Chapter 20
Aligning iPad Applications with Evidence–Based Practices in Inclusive and Special Education

Therese Cumming
University of New South Wales, Australia

Cathi Draper Rodríguez
California State University – Monterey Bay, USA

Iva Strnadová
University of New South Wales, Australia

ABSTRACT

Special educators globally are adopting mobile technologies such as the iPad for use in classrooms for everything from textbook replacement to assistive technology. Despite the devices' large potential for individualizing teaching, learning, and communication, these are relatively new technologies, and the evidence base to support their use as teaching and learning tools in special education is scarce. This chapter discusses a theoretical framework and several methods that can be used to support the use of iPads to assist students with disabilities. It also details the potential uses of iPads and their corresponding applications for students in special education.

INTRODUCTION

Mobile technologies such as the iPhone, iPod, and iPad have become increasingly popular and serve many more functions than just making phone calls and texting. This popularity has penetrated the field of education, with many schools abandoning rules that ban cell phones and other devices,

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instead embracing the devices with "Bring Your Own Technology" programs. The iPad in particular has become increasingly prevalent, with many schools using the devices to replace textbooks (Apple Press Info, 2012). Johnson, Adams, and Haywood (2011) list tablet devices such as the iPad as one of the six technologies that will emerge in mainstream education within the next one to five years in their *Horizon Report*, which identifies and describes technologies that are likely

to have a large impact on teaching, learning, and research globally.

Nowhere in education has the iPad been more embraced than in special education. Parents, teachers, and students themselves speak about the overall utility of the device, and how it can be used as assistive technology for everything from communication to literacy and beyond. One only has to do a search of the World Wide Web to see the myriad of blogs that describe ways that the iPad and its corresponding applications (apps) have helped both children and adults with disabilities live more inclusive lives, both in and out of school. These blogs, along with Internet sites that describe and review apps for students with disabilities are too numerous to list, but their existence alone is evidence of the iPad's widespread adoption by the special education population.

Since tablets are a fairly recent technology, research into their use in education, and more specifically special education, is in its infancy. One must look to studies in mobile educational technology in order to find the beginnings of an evidence base supporting the use of iPads as an educational tool for students with disabilities. Most of the studies conducted in this area have been conducted with students with autism and intellectual disabilities, and the devices have been used as communication devices or as video modeling tools (Chiak, Fahrenkrog, Ayres, & Smith, 2010; Hammond, Whatley, Ayres, & Gast, 2010; Flores, Musgrove, Renner, Hinton, Strozier, Franklin, & Hil, 2012).

Chiak et al. (2010) evaluated the effect of video modeling delivered via an iPod, combined with a system of least prompts, to assist elementary students with autism in inclusive settings in transitioning during school activities and locations. Results of this study indicate that the intervention had a significant positive effect on all of the students' independent transitioning. Using the iPod rather than a television or computer to deliver the intervention was seen as very positive, as the device's portability allowed for the interven-

tion to be delivered anywhere, including general education settings.

Hammond et al. (2010) studied the use of video modeling to train students with intellectual disabilities to use the iPod and found that the device was reinforcing and age-appropriate for middle school students with intellectual disabilities. This is an important finding as using an iPod is an appropriate leisure time activity that the students' same-age peers in regular education engage in. Additionally, once students master the navigation of the portable technology, they could potentially use the devices independently for learning tasks.

Flores et al. (2012) compared the effects of an iPad and a picture-based communication system on the communication rates of five elementary school students with autism. The findings lend initial support for the iPad as a communication device. When it came to preference, anecdotal data indicated that the students preferred using the iPad to the picture system. The teachers also preferred using the iPads, reporting they were easy to use, required less preparation time and materials, and increased the speed of the students' communication. In a similar study, Achmadi (2010) used a multiple baseline across subjects design to investigate teaching adolescents with autism to use an iPod to make multi-step requests. The participants learned to use a speech-generating application on the iPod to make the requests. The study's results suggested that adolescents with autism learn to successfully use an iPod to make multi-step requests.

iPads also have the potential to facilitate learning in adults with disabilities, but research in this area is still in its infancy. There is not as much anecdotal evidence available that describes the benefits of using the devices with this population. There are however a few studies currently being conducted in this area. For example, Strnadová, Cumming, Knox, and Parmenter (2011) focused on using iPads as an assistive technology supporting research training of inclusive research team consisting of four academics and four ageing

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