

Chapter 7

Early Childhood Teachers: Closing the Digital-Divide

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ABSTRACT

This chapter reviews the state of technology training for early childhood educators in teacher preparation institutions across the country. Using NCATE and NAEYC standards as benchmarks of practice, the chapter outlines some current issues and research on technology training at the preservice level, such as course sequence, textbook choice, content infusion, field experiences, et cetera. The chapter also outlines three technologies, Web 2.0, Google Earth, and the virtual manipulatives that are accessible, free to users, require little teacher training, and have evidence to support their instructional benefits. These three well-developed technologies can easily be introduced to students and teachers as exemplars of constructivist pedagogical technology in early childhood science and mathematics classrooms. Activities using each are included.

INTRODUCTION

Jessica is a five-year-old enchanted by dolphins. Last year she and her sisters sat in the splash zone of a water park and watched the dolphins perform

with wet wonder. Since then, Jessica has viewed the video CD of her trip countless times as well as used the Internet on her family's computer to play dolphin games, learn dolphin facts, and download dolphin coloring book pages. For Halloween this year, she asked her mother to find a pattern on the Internet so as to make her a dolphin costume.

DOI: 10.4018/978-1-61350-059-0.ch007

Together they perused a variety of sewing patterns to replicate a “real” dolphin. Jessica at five is clearly actively engaged in learning and exploring the virtual world all the while customizing the experience to suit her idiosyncratic interests and changing learning needs. To Jessica, technology is like electricity; it is a common and ubiquitous part of her everyday life.

Jessica is not unlike her young peers in her use of technology as a learning and exploration tool. Most children plug into a variety of technologies long before they enter school. According to the Kaiser Family Foundation (2003):

- Two-thirds of infants and toddlers watch a screen of some sort an average of two hours daily.
- Children under age six watch an average of about two hours of screen media a day, primarily TV and videos or DVDs.
- Children under age six are independent of adults in much of this activity. Consider that children are:
 - Turning on the TV by themselves (77%),
 - Asking for particular shows (67%),
 - Using the remote to change channels (62%),
 - Asking for their favorite videos or DVDs (71%),
 - Putting in their own music tapes or CDs (36%),
 - Getting on to the computer by themselves (33%),
 - Loading their own CD-ROMs (23%)
 - Asking for specific websites while on the Internet (12%).

Further, a report by the National Center for Education Statistics (NCES) cites 80% of kindergartners and children in grades 1-5 have used computers and 32% of kindergartners have used the Internet while 91% of children in grades 1-5 are Internet users (2009). This technological march,

this digital Diaspora, now starts at an early age and is dramatically changing the everyday lives and learning experiences of young children. It is truly a profound cultural shift; a change in the very avenues of life and learning for our smallest learners.

This chapter will discuss resources for and approaches to training teachers in early childhood classrooms. We will focus on three tools which teachers can use in their classrooms which are available and teacher friendly. While teacher training programs provide coursework to assist professionals learn more about technology, this chapter is conceptualized as one for self-training. It is hoped that if you are a teacher who may have been avoiding the use of technology that this chapter will start you on the road to techno-teaching.

Objectives

After reading this chapter you will be aware of the important role you play in creating equal access to technology in the lives of all children in the United States. You should develop an awareness of how socio-economic environments can influence the learning potential of young children. The reader will:

- Develop a clearer understanding of what is happening with teacher training in the United States
- Learn about resources to support their teaching
- Develop a clearer understanding of the goals and standards for teachers in relation to technology

BACKGROUND: THE “SECOND” DIGITAL DIVIDE

The term “digital divide” refers to the vast difference in exposure to and use of technology between differing socioeconomic groups. This divide still

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