Sue Stone

Professor Sexton

ENG 1100

October 23, 2013

Topic

Computer technology in education

Tentative thesis

Although technology has the potential to revolutionize how children are educated, schools have focused more on providing adequate technology than on providing the professional development necessary for teachers to embrace a technological revolution in their classrooms.

M. Dunleavy, S. Dextert, and W.F. Heinecke, "What Added Value Does a 1:1 Student to Laptop Ratio Bring to Technology-supported Teaching and Learning?"

The authors of this article make a case that in spite of some challenges, technology in the form of 1:1 devices for students adds value to the teaching and learning process. The authors conducted research to understand how teachers used laptops at a 1:1 ratio with middle school students. Their data included interviews, observations, and documents. They found that teachers most often used laptops in "online research used in conjunction with productivity tools" (444). Because the students all had individual devices, they were able to work at their own pace and access many data sources, enabling teachers to get a sense of the level of research skills of each student. The authors also found that teachers were able to use the laptops to individualize "drill and practice" (446) activities and added value in several ways to this type of teaching activity such as increased ability to individualize instructions and increased engagement (446). While

the technology did add value to the teaching and learning process, the researchers also found that technology has the capacity to add challenges to the learning environment, especially in the areas of "classroom management and hardware issues" (447).

While the authors find that technology can improve the learning process, they do acknowledge that "the mere presence of a technology-rich environment is not sufficient for enhanced teaching and learning or added value" and note the "unique challenges and barriers to successful instruction" (442) presented by technology.

The authors' findings support my tentative thesis. The 1:1 laptops did add value to the teaching and learning experience in some cases, but the addition of the technology did not mean that all teachers were ready and willing to use it in a manner that added value. The authors recommend that schools must focus on adding to the knowledge of their teachers in relation to technology.

The article reinforces what I have read in the other sources. All point out the transformational ability of technology in the classroom but note the importance of the teacher as the variable in how effective the use of that technology will be.

Ruiling Lu and Richard C. Overbaugh "School Environment and Technology Implementation in K-12 Classrooms"

The authors point out that there is much research to support "barriers" (90) to the effective integration of technology in the classroom. Some of these barriers are "external" and are issues related to access to resources, sufficient time, technical support and leadership (91). Others are "internal" and are related to "teachers' beliefs about the values of technology, their ability to use technology, and their attitudes and motivations toward change" (91). The authors

conducted a study by distributing surveys and interviewing teachers to determine if some of these barriers are related to location or level of school.

They found that there was no difference between rural, suburban, and urban schools on points related to administrative support or time for technology integration. There were also no significant differences between elementary, middle, and high school teachers' responses. They did find that four factors were significantly different between rural and suburban schools: "easy access to hardware, easy access to software, easy access to technical support staff, and timely solutions to technical problems" (96). They also found significant differences between suburban and urban schools in three respects: "easy access to technology integration professionals, timely solution to technical problems, and sufficient continual technology education opportunities" (96). Factors that affect technology integration, especially regarding maintaining the technology itself, were significantly different in the three settings (99). However, uniformly across all three settings, teachers reported a lack of time for effective integration (98).

This article fits with my thesis in that it points out the lack of time to learn about effective technology integration across all levels. It made me realize, though, that there are differences across settings in regards to technology infrastructure. My thesis states that schools have focused more on providing the technology than the professional development to go along with it. In rural schools, they may not have even been able to provide the technology. The article fits with the others that I have read—pointing out that while technology has the ability to enhance teaching and learning, there are barriers to effective implementation that include time to learn and the support needed to implement the technology effectively. The article challenges me to think about how technology integration may be affected by the environment and context of the local school.

Emily Hixon and Janet Buckenmeyer "Revisiting Technology Integration in Schools: Implications for Professional Development"

The authors basically begin with the same thesis that I have. They note the promise of technology to change the face of teaching and learning and that schools have worked diligently to provide computer hardware and software. However, this technology is "underutilized" (131). They go further to point out that many states have attempted to address "the technological proficiency of teachers" (131), but teachers continue to underutilize technology or use it for low-level technology activities: word processing, improving computer skills, researching on the Internet, or computer time as a reward. The authors point out similar reasons for ineffective technology integration that the other articles did: 'lack of time to learn how to use the technology and/or prepare for using it . . . lack of appropriate training. . . lack of technical support to fix problems " (133).

Hixon and Buckenmeyer take their thesis one step further, though, and argue that teachers do not effectively integrate technology due to "second-order barriers" (136), or barriers related to attitudes and beliefs about technology. They argue that teachers do not really desire to integrate technology because it means that they must "fundamentally change how they teach . . . teachers technology will change the core values upon which education is based and dehumanize the processes of teaching and learning" (136). They point out the need for professional development to address these beliefs of teachers about technology rather than solely addressing access or technical skills.

This article goes a step further than my thesis and the other articles and challenges my thinking. Professional development must address not only teachers' technological skills but also how technology fundamentally alters the teaching and learning relationship. Perhaps it is not

that teachers need more information on how to use the technology. Perhaps what they need is more information on how they can merge new technologies with their professional practice in order to improve their ability to teach.

Works Cited

Dunleavy, Matt, Sara Dextert and Walter F. Heinecke. "What Added Value Does a 1:1 Student to Laptop Ratio Bring to Technology-Supported Teaching and Learning." *Journal of Computer Assisted Learning* 23 (2007): 440-452. Web.

Hixon, Emily and Janet Buckenmeyer. "Revisiting Technology Integration in Schools: Implications for Professional Development." *Computers in the Schools* 26 (2009): 130-146. Web.

Lu, Ruiling and Richard C. Overbaugh. "School Environment and Technology Implementation in K-12 Classrooms." *Computers in the Schools* 26 (2009): 89-106. Web.