Comparative Study of Elementary and Secondary Teacher Perceptions of Mobile Technology in Classrooms

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ABSTRACT

More and more schools are implementing a 1:1 mobile device initiative for their students because the future of learning will have technology embedded within the curriculum. Teachers are often given the direction to utilize mobile devices in the classroom, but quite often educators do not understand the significance of this technology or agree with its purpose. The purpose of this study was to explore elementary and secondary teacher perceptions of mobile technology in the classroom. According to the survey results, elementary and secondary teachers feel positive about the uses and the importance of mobile technology in the classroom. These positive perceptions by teachers regardless of gender, age, and training indicate that schools should continue to allocate resources to purchase mobile devices for all students.

KEYWORDS

Elementary Teacher Perceptions, Learning, Mobile Technology, Secondary Teacher Perceptions

INTRODUCTION

Mobile technology in the K-12 classroom is rapidly moving from an idea to a reality. Student access to mobile devices is increasing at an exponential rate and educators’ attitudes towards bringing mobile devices into the classroom are changing along with technology (Adhikari, Mathrani, & Parsons, 2015; Gaved, Collins, Mulholland, Kerawalla, Jones, Scanlon, & Twiner, 2010). There has been an increase in the number of mobile devices available and many believe these mobile devices have the potential to make a large impact on education (Chen & Huang, 2010; Gaved et al., 2010; Liu, 2007). This technology has significant educational benefits for students and can broaden the learning opportunities in a society where information is available anytime, anywhere (Chen & Huang, 2010; Liu, 2007; Looi, Seow, Zhang, So, Chen, & Wong, 2010). Mobile learning is allowing opportunities to “create, own, transform, discuss, discard, share, store and broadcast ideas, opinions, images and information, and to create and transform identities and communities” (Traxler, 2016).

The literature has shown that perhaps the most significant academic gains from 1:1 device initiatives are related to students’ writing skills (Bebell & Kay 2010; Silvernail & Gritter, 2007). Additional studies have measured student growth in other content areas like math and reading. The results from these studies provide evidence that learning increases in these subject areas for students with access to a 1:1 initiative (Lei & Zhao 2008; Shapley, Sheeha, Sturges, Caranikas-Walker, Huntsberger, & Maloney, 2006).

The benefits of the 1:1 initiative is not solely academic. Multiple studies have also reported that student engagement increases when students are engaged with technology (Bebell, 2005; Lemke &
Martin, 2004a; Lemke & Martin, 2004b; Mouza, 2008; Russell, Bebell, & Higgins, 2004; Shapley et al. 2006; Warschauer & Grimes, 2005; Zucker & McGhee, 2005). A 2010 study by Bebell and Kay confirmed that five middle schools in Massachusetts reported higher levels of engagement due to technology engagement. Teachers reported that students were motivated overall to get tasks done when using a laptop in that study.

There are also benefits for teachers with a 1:1 initiative: Dawson, Cavanaugh, and Ritzhaupt (2008) reported that Florida teachers utilizing a 1:1 laptop program had an increase in the use of project-based learning and collaborative learning. Despite varying degrees of training and implementation, teachers’ perceptions and practices change when students are provided with 1:1 technologies.

It should be no surprise that as technology advances and the costs decrease for most devices more and more students have access to smartphones and other devices. A survey was conducted by Speak Up research project in 2010. They surveyed over 350,000 K-12 students, parents, and administrators from 5,757 schools and 1,215 districts, and found that high school students’ access to smartphones had more than tripled since 2006. The number has only gone up since then. Many school administrators also believe that mobile devices can increase student learning and engagement (Eisele-Dyrli, 2011). Uzunboylu and Ozdamli (2011) cited Lau and Woods (2009) and Madeira, Sousa, Pires, Esteves, and Dias (2009) by saying that mobile technology has opened doors for new educational opportunities and is changing the way teachers use this technology in their classrooms to teach children.

Student-to-computer ratio has become the accepted way to measure access to computers in the school. Current trends show the ratio is moving even lower with a push in education towards 1:1 implementation (Eisele-Dyrli, 2011). Despite the low ratio, many computer labs are not located in the classroom, which makes access difficult for students. Students are given computer lab time to leave the classroom during the day to access the computers in place of a true 1:1 ratio. Some schools place large numbers of computers in carts and bring them into the classroom, which offers a higher ratio (Russell, Damian, & Higgins, 2004). This exponential rate of change from a student to computer ratio of 125:1 in 1983 to most students owning a personal mobile device that has internet access will change the way students learn and the way teachers teach (Adhikari, Mathrani & Parsons, 2015; Kukulsk-Hulme, 2010).

Some U.S. states have a statewide initiative to put technology in the hands of students. States like Maine, Florida, and Iowa are leading the country in the number of laptop initiatives in their schools. In Maine, the Learning Technology Initiative, has provided funding statewide for both professional development and for 21st Century tools in middle and high schools to help students meet the educational standards. In Florida, the Leverage Laptops Initiative is a focus for the state and providing many technologies to students in schools around the state. In Iowa, school districts themselves have taken the lead on budgeting for technology for teaching and learning. More than half of the K-12 schools throughout the state have 1:1 technology initiatives.

PURPOSE OF THE STUDY

The purpose of this study was to explore elementary and secondary teacher perceptions of the uses and importance of mobile technology in the classroom. More and more schools are implementing a 1:1 mobile device initiative for their students because the future of learning will have technology embedded in the curriculum. This change will require teachers and administrators to adapt to this pedagogical framework. Although school leaders know technology is becoming a major part of the educational process, school leaders do not yet understand the perceptions of teachers regarding mobile learning in their classroom. Will the inclusion of new and mobile innovative technology help or hinder the education of the next generation? Secondary questions will revolve around how teachers are using this technology in their classrooms. Educators need to move from simply substituting the newest technology for older tools like whiteboards, books, and notepads to augmenting, modifying, and eventually redefining how they teach and how their students learn using technology.
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