Chapter 4
Technology Expanding Horizons in Teacher Education:
Transformative Learning Experiences

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ABSTRACT

The purpose of this exploratory action research study was to examine how the modeling by instructors of technology integration would affect the quality of the lessons that elementary teacher-education students designed and taught in their field placements. The research was conducted across two consecutive semesters with two different cohorts of methods students placed at a local elementary school that had received new interactive whiteboards, SMART boards, in every classroom at the beginning of the previous school year. Based upon field-supervisor/instructor observations, reflections, and oral and written feedback from host-teachers and students, an analysis was conducted to determine the effectiveness of the intervention. Findings suggest that teacher education students' level of engagement increased regarding the integration of technology, and children were more engaged and actively involved during the teaching of methods students' mathematics and science lessons.

INTRODUCTION

The integration of technology continues to inform the ways that tomorrow's teachers are being prepared in teacher education classrooms today. Computers, laptops, LCD projectors, digital cameras and interactive whiteboards, computer software, and access to the World Wide Web are now commonly found implements of information technology used in schools. According to a recent report on educational technology in public school districts by the National Center for Educa-

tion Statistics (NCES, 2008), which surveyed the technology access of approximately 1600 public school districts in the 50 states and the District of Columbia, over 90 percent of those surveyed with a district network reported having access to the Internet.

Such was the case for the Riverbank School District, which currently serves a predominantly lower-socioeconomic, white, rural population of students. In 2010, the Riverbank Elementary School received a state technology grant that placed brand new interactive whiteboards (IWBs), SMART boards, into every classroom the previous year, complete with Internet access available. Ironically, when the first cohort of Keene State College (KSC) Methods 2 (M2) students entered their host classrooms in Riverbank at the start of the 2010 fall semester, the majority of host teachers held an assumption that their younger M2-student counterparts would be more adept than the teachers themselves were at using the SMART boards to teach.

However, upon further investigation, the instructor-field supervisor (I-FS) in Riverbank discovered that most of the M2 students from KSC had very little experience in working with and teaching using interactive whiteboards. This discovery motivated the M2 faculty instructional team to immediately secure some very basic IWBs training for the M2 students on campus. But it raised a deeper pedagogical question for the M2 I-FS in Riverbank in knowing that quality professional development regarding technology use should leave one in the position to move beyond the basics of knowing how to turn technological tools on and off—in this case quality professional development should lead to a deepening of engagement and exploration of the technological tool in question. This led to an immediate additional enhancement of the M2 course curriculum via the incorporation of a collaboratively designed learning experience for the students. This learning experience would be a targeted and transparent modeling by the Rich Media Specialist (RMS) from Keene State

College's *Center for Engagement, Learning, and Teaching* (CELT) and the instructor-field supervisor (overseeing the cohort of M2 students placed in Riverbank for the semester) of how to explore and integrate technology (specifically using IWBs) into students' development and teaching of their own mathematics and science lessons was done in the on-campus Methods 2 course.

As a relatively new faculty member, students knew that the I-FS in Riverbank was originally from New York City and had a host of questions about what it was like for him to teach in an urban setting. Their interest and questions, coupled with the dynamics of new technology in their semester-long field placements in Riverbank, inspired the learning experience CELT's Rich Media Specialist, and the I-FS for Riverbank developed for the M2 students. They took all M2 students enrolled in the course on a virtual trip to NYC in the fall semester using the on-campus SMART board—an interactive learning experience/workshop they called, *The New York Experience: A Virtual Trip—Sights and Sounds of the City*.

The goals of this interactive technology-driven experience were to inspire the M2 students to engage themselves as educators so that they would, in turn, engage the children they would be teaching mathematics and science lessons to in the field, explore and integrate technology effectively, and experience, first-hand, the impact of a culturally responsive, well-planned, thematically designed, interactive learning experience can have on the actual teaching and learning that can occur in any classroom and at any grade level.

BACKGROUND

Technology in the Classroom

In today's public school classrooms there are a range of technology tools (computers, laptops, counters, interactive whiteboards, etc) that are being employed in an effort to engage students and

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