Social Justice in 1:1 Initiatives: Schools, Transformation Models and School Culture

Introduction and Background

Many schools are beginning to adopt one-to-one computing as part of educational reform efforts with the goal of developing students’ 21st century skills. These student-centered practices allow students to learn not only content but also acquire critical skills that will lead to future careers (Voogt, 2008; Pellegrino & Hilton, 2012). Despite these reform efforts, teachers are still using technology as a means of drill-and-practice remediation, in particular with students of color (Staples, et al. 2005). The technology is new and advanced but the teaching practices remain the same as they were 50 years ago (Vu, et al., 2014) thus negating the innovation.

The most recent federal education reform effort provided millions of dollars to states for school transformation using Race to the Top grants. Many districts targeted the lowest performing schools at the elementary and middle school levels in an effort to reform instructional practices and student learning (Edweek, 2013). These lowest performing schools serve large populations of students of color and students who receive free or reduced lunches. In many instances, 1:1 technology initiatives were prominent in district plans to transform lowest performing schools. iPads proliferate school technology initiatives and will continue to do so in the foreseeable future (Morgan, 2014). With resources to support instructional technology plans school districts recognized the promise of Race to the Top to spur educational innovation for students in the lowest performing schools and potentially affect the educational trajectory for historically marginalized students.

Existing research about 1:1 and other technology initiatives shows that technology used as 21st century tools to transform teaching and learning fails to meet expectations (Murray & Olcese, 2012). Fisher (2006) cautions that using technology and iPads as agents of change misplaces the locus of change when it is teachers who must assume that role of change agent. Furthermore, Pugach, and Himes (2005) found that when principals empowered teachers to become technology leaders within their school, the level of curriculum-technology integration increased and technology became apart of the school culture. Conversely, in other studies where the principals viewed the technology as an add-on, technology was used less and in more traditional forms (Staples, et al. 2005).

This study is a part of a larger design-based research project that examines teacher use of iPads at a school that adopted a 1:1 iPad initiative using Race to the Top funds. We focus on the social justice implications of teacher use of iPads in instruction and perceptions of the usefulness as well as the impact of iPads on teaching and learning. Specifically we focused on the following research questions:

1) How do teachers’ perceptions of their students affect integration, or lack of, the iPad in their classroom practice?
2) How do teachers and administrators situate their students within the larger school community?

Theoretical Framework

When considering teachers as change agents using technology innovation as a key practice in education reform, the following dimensions must be considered if some degree of change is expected: beliefs, attitudes, or pedagogical ideologies; content knowledge; pedagogical knowledge of instructional practices, strategies, methods, or approaches; novel or altered instructional resources (Ertmer & Ottenbreit-Leftwich, 2010). Ertmer and Ottenbreit-Leftwich argue that pedagogical beliefs are the key variable. Hermans et al., (2008) found that teachers with constructivist beliefs were more positive towards regular computer integration into their classroom instruction whereas traditional teacher beliefs had a negative impact on technology integration. Belief systems are defined as systems that “consist of an eclectic mix of rules of thumb, generalizations, opinions, values, and expectations grouped in a more or less structured way” (Hermans et. al., 2008, p. 1500). Teacher beliefs are found to predict subsequent
action as illustrated in a study by Haney, and colleagues (2002). Furthermore, teacher beliefs are heavily influenced by the subject and school culture in which they participate (Ertmer, 2010). Using the framework of teacher beliefs impacting pedagogical decisions and implementation, we will illuminate the challenges faced by teachers in the school that is the focus of this study.

**Research Design and Methods**

**Study Context - School** - Caldwell Middle School is an urban middle school in the southeastern portion of the United States. The school is a Title I school with a diverse population (N=647): White 8%, African American/Black 66%, Asian 3%, Hispanic 21%, Native American 2%, Multiracial 2%. Eighty-percent of the students receive free or reduced lunch with 81% being classified as ED, 11% LEP and 19% are identified with disabilities. Ninety-six percent of the teachers (N=43) meet the federal guidelines for highly qualified, with 39% having advanced degrees. There is a high degree of teacher turnover (23%/year) in the school.

**Data Sources and Analysis** - Multiple data sources of data were collected as part of this study. These included semi-structured interviews, surveys, field notes and observations, lesson plans, and video data. The data collected from interviews and observations document embedded teacher beliefs and subsequent actions related to iPads in instruction. The data also illustrate a pervasive school culture that does not possess the dispositions needed to implement a 1:1 iPad initiative in a way that leverages the technological affordances of iPads to transform student learning. Teacher reasoning was captured through the interviews.

Interview data was transcribed and analyzed using HyperResearch. Transcripts were coded using a grounded theory, constant comparative method (Strauss & Corbin, 1998). Open coding was utilized to develop the initial codes. Once the data was saturated with codes, a second level of coding was completed and axial codes were identified. These codes were organized into broad categories or core codes (Strauss, 1987) which provided a framework to analyze the data. At least two members of the research team coded transcripts and an inter-rater reliability was calculated (r=0.90).

**Results and Discussion**

The findings in this paper are preliminary. While the purpose of the larger study was to investigate ways in which teachers utilized iPads in instruction across content areas, themes emerged about 1) teacher beliefs about student populations and how these beliefs impact their decisions when implementing the 1:1 initiative; and 2) the role of school culture in successful implementation of 1:1 initiatives. The interview data illuminated a practice of “othering” in which teachers who are a part of the study routinely referred to students as “these” and “those” students who could not “handle” the responsibilities of using iPads for learning. Teacher attitudes about the students and their communities captured in interviews and field notes suggest that the teachers do not think the iPad 1:1 initiative is something that these kids need because of other perceived areas of deficiency in their learning. The following excerpts demonstrate this practice:

> Mr. Jack describes students’ attitudes towards the iPads and how being less restrictive with access to certain sites was counterproductive for the school. He explains: “These kids are very a….at least this particular population is not so interested in learning content as much as they are in learning drama. I mean that’s the way it is. This is a very drama oriented school. It’s very much the personal relations. These kids are neighbors to each other. They see a lot and they experience a lot. And...you know I’m trying to teach them about the amplitude of a wave and they want to learn about what’s going on in their friends’ lives so they have a much more closer identification with what’s going on in their lives than what I need to be teaching.”
In another example, Mr. Jack candidly responds to a question posed by the interviewer about whether the school has ever considered allowing the students to take the iPad devices home for homework completion.

*Interviewer:* Have they ever considered making them available at the end of the day so the kids could take them home...so they could do work at home.
*Mr. Jack:* We would never do that.
*Inter:* Why?
*Mr. Jack:* Cause they wouldn’t get ’em back. And as a matter of fact they all have to be accounted for at the end of the day and if they’re not they’ll actually hold the buses until they find them. At least the public that I’m associated with are laying the odds that aww... you’re going to find these in the pawn shop at [local pawn shop] on [local highway near school]. And the perception was I guess that #1 they were going to get broken a lot and #2 they were going to get stolen and #3 they were going to just get stolen. And so yeah they never even approached the idea of letting the kids take them home.

Observer field notes also illustrate a heightened presence of law enforcement and an unplugged metal detector. Field notes documented the apparent use of law enforcement in administrative roles as student resource officers often respond to discipline issues as often as or in lieu of school administrators. Taken together with interviews, this suggests a culture within the school that actually criminalizes students and positions this population of students as being incapable of learning or benefiting from technology innovation as a part of their learning in the 21st century.

**Conclusions and Implications**

Observations and interviews from the larger iPad study illuminated larger challenges for this school trying to implement a 1:1 iPad initiative as a transformational effort. The preliminary findings suggest that school culture and teacher beliefs have tremendous impact on whether a school transformation effort has a chance to succeed. Teacher content, pedagogical, and technological knowledge may have little impact on student learning when teacher attitude and beliefs contribute to a school culture that does not believe its population of students actually deserves rigorous curriculum that is innovative using 21st century tools and technology. The real reform must take place along these dimensions.

While Ertmer and Ottenbreit-Leftwich (2010) suggest that pedagogical beliefs are the most important dimension on the continuum of change in educational reform, the discoveries made while conducting this larger study actually suggest that other dimensions are at play and warrant consideration particularly since schools with high minority enrollment and high poverty schools are often at the center of such school reform efforts. Simply providing the resources for the technology and cursory professional development do not address latent attitudes and beliefs teachers harbor about the population they teach. In such marginalized communities, no amount of technology or resources will change teaching and learning if the teachers do not believe that the students can actually learn with the technology and if the school culture does not recognize its population as learners who can “handle” a rigorous curriculum. Our findings about teacher expectations and beliefs are supported by previous research (e.g. Van der bergh et al., 2010; Staples et al., 2005). According to Van der bergh and colleagues (2010), teachers generally do hold different expectations for minority students thus affecting student achievement and the types of activities students were presented during instruction. Additionally, Staples et al. (2005) support this finding by noting that teachers in poorer schools utilize technology to reinforce basic skills instead of supporting student higher-order thinking skills.

Finally, Mouza (2011) considered technology initiatives in schools in urban contexts examining teacher efficacy and dilemmas to implementation of technology initiatives, noting that “cultural and
organizational context impacted ways in which teachers applied learning from professional development in their teaching practice. The preliminary findings of this study support this assertion and warrants a closer look at such initiatives particularly in school settings in which iPads and technology innovations are used to change teaching and learning for students in high poverty schools with predominantly minority populations. As school reform efforts are designed to close the ubiquitous achievement gap between racial majority and minority students, ill-designed reform efforts that do not address broader issues about teacher attitudes and beliefs about students will only widen the gulf and push marginalized student populations further behind their peers in a society that demands the skills and dispositions that can be gained from student-centered, reform pedagogy.

This study will contribute to the growing body of scholarship that follows the proliferation of iPads in K-12 schools. We believe this particular look at how teacher beliefs and school culture impact the implementation of a 1:1 iPad initiative and thus the educational trajectory of students in an urban school setting relates to the theme Toward Justice.

Works Cited


Education Week (2013). Insert from wikispaces site

Fisher, (2006) – Add this in


