Chapter 13
Fostering Early Literacy Skills with Technology

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ABSTRACT

In this chapter, the authors provide an overview of research literature for technology use with emergent-stage literacy learners. They review the overall research on technology for young children, then look at literacy and the role of technology in the classroom. The authors outline the development of literacy skills in the emergent stage (commonly defined as birth to age five). Finally, they use the framework established by the previous studies and the developmental sequence of the emergent stage to critically evaluate several literacy apps and e-books aimed at these learners. The authors finish with a selection of resources for selecting and using technology to foster these early literacy skills.

INTRODUCTION

The use of technology as a support for knowledge and skills development for very young children is an emerging field of study. From debates about the amount of 'screen time' – time in front of a TV or computer monitor, to the definition of play as an unstructured, unplugged activity, early childhood researchers have traditionally sought to de-emphasize the role of technology in the lives of young children (Brown, 2011; NAEYC, 2012).

However, recent research has shown that even very young children are surrounded by, and are interacting with, technology on an unprecedented level. Glaubke (2007) reported that 56 percent of children aged three to five years have used a computer by themselves, 64 percent can point and click with a mouse, and 37 percent can turn the computer on by themselves. Even more startling, most of these children have acquired the skills for these tasks by age three and a half. More recently, Common Sense Media (2011) reported that over

half of young children in the United States have access to an iPhone, iPad, or a similar device. Children who have read an e-book or digital book (e-book refers to a simple electronic version of a text, digital book includes multimedia or interactive elements) almost doubled from 2010 to 2012 (McGuire, 2012).

The plethora of available technology and the early immersion in its use has led to the term *digital natives* to describe this generation of children (Prensky, 2006). Toddlers and preschool-aged children will be surrounded by technology and opportunities to interact digitally that are inconceivable to those from previous generations. Merely seeking to limit exposure or 'screen time' is not a sufficient goal. Our responsibility to this generation of children is best stated by the International Reading Association position statement, "To become fully literate in today's world, students must become proficient in the new literacies of the 21st century technologies. As a result, literacy educators have a responsibility to effectively integrate these new technologies into the curriculum, preparing students for the futures they deserve" (p.1).

The National Association for the Education of Young Children (NAEYC) recently joined with the Fred Rogers Foundation to issue a joint position statement on the use of technology in education programs for children birth to age eight. The statement acknowledged the potential for interactive media to enhance learning experiences, while cautioning early childhood professionals to base their support and use of such materials on developmentally and pedagogically appropriate foundations. Children should be developmentally ready for the content of the materials, as well as able to successfully manage the technology. As with any other learning tools, how and when technology is used will determine its ultimate impact on literacy skills.

This chapter will review the literature on technology use by young children. We will then outline the known guidelines for selecting specific technology tools. We will provide examples by reviewing the development and expected skills of the emergent stage of literacy. Finally, we will provide an idea of what these tools would look like used in a typical classroom.

BACKGROUND

Technology Learning in the Early Years

Research from decades of public television suggests that media resources, when they have been carefully designed, can be very effective tools for teaching and learning (Krikorian, Wartella, & Anderson, 2008). Students show increased motivation for literacy tasks when technology is incorporated and are engaged with digital texts (Burnett, 2010).

More recent research on media resources, in the form of multimedia books, suggests that they may improve accessibility to books that are beyond a child's reading level; and encourage development in concepts of print, vocabulary, and comprehension (Li, Atkins, & Stanton, 2006; Matthew, 1996; McKenna, Labbo, Conradi, & Baxter, 2011; McKenna & Zucker, 2009). Specifically, they have been found to increase language development (Lankshear & Knobel, 2003).

At this point in time, many experts in early childhood and literacy are particularly favorable toward the iPad as an appropriate and promising technology for emergent stage learners (Hutchison, Beschorner, & Schmidt-Crawford, 2012). "[T]he iPad may help teachers meet traditional literacy goals while also providing students with opportunities to learn the new literacies of the 21st-century

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