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Realizing the Potential of e–Books in Early Education

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INTRODUCTION

E-books hold a prominent place in today's world. The largest market for electronic applications are those labeled "educational," with the majority of those targeted to audiences ranging from three to seven years of age (Shuler, 2012), of which many are classified as e-books. Although e-books are now abundantly available, there is evidence of some hesitance of parents and teachers to share these media with young children in ways similar to uses of printed books.

Recently, the Pew Research Center (2013) documented that 81% of parents believe printed books are better suited than e-books when it comes to reading with their young children. When the numbers reported by Zickuhr (2013), though, are examined more closely, we see that e-books are preferred over printed books on many other measures: for their ease of selection, accessibility, and portability, but not for sharing in adult-child dyads (see also Chiong, et al., 2012).

To an extent, parents' perceptions about printed books and electronic books are mirrored in school settings. In a recent webinar with approximately 200 early childhood administrators, educators and support staff, Roskos and Brueck (2013) discovered that 75% of participants did not use e-books in their classrooms. Of those that did use e-books already, 16% accessed them via the Internet on a desktop computer and 9% used a tablet. Also, 88% of participants believed that e-books could support students in ways that were *both* similar to and different from supporting children with printed books. So it appears teachers are largely interested in learning how to incorporate e-books into early childhood and the primary grades, but most are not yet doing so.

Why, then, are some parents and teachers hesitant to share these media with young children? This article aims to (1) present a historical perspective on e-books in early education; (2) illustrate ways in which e-books are and are not developmentally appropriate materials for young children; and (3) point to future directions for research so that e-books can truly become tools to innovate literacy learning in preschools and the primary grades.

BACKGROUND

Defining the E-Book

In many ways, what "counts" as an e-book is ill-defined. Buckleitner (2011) argues that e-books are different from printed books and that an e-book's interactivity ranges from essentially non-interactive (e.g., the basic PDF document) to highly-interactive with an array of cutting-edge hypermedia embedded into the electronic "pages" (see the keyword section of this article for some additional terms and definitions that we will use to describe e-books).

The e-book is both an object–a piece of software formatted to play on a particular device–and content (e.g., story, poem, informational text). The first e-books were released in the early 1990s and were largely printed stories transformed into CD-ROM format. These discs were to be inserted into a PC to make stories come alive for young children; the music, animation, clickable text, and interactivity were included to engage young children in reading books on a computer. The first research on e-books began to emerge in the late 1990s, but is still in its infancy; much of what has been

done to study the efficacy of learning from, and use of e-books has been carried out in lab-like contexts, rather than in authentic reading environments like the home or school.

E-Books are Engaging

There are several reasons why e-books are so appealing. First, they are presented on mobile devices and computer screens. A long line of research has documented the general appeal of technology to children (Common Sense Media, 2011; Vandewater, et. al, 2007). In addition, e-books seem magical. With one touch of a child's finger, something happens–sound effects, background accompaniment music, animation, words popping up or illuminating, recording buttons, houses being built, videos that show underwater animals–that was not present at first glance on the screen. Buckleitner (2013) argues that these seemingly magic features have the potential to engage children faster in the e-book experience and keep them engaged longer than they would with printed books.

E-Books Can "Teach"

While appealing and engaging, e-books can also support early literacy skill development; research has documented that built-in tutors facilitate children's efforts in cracking-the-code and meaning-making. Two reviews of the extant literature (Zucker, Moody, McKenna, 2009; Van Daal & Sandvik, 2012) and many other studies on e-books offer the following conclusions:

- Children can learn new vocabulary by interacting with e-books;
- A child's comprehension of a well-designed e-book can be just as good as their comprehension of a printed text;
- E-books can promote phonological awareness and print awareness; and
- Exploration of e-books can authentically support children as they learn to work desktop computers and tablets.

Despite the above conclusions related to engagement with and teaching by e-books, one of the arguments against e-book integration into early childhood suggests that all forms of technology are not developmentally appropriate primarily because (1) children are often left alone to engage with technology and (2) the screen contributes to attentional difficulties later in development. In order to explore how to more effectively and appropriately integrate e-books into early schooling, we first present the notion of developmentally appropriate practice [DAP], as this represents a major tenet of early education.

DEVELOPMENTALLY APPROPRIATE PRACTICE IN EARLY EDUCATION

According to NAEYC (2009), DAP means the child:

1. Engages in real life, culturally important, hands-on experiences;
2. Seeks to construct understanding about the world around him or her;
3. Develops engagement and focused attention;
4. Is supported, or scaffolded, in his/her learning experiences; and
5. Hears or sees his/her home language.

The following discussion illustrates the ways e-book design and utilization applies or misapplies the tenets of DAP presented above. In our discussion, we present examples of research on e-book use and transcripts of real young children interacting with e-books. These examples of research and practice do not represent an exhaustive or methodological review of the extant research or e-book market, nor do they present our own research findings from an original study. They were selected, rather, to help our readers deepen their understandings of the application DAP to e-book design and utilization.

E-Books Engage Children in Real-Life, Culturally Important Experiences

The first tenet of DAP holds that early education experiences are real-life, hands-on, and culturally important. For decades, early childhood educators and parents in the US have been commonly encouraged to use picture books and discussion as a real life experience to scaffold and support children's language learning and

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