology effectively with these students. This chapter includes a brief overview of the population, research on technology for this group of students, and examples of how the technology can be applied in interventions. The implications for practice, including assessment, will also be reviewed. The objectives of this chapter are:

1. To provide a brief overview of students with moderate and severe developmental disabilities and their learning characteristics that may be relevant to technology use.
2. To synthesize the research on the use of technology with this population focusing on academic, social/ communicative, and daily living skills.
3. To offer examples of how this research can be used to plan instruction and assessment.

BACKGROUND

Before identifying effective technology applications, it is important to clarify the population of focus and the learning characteristics that are relevant to planning for technology use. This chapter focuses on the subgroup of students with disabilities who participate in alternate assessments. Students in these alternate assessments work towards alternate achievement of their states' academic content standards. To define this alternate achievement, educators target content from the students' grade level, then prioritize specific standards and translate these into learning targets with a lower level of complexity. For example, if the 4th grade expectation is for students to identify the author's point of view after reading a chapter book, the learning target for alternate achievement may be to identify the author's point of view by using a simplified summary of the book that is read aloud. The student may also respond by selecting from an array of answers rather than generating a response. Students who take alternate assessments are sometimes referred to as the "1%" in the United States because schools can report scores based on alternate achievement standards for up to 1% of their school population (U.S. Department of Education, 2003). One way to think about students with disabilities broadly is to consider whether they are working towards grade level or alternate academic achievement in

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