Chapter 65
Mobile Learning in and out of the K–12 Classroom

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ABSTRACT

Today there is widespread ownership of mobile technology, including mobile phones, tablets, Chromebooks, among school-aged youth. To wit, researchers report that nearly 70% of 8- to 18-year-olds own their own mobile device. In parallel with increased accessibility and usage, researchers in various fields of education have begun to explore how mobile technology can impact teaching and learning. In this chapter, the work of pioneering scholars in the area of emerging technology in K-12 education are discussed. Next, a description is provided of the current scientific knowledge on the ways in which mobile technologies are used by students in K-12 education. Then, important research is reviewed that highlights the added effects of mobile technology to support non-traditional learners. Lastly, recommendations for future lines of investigation and further reading are discussed.

INTRODUCTION

Today there is widespread ownership of mobile technology, including mobile phones, tablets, chromebooks among school-aged youth. To wit, researchers report that nearly 70 percent of 8- to 18-year-olds own their own mobile device. In parallel with increased accessibility and usage, researchers in various fields of education have begun to explore how mobile technology can impact teaching and learning. In this chapter, we discuss the work of pioneering scholars in the area of emerging technology in K-12 education. Next, we describe the current scientific knowledge on the ways in which mobile technologies are used by students in K-12 education. We then review important research that highlights the added effects of mobile technology to support non-traditional learners. Recommendations for future lines of investigation and further reading are provided.

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BACKGROUND

The processes involved in student learning are now as never before. Delivery of information is more various, instantaneous, and itinerant and thus new ways of information delivery and instructional models are necessary to meet the needs of 21st Century learners. One method of meeting these needs is by using *mobile technologies*. Mobile technologies are digital devices that include tablets, personal digital devices, Chromebooks, and mobile phones. The use of these technologies in the classroom is commonly referred to as *mobile learning*. This chapter will focus on the use of mobile technology to engage students, enhance instruction, and support non-traditional students including those with disabilities and students who are non-native English speakers.

In today's society mobile devices have become a ubiquitous technology. For example, 88% of adults (Zickuhr, 2011) and 77% of teens (Lenhart, 2012) own a mobile phone. The most recent Speak Up Survey by Project Tomorrow found that over 80% of secondary students have their own device to use for learning. Further, more and more schools are purchasing tablets, Chromebooks, and mobile media players to augment classroom instruction (Herold, 2016). In spite of the increasing availability of mobile technology in learning environments, deliberate integration into daily instruction, by teachers, is not as prevalent. Teachers cite numerous concerns with the use of technology including readiness, lack of training, classroom disruption, cheating, and access to inappropriate content as barriers to consistent integration into instruction (Kim, Kim, Lee, Spector, & DeMeester, 2012; O'Bannon & Thomas, 2014; Thomas & O'Bannon, 2013; Thomas, O'Bannon, & Bolton, 2013). Despite these barriers, the constantly increasing functionality and decreasing cost of mobile devices is making them both accessible and valuable learning tools both in and out of the classroom (Thomas, O'Bannon, & Bolton, 2013). Moreover, researchers have shown increases in student motivation (Brown, 2008), and active participation (Kinsella, 2009) when technology is used in the classroom. Given the promise of mobile devices as instructional tools in K-12 education, it is important to discuss (a) pioneering work that has led to the use of mobile technologies, (b) stakeholder perceptions of using technology in the classroom, (c) how mobile technologies are being used, and (d) future research directions.

PIONEERING SCHOLARS

Marc Prensky, Mark van 't Hooft, and Liz Kolb were among the first educational researchers to advocate for the use of technology to meet the needs of the new learner in K-12 classrooms. While these researchers focus on different aspects of technology integration, collectively they account for important conceptual and empirical contributions that led to the acceptance of mobile devices as instructional tools. Instructional uses may include Internet research, communication, note taking, reading, organization, video-based instruction and more (Sansosti & Bedesem, 2015).

Marc Prensky is credited for coining the terms *digital natives* and *digital immigrants*. According to Prensky (2001), digital natives are of the generation born after 1980, whereas digital immigrants are of the generation born before 1980. Digital immigrants have to learn to adapt their environment and work at integrating technology into their daily lives. On the other hand, digital natives are characterized as immersed in technology including computers, videogames, digital music players, and mobile phones,