

## Chapter 62

# Implementing iPad and Mobile Technologies for Students with Intellectual Disabilities

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### ABSTRACT

*This book chapter describes implementation implications of using the iPad and other mobile technologies with students (birth to adult) with intellectual disabilities. iPad and other mobile technologies offer many built-in features which facilitate their use for students with disabilities, particularly students with Intellectual Disabilities (ID). This chapter details ways that mobile technology can be used to make school and other environments (e.g., home, social) more accessible to students with ID. The theoretical framework underpinning this chapter is Universal Design for Learning (UDL), and it is applied to research-based practices for students with ID. This forms a solid base from which to examine: (a) available mobile applications (apps), (b) how apps can be used to support students with ID in accessing the curriculum, and (c) how teachers can use a framework to review and choose apps for their students.*

### INTRODUCTION

Students with Intellectual Disabilities (ID; formerly mental retardation; in UK also referred to as learning disabilities) are identified by significant delays in cognitive functioning and adaptive behaviour (IDEA, 2004), with the adaptive deficits limiting functioning in one or more activities of daily life, across multiple environments (American Psychiatric Association, 2013). There are three main domains of adaptive functioning: (a) conceptual (academic), (b) social, and (c) practical (American Psychiatric Association,

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2013). The conceptual domain includes academic skills, such as reading, math reasoning, problem solving, judgement in novel situations, etc. The social domain covers friendship abilities, social judgement, and for example awareness of other people's thoughts and feelings. The practical domain contains skills like learning and self-management across life settings, money management, and self-management of behaviour (American Psychiatric Association, 2013).

As with all disability classifications, the range of abilities among students identified with ID varies greatly. The extent of needed support exists on a continuum, ranging from intermittent to pervasive (American Psychiatric Association, 2013). Educators need to be aware of the individual needs of their students, since many students with ID require extra supports in order to make educational and social advances. For example, some students with intellectual disabilities may require support in the areas of reading, counting, note-taking, communication, and memory (Glidden, 2008). Students with the most severe intellectual disabilities, who are often referred to as 'students with high support needs' (Lyons & Cassebohm, 2012) or 'students with profound multiple disabilities' (Arthur-Kelly et al., 2008), constitute a specific group of learners. These students need extensive support in all areas of life (including eating, dressing or hygiene), and are dependent on others. Some of these students develop challenging self-stimulatory behaviours (Beirne-Smith, Patton, & Kim, 2006). Self-stimulatory behaviours are repetitive and appear to observers to serve no function. These behaviours become challenging when they are injurious, impede the learning of the student or the learning of others. Furthermore, severe intellectual disabilities are often combined with other disabilities, such as sensory impairments or physical disabilities (Heward, 2013).

The use of technology is one of the ways that supports can be provided to students of all ages with disabilities. Mobile technology has built in accessibility features that allow the user to change font, listen to text spoken out loud, and alter the motor demands of using the device; these features allow teachers to support students in learning through modalities that suit each individual best (Cumming, et al., 2014). However, Wehmeyer et al (2008) found that students with intellectual disabilities have limited access to technology and that technology is generally underused by this population. Palmer et al (2012) conducted a study and found that technology use among students with ID had remained steady or only slightly increased from a study conducted from 1999 to 2012. Part of the reason for this trend may be that educators do not have the knowledge base necessary to implement technology with their students (Aslan & Reigeluth, 2011). Educators may be given iPads for use in their classrooms, but are unsure how to integrate iPad applications into their curriculum.

The chapter will introduce Universal Design for Learning as the underpinning theoretical framework for using mobile technologies for students of all ages with ID. The existing evidence-based learning and teaching practices recommended for students with intellectual disabilities will be described and then the authors will identify how mobile technologies can enhance the education of people with disabilities. The authors will present findings of preliminary studies which demonstrate why incorporating mobile learning into the daily lives of students with ID is important. Finally, these practices will be aligned with recommendations of how to effectively incorporate mobile technology into the learning and teaching of this population.

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