

**CLASSROOM OBSERVATIONS OF INSTRUCTIONAL PRACTICES AND
TECHNOLOGY USE BY ELEMENTARY SCHOOL TEACHERS AND
STUDENTS IN AN ETHNICALLY-AND ECONOMICALLY-
DIVERSE SCHOOL DISTRICT**

A Dissertation

by

KAYLA BRAZIEL ROLLINS

Submitted to the Office of Graduate Studies of
Texas A&M University
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

August 2011

Major Subject: Curriculum and Instruction

Classroom Observations of Instructional Practices and Technology Use by Elementary
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School District

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Chair of Committee,	Hersh Waxman
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ABSTRACT

Classroom Observations of Instructional Practices and Technology Use by Elementary
School Teachers and Students in an Ethnically-and Economically-Diverse
School District. (August 2011)

Kayla Braziel Rollins, B.S., Texas Christian University;

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The purpose of this study was to observe pre-kindergarten through fifth-grade public school classrooms to examine differences among instructional practices and technology use by teachers, students and the overall classroom. The current study differed from and built upon previous classroom observational research in a number of major ways. First, the observational data examined both student and teacher technology use and the availability of technology in the classroom. Second, authentic classroom behaviors were examined in relation to technology use; specifically, behaviors related to the impact of technology use on student engagement as well as differences among technology use in classrooms and differences by student socio-economic status. Finally, unlike previous studies, this study focused specifically on pre-kindergarten through fifth-grade classrooms from the same large public school district that was diverse by both socio-economic status (SES) and by student ethnicity.

Overall, the results of this study suggest that technology has not been adequately implemented into the observed classrooms. Technology was available but was not used to a great extent. When technology was implemented, teachers were primarily observed using it to present material and students were observed using it almost exclusively for basic skills activities. This low-level of technology integration occurred in elementary schools of a high performing school district which had a technology plan in place, a low student to computer ratio, and 100% of the classrooms had Internet access.

Furthermore, only 15% of teachers were observed integrating technology to a great extent; however, students in these classrooms were observed on task significantly more frequently than students in classrooms where technology was observed less or not at all. On the other hand, students were observed off task significantly more in classrooms where either no technology integration was observed or where it was only observed a moderate amount. These findings support and build upon previous observational studies. There is still a need, however, for strong, empirical research to be conducted to further examine the use of technology in elementary classrooms.

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CHAPTER I

INTRODUCTION

Technology influences our lives every day, and it has become increasingly common to see numerous computers along with other forms of technology in P-12 classrooms. This is due in part to large financial investments by a number of school districts as well as grants from the state and federal government in order to implement technology into classrooms. The State Educational Technology Directors Association (SETDA), the International Society for Technology in Education (ISTE) and the Partnership for 21st Century Skills pushed for a renewed importance on technology in education in a recent national report (SETDA, 2007).

As part of No Child Left Behind (NCLB), the Department of Education stated that the primary goal of the Enhancing Education through Technology Act of 2001 was “to improve student academic achievement through the use of technology in elementary schools and secondary schools” (U.S. DOE, 2001). Almost a decade later, the federal government continues to mandate that “we must leverage [technology] to provide engaging and powerful learning experiences, content, and resources and assessments that measure student achievement in more complete, authentic, and meaningful ways” (U.S. DOE, 2010, p. 3).

This dissertation follows the style of *American Educational Research Journal*.

A recent National Center for Education Statistics (NCES) study looked at the availability and use of technology in elementary and secondary public schools and found that this national sample of teachers reported a 5.3 to 1, student to computer ratio overall and a 5.4 to 1 student to computer ratio at the elementary level (Gray, Thomas, & Lewis, 2010). In the same study, 75% of teachers at the elementary level also reported that they or their students used computers *often* or *sometimes* during instructional time.

Today's elementary classrooms, however, are equipped with more than *just* computers. Elementary teachers reported having: a liquid crystal display (LCD) or a digital light processing (DLP) projector (81%), digital camera (81%), interactive whiteboard (54%), document camera (42%), classroom response system or "clickers" (28%), video conference unit (20%), MP3 player/iPod (18%), and/or handheld devices (13%) available as needed or present in their classrooms every day (Gray, Thomas, & Lewis, 2010). Also, 88% of teachers at the elementary level reported attending professional development for educational technology in the last 12 months.

Despite the large percentage of teachers who are attending professional development for educational technology, a high degree of technology immersion in the classroom is not always the result. In a recent four-year study, for example, 21 middle schools were immersed with technology and professional development for teachers; yet, only 6 of the 21 treatment schools reached substantial levels of technology implementation by the fourth year (Shapely, Sheehan, Maloney, & Caranikas-Walker, 2010). In addition to professional development being a high priority, the six successful

schools had strong administrator and teacher support for the technology program and a collegial atmosphere at the schools.

With such an array of technology in elementary classrooms, there is a need to examine how the technology is being used, who is using it, and what instructional practices are taking place in these classrooms. Findings from a national survey of teachers showed a reported increase in teachers professional use of technology (e.g., lesson planning) from 2004 – 2007, but during that same time period, the frequency of students use of technology for school work did not increase (Bakia, Means, Gallagher, Chen, & Jones, 2009). Other studies have suggested that teachers are more likely to implement learner-centered instructional approaches when students are using technology, specifically research or production software (Inan, Lowther, Ross, & Strahl, 2009; Lowther, Ross, & Strahl, 2006). Wozney, Venkatesh, and Abrami (2006) found that teachers who favored student-centered instructional approaches also reported that they were more likely to implement computer use and rated their own computer skills and knowledge at a higher level than their more teacher-centered colleagues.

The use of technology with young children has previously been a controversial issue for many in the field of early childhood and elementary education. Critics felt that an emphasis on technology in early childhood classrooms may decrease, and in some cases, eliminate time for imaginative play that is necessary to promote social and emotional learning (Miller, 2005). Many, however, view technology as a way to enhance learning in early childhood when used in developmentally appropriate ways (Boyd, 2008; Rosen & Jaruszewicz, 2009). More than a decade ago, the National Association

for the Education of Young Children (NAEYC, 1996) stated in their position statement on technology, “Technology plays a significant role in all aspects of American life today, and this role will only increase in the future” (p. 1). NAEYC is currently revising their technology position statement; however, they were accurate in 1996, the role of technology has and will continue to increase.

Judge, Puckett, and Bell (2006) used data from the Early Childhood Longitudinal Study – Kindergarten (ECLS-K) cohort to examine the movement toward equitable technology access for children in their first four years of school, kindergarten to third-grade. At the time of their study, kindergarten to third-grade classes averaged about one computer for every five students. They also reported that differences in school computer access between children attending high-poverty and low-poverty schools are greatly decreasing. Other studies that have focused on technology use in high-poverty schools as well as with Hispanic, English Language Learners have indicated that technology-enhanced instruction is particularly beneficial for this population (Padrón & Waxman, 1996; Park, 2008; Waxman, Padrón, & Garcia, 2007).

Concerns with Previous Technology Research

Numerous studies have been conducted on the availability and use of technology in schools (Judge et al., 2006; Vannatta & Fordham, 2004; Wozney et al., 2006). These studies, however, have primarily used self-report data from administrators, teachers, students, and parents. Such data are frequently unreliable since actual technology use may be over-represented when using self-report measures (Cuban, 2001). Of the

