

## Chapter 5

# Technology and its Role in Teacher Education

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### ABSTRACT

*This chapter discusses technology and its role in teacher education. In order for technology to reach the early childhood classroom, it must first reach the classroom of the teacher education programs. The effect of self-efficacy on preschool teachers use and understanding of technology may influence their instructional applications. Early childhood faculty come from the same career pool as early childhood teachers and may share the same beliefs that practitioners have concerning technology. Teacher education programs have a responsibility to produce professionals who are literate in technology tools and applications.*

### INTRODUCTION

Technology, for this chapter will be defined as, “the application of tools and information to make products and solve problems” (Morrison, 2007, p. 371). The authors will discuss how technology is used as tools for teacher training and some of the expectations schools in the United States have for new teachers entering the career market. There are usually an assortment of technology tools found in an early childhood classroom, such as televisions, computers and digital cameras. As a teacher in an

early childhood classroom, it is vital to take into account the great range of technology tools that could be essential to the development of young children today (Morrison, 2007). While some of these tools are used for direct instruction, there are also a variety of technology tools teachers need to perform their roles as classroom managers.

Educators who prepare teachers of young children must become techno proficient to help their students enter the new age of digital competency. Teachers must also be prepared to use technology in their classrooms as schools become computer competent. New expectations for skills that teachers need to perform their jobs are developing as more

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efficient methods of communication and management become available. Technology that was once considered to be “cutting edge” a few years ago is now found either to be commonplace or obsolete. Therefore, it is imperative that teacher education programs keep up with the high demands of the technological world. Gates (2007) states, “technology integration is much more than placing a computer into a classroom and giving the teacher some software to use. It is a systematic process that requires time and commitment from principals, teachers, students and parents” (p. 21). The Colleges of Education must take responsibility for teacher preparation in technology use if children are to be given the necessary tools to succeed in today’s world. This chapter explores some ways that technology is being used in university teacher training programs and how university faculty are preparing teachers to move into jobs that demand technology.

This chapter has been a collaborative effort between a faculty member in a college of education and a student of education who is a research assistant in psychology. The faculty member learned to use technology after she had matured which is typical of many teachers in the United States. She models the use of technology in a Curriculum Development course she teaches at her university and describes how she prepares future teachers for their jobs. Like most students entering a university, the education student grew up in the digital world using computers and other technology since early childhood. She brings the thinking of psychology and education to this chapter. She has experienced technology in her educational experiences in schools in different states. They have had very different background experiences with technology in teaching and learning. Of particular interest is the thinking behind technology teaching from the personal experiences the university faculty member. Her writing gives insight into how teacher educators perceive what is important when teaching technology. She gives examples she uses in her courses and ideas she believes

are important to teacher training. This allows the reader to see how education faculty develop their thinking about teaching technology. To provide a broader view of technology the education student relates ideas she has seen in schools and other courses. Together they provide an overview of the how educators in the United States understand the role of technology in teacher training.

The first section of this chapter discusses background information regarding the general use of technology in teacher education. The focal point of this section is the need for teacher education programs to graduate teachers who are competent in technology. As the level of technology increases in the classroom, the level of technology must also increase in teacher education programs. The National Standards and expectations of the professional organizations for teacher training are included in this section. Colleges of Education have been challenged to prepare teachers to come to schools knowledgeable and competent about technology applications. This requires faculty to also become competent in technology use.

The next section of this chapter focuses on technological tools used in the classroom of today. This part is organized around four areas of technology applications that are related to professional responsibilities and includes specific tools. This section discusses tools for instructional presentation, assessment, accountability and communication that teachers are expected to use in their teaching jobs. These tools include specific applications like PowerPoint presentations, document cameras, digital cameras, SMART boards, spreadsheets, electronic portfolios, web pages and on-line communities. The discussions of each of the aforementioned technologies include a definition of each technology and relevant uses in the classroom.

The following section of this chapter explores some of the most common barriers to teacher technology use in the classroom. These barriers are relative to Colleges of Education and their courses for teacher training and teachers entering

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