Chapter IX

Tech-Knowledge: How Children and Early Childhood Education Teachers Develop Knowledge Through Technology

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Abstract

This chapter describes how early childhood teachers can support the development of young children’s love for learning through technology, and how one early childhood education program promoted college students’ learning through online video conferencing technology. Useful suggestions for educational software for children as well as Web sites for both children and teachers are included. Recommendations on how to use technology for higher education are also described.
“Any sufficiently developed technology is virtually indistinguishable from magic”: This famous quote from author Arthur C. Clarke vividly demonstrates just how much we have advanced technologically in recent years. It has advanced so much that technology has influenced all levels of society (Morrison, 2001), and many early childhood educators warn that children and their families without access to computers and other high technology will have a hard time succeeding in our society (Morrison, 2001; Taylor, 2000). Technology is defined as “the application of scientific, material, and human resources to the solution of human needs” (Morrison, 2001, p. 386). According to the position statement of the National Association for the Education of Young Children (NAEYC), today technology is a big part of American life (1996), and its potential benefits for young children’s development are well documented (Fisher & Gillespie, 2003; Wright & Shade, 1994). All young children need an opportunity to experience and to explore technology at early ages in order to prepare for life in a modern society and to deepen their creative problem solving and thinking skills (Bowman, 1998). Since technology plays a great role in young children’s learning and development (Ashikawa, 1991; Morrison, 2001), early childhood educators need to know how to implement technology in their programs and to develop technological literacy for their charges as well as for themselves.

This chapter is twofold: how teachers can support the development of young children’s love for learning though technology, and how one early childhood higher education program promoted college students’ learning through online video conferencing technology in 2003 and 2004 (Taylor & Hsueh, 2005). The two issues mentioned above will be discussed from the perspective of constructivism which is defined as “the learner constructs knowledge through self-initiated exploration” (Taylor, 2004, p. 20). We consider constructivism as an approach to teach young children, and constructivist teaching includes authentic tasks for learners by providing them with real materials, equipment, and supplies (Branscombe, Castle, Dorsey, Surbeck, & Taylor, 2003). Also, we consider technology such as computers to be included as children’s everyday materials in the classroom; and if teachers understand and implement technologies in their classrooms aligned with constructivist teaching, children can actively engage in authentic learning experiences and can create their own knowledge. Moreover, if we are to understand how children construct their own knowledge by interacting on their environments, teachers must understand the process of how they themselves construct their own knowledge. Therefore, by interacting with top researchers/educators through the use of technology, college students can actively engage in their own learning experience and can thus understand how children construct their knowledge (Taylor & Hsueh, 2005). The recommendations regarding the use of technology for higher education are also included.
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