Chapter 33
Teacher Development, Support, and Training with Mobile Technologies

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ABSTRACT

Preparing teachers to integrate iPads into the classroom requires designing professional development that supports teacher knowledge development as well as the development of a teacher as metacognitive. In this chapter, the authors describe training and support that builds teachers' development of a Metacognitive Technological Pedagogical Framework (M-TPACK) for integrating iPads. The professional development emphasizes the metacognitive teacher with positive dispositions towards technology integration as a key factor in ensuring that teachers implement knowledge of content, technology, pedagogy, and students. Finally, this chapter presents authentic and relevant examples for teacher development with mobile technologies.

INTRODUCTION

Technological advancements have changed the way we communicate, learn, create, share, and publish information, and have even changed the way we live in the 21st century. Some predict that the number of mobile devices will exceed the entire planet's population at the end of 2013 (Cisco, 2012). The mobile learning (m-learning) transformation as well as the functionality and cost of mobile devices has made learning and education possible in diverse settings. Mobile devices have been changing the lives and learning of millions of people around the world in ways we could not have imagined a couple of decades ago. For example, a young woman in Bangladesh now

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has access to countless English language lessons and quizzes where before her only access to an education would be at a brick and mortar school to which she was forbidden to attend. Mobile technologies, once marketed primarily for entertainment for communication purposes, have actually come to play a significant role in economies and cultures (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2013). In addition to changing cultures and economies, mobile phones and tablet computers are used by educators around the world to access information, enrich students' education, and facilitate learning in various creative ways.

Mobile learning (m-learning) involves the use of mobile technologies, either alone or in combination with other information and communication technologies (ICT), to enable learning anytime and anywhere. Learning can manifest in different ways: people can use mobile devices to access educational resources, connect with others, or create content, both inside and outside classrooms. More and more schools are adopting m-learning devices because of portability, affordability, and flexibility factors. Cell phones, smartphones, iPods, Personal Digital Assistants (PDAs), tablets, and e-readers (i.e., iPad, Kindle, Nook) are increasingly becoming the teaching and learning tools of choice for today's K-20 educators. Mobile devices have the following common characteristics: they are digital, easily portable, are ubiquitous, usually owned and controlled by an individual rather than institution(s), can access the Internet, have multimedia capabilities, and can facilitate a number of tasks, particularly those related to communication.

Because m-learning technologies are more affordable and more easily managed than computers, m-learning requires reconceptualizing traditional models of technology use and implementation, as m-learning requires students to have uninterrupted, ubiquitous, and greater access to technology. Mobile learning technologies have tremendous potential for learning in innovative, creative, metacognitive, and rigorous ways. For example, the implementation of ConnectEd, a strategic initiative to connect 99% of American students to the internet within five years (Munoz & Sperling, 2013) will put more internet enabled devices such as iPads into the hands of more students. The ever-increasing availability of m-learning technologies in educational settings calls for policy makers to rethink m-learning's purpose in K-20 learning and requires a pedagogical framework for effective use of m-learning for teaching and learning purposes.

iPads are multifunction devices that can be used for everything from reading e-textbooks, document creation, video viewing, and creation to web surfing. iPads came to the market in 2010 with a promise to bring instant access to books, media, and affordable educational applications. The iPad allows for the user to move easily from reading an e-book to searching the Internet. Research on the use of mobile applications for academic purposes have demonstrated that effective and consistent use of particular applications will improve academic achievement (Perkins, Hamm, Pamplin, Morris, & McKelvain, 2011; Heinrich, n.d.; McClanahan, 2012). This research along with the promise of less expensive and updated e-books, hands-on personalized experiences, and the adaptive capabilities such as speech recognition and text to speech (D'Orio, 2011) have brought iPads into K-20 classrooms.

There is more to harnessing the power of the iPad than simply putting it in the hands of teachers and students. In a classroom where the teacher and students use iPads for academic purposes, the teacher needs to determine how they can best utilize the device to improve student achievement regarding curricular goals. This requires that the teacher develop knowledge of the device as well as the applications, and/or e-books that can support teaching and learning.

In this chapter, we will discuss the importance of teacher professional development and support with m-learning technologies and we will also offer suggestions for implementing iPads in