Chapter 20
Educational Technology in Early Childhood Teacher Education:
Taking the Road Less Traveled

Sudha Swaminathan
Eastern Connecticut State University, USA

ABSTRACT

Educational technology usage in early childhood education stands at a fork in the road. One path embellishes existing curricula with technology. The other, the more difficult passing, holds promises of technological transformations to the curricula and assessment in ways that can facilitate and propel child development. To support teachers in this path, early childhood teacher education programs need to transform themselves. The purpose of this chapter is to outline how these changes may occur within the context of national standards and policies, pedagogy and beliefs, curricular transformations, impact on children, and special tools. The authors suggests re-conceptualizing the content and delivery of college courses to support and inspire teachers to take the road less traveled. Additionally teachers need ongoing and recurrent support for continued progress in their educational technology usage.

INTRODUCTION

It's been 15 years since I co-authored a review of research in which we proposed that early childhood education stood at the crossroads of development in terms of technological infusion and transformation (Clements, Nastasi, & Swaminathan, 1995). There were still skeptics who worried about the impact of computers on young children, and a growing cadre of enthusiasts who saw great potential for transforming curriculum and teaching. At that time, the computer was almost the only major piece of technology available and was almost synonymous with technology.

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Since then, the field has exploded in many ways. Shoving aside the computer and claiming more intense educational attention are newer and intuitively clever and child-friendly tools such as the digital camera, the hand-held digital microscope and the iPad. However, while several research studies and classroom action research projects have illuminated creative ways for educational technology to both propel and facilitate child development, teacher support and usage of these 'innovative tools' has remained hesitant, sporadic and spotty, at best (Wood, Specht, Willoughby, & Mueller, 2008).

Where do we go from here? In this chapter, I propose that educational technology in early childhood teacher education stands at a clear fork in the road: Taking the road well traveled leads to existing curriculum embellished with educational technology propagating current practices; or, taking the road less traveled could lead us to incredible content-rich and technology-rich curricular and pedagogical practices. What does the road less traveled look like within early childhood teacher education? Where do these rich educational practices exist (as indeed, they do)? What hardships await those who travel this path? And finally, where does this path lead us? I propose to address these metaphorical questions in my chapter, within the context of five major sub-topics: Standards and expectations, pedagogy and beliefs, curricular transformations, impact on children and use of special tools.

Educational Technology Standards for Early Childhood Education

It takes a while for most educational reform to pervade the field of education, but it takes even longer for technological interpretations to seep into Early Childhood Education, hitherto referred as ECE (Wartella & Nancy, 2000). To illustrate, we need only look at a few dates on the teacher education timeline. It was not until 2007 that the International Society for Technology in Education (ISTE) started including preschool within their NETS*S standards for students (International Society for Technology in Education, 2007). The National Association for the Education of Young Children (NAEYC), the premier professional organization for ECE put forth a position statement on technology and young children (a well written, comprehensive document, by the way) in 1996, and this document (NAEYC, 1996) has remained the sole official document from NAEYC for close to 15 years even whilst technological tools for the young child in the commercial world erupted into a mushroom cloud of talking, moving and sometimes sensing toys. It is anticipated that NAEYC will finally have an updated position statement in mid-2011.

Even acknowledging the gradual pace of the educational change, what are the expectations and guidance afforded by these documents for navigating the roads less traveled in ECE?

First and foremost, by relegating technology operations and concepts as the sixth and final NETS*S standard, we receive the clear message that no longer can operation of technology tools be taught in isolation. The learning of technical skills becomes subsumed within the execution of the first four curricular integrated standards of creativity, communication, research and critical thinking. This is an acknowledgment of a developmental change in the thinking and learning styles of the newest generation of young school children. It is an acknowledgement that as adults we need to shift our own thinking from *how do I do this* to *what can I do with this*. I discuss and detail with examples the particular impact of these ideals in later sections. To provide a single example here, within ECE, this shift consists of moving the computer center from its one fixed location all year round to rotating it to the art, the writing, or the science center, and offering it as just another integral tool available for the children to use in creative or research endeavors. Learning theories (Resnick, 1985) have expounded on the value of changing the time of day and place of study as a