Chapter 80
Issues and Challenges in Preparing Teachers to Teach in the Twenty–First Century

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ABSTRACT

Preservice teachers need to acquire both technological skill and understanding about how technology rich environments can develop subject-specific knowledge as a part of their teacher education programs. The purpose of the research project, as described in this case study, was to examine the impact that immersion in technology-infused social studies pedagogy courses had on preservice teachers' willingness to use computer and online tools as well as how they used them during their student teaching. Teacher education students enrolled in two pedagogy courses were surveyed at the beginning and end of the courses and interviewed over the duration of the courses regarding the nature and extent of their technological knowledge and skill. Following the completion of the pedagogy courses, six volunteered to have their technology use tracked during their nine-week practice teaching experience. Findings showed that while the preservice pedagogy courses did increase the student teachers' knowledge of and skill with a variety of computer and online tools as well as their desire to use them during their student teaching, the elementary schools in which they were placed for their practicum were poorly equipped and the mentor teachers were not using the tools that were modeled on campus. If preservice teachers are to truly understand the benefits of learning and teaching with technology, teacher education institutions and school districts need to work together to present a consistent vision of technology integration, and schools need to provide environments that encourage and support technology use.

BACKGROUND INFORMATION

Educating our youth for the digital age requires learning experiences that are not only infused with the latest in technological tools but that also help to develop them as digital citizens who can locate, evaluate and ethically use information, think critically and creatively, problem solve, make decisions based on sound evidence, and collaborate with others from around the globe using digital resources. In order for these experiences to be a part of their learning, students need teachers who are both aware of and skilled with the latest technologies. While most practicing teachers have professional development opportunities in which to acquire these skills, it is paramount that new teachers entering the field are familiar with these tools as well. In order to prepare our beginning teachers for this twenty-first century reality, we must build wide-ranging educational experiences that encourage the use of emerging technologies throughout our entire teacher preparation program.

Setting the Stage

Traditionally most teacher education institutions have attempted to develop beginning teachers' technological knowledge and skills through a mandatory stand-alone technology course focused on learning how to use a variety of computer-based tools and programs. While such a course can assist with the development of technological skills, the research recommends that if student teachers are to be prepared to go out to classrooms and foster change, then teacher preparation programs must model the use of these technologies and provide opportunities for preservice teachers to increase their technological skills throughout their preparatory experiences, including during practice teaching in schools (Angeli, 2004; Brown & Warschauer, 2006; Magliaro & Ezeife, 2007). In addition to model-

ing a variety of technologies there also needs to be the ongoing discussion incorporated into all aspects of the teacher preparation program about issues and challenges related to technology use.

One way to extend preservice teachers' understandings of the potential of a technology rich environment is to model such an environment in subject-specific pedagogy courses offered as part of a teacher education program (Beaudin & Hadden, 2005; Dexter & Riedel, 2003; Rowley, Dysard & Arnold, 2005). These pedagogy courses can provide opportunities for preservice teachers to develop deeper understandings about how to use technology in ways that engage children critically, creatively and collaboratively in conjunction with the development of subject-specific knowledge (Brown & Warschauer, 2006).

THE CASE

The study reported in this case examined the influences of technology-infused social studies pedagogy courses on student teachers' perceptions about why, when and how to most effectively infuse technology in their teaching, and their attempts at incorporating those technologies during their practice teaching in schools.

The Technology Experiences Provided

As part of a four year Bachelor of Education Program, students majoring in elementary social studies education in our Faculty of Education can take two pedagogy courses related to social studies teaching and learning. In the introductory course, technology is being used to expand students' knowledge and understanding of key social studies concepts such as citizenship and diversity, as well as teaching approaches such as constructivism and concept development. Students are introduced to examples of technology-

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