Chapter 4
Mobile Learning: Trends, Issues, and Challenges in Teaching and Learning

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ABSTRACT

The purpose of this chapter is to provide the readers with an overview of the association between mobile learning technologies and the nature of teaching and learning. In addition to the benefits of using mobile learning, the current educational and strategic uses of the mobile technology are discussed. Based on a review of scholarly publications, the chapter delineates the current trends and issues pertinent to the development of mobile learning or e-learning at large. By outlining some fundamental issues and considerations, the chapter further presents some challenges and impacts of mobile learning in teaching and training as well. Additional examples drawn from literature are included to explore the use of mobile learning in education and the strategies of effective mobile learning applications.

INTRODUCTION

The rapid development of wireless communication and mobile technologies has not only enabled people to conveniently access the information anytime and anywhere, but also extended online learning modes further from e-learning to m-learning (Jeng, Wu, Huang, Tan, & Yang, 2010). M-learning (Mobile learning) refers to the use of mobile or wireless devices for the purpose of learning while on the move (Park, 2011). Typical examples of the devices used for mobile learning include cell phones, smart phones, palmtops, personal digital assistants (PDAs), handheld computers, tablet PCs, laptops, personal media players (Kukulska-Hulme & Traxler, 2005), even digital cameras and USB keys (Low & O’Connel, 2006).
Mobile learning, however, is not just about the use of portable devices. It is also about learning across contexts (Walker, 2006) with the emphasis on facilitating and extending the reach of the teaching and learning, such as the knowledge construction, the information collection and exchange, the collaborative learning (Hine, Rentoul, & Specht, 2004), independent learning (Bull & Reid, 2004) and lifelong learning (Attewell & Savill-Smith, 2004). Winters (2006) addresses the nature of mobile learning as “mediated learning through mobile technology” (p. 9). Lan and Sie (2010) view mobile learning as a type of learning model that allows learners using mobile technologies and the Internet to obtain learning materials anywhere and anytime. Laurillard and Pachler (2007) define mobile learning as the digital support of adaptive, investigative, communicative, collaborative, and productive learning activities in remote locations. Yi, Liao, Huang, and Hwang (2009) describe that mobile learning is an array of ways that people learn or stay connected with their learning environments including their classmates, instructors, and instructional resources while going mobile. Brown (2005) indicates mobile learning as “an extension of e-learning” (p. 299). Peters (2007) views mobile learning as a useful component of the flexible learning model.

Seppala and Alamaki (2003) claim that, given that 98% of university students possessed cell phones, the instruction via mobile devices would play an important role in education. They indicate the core characteristic of mobile learning enables learners to be in the right place at the right time, that is, to be where they are able to experience the authentic joy of learning. Ozdamli and Cavus (2011) view the core characteristic of mobile learning are ubiquitous, portable size of mobile tools, blended, private, interactive, collaborative, and instant information, because the common use of telephones and messaging for facilitating friendships and socialization (Taylor & Harper, 2002) has established a role for the mobile telephone as a means of collaborative learning.

With recent innovations in program applications and social software using Web 2.0 technologies (e.g., blogs, wikis, Twitter, and YouTube) or social networking sites (e.g., Facebook), mobile technologies and devices have been more dynamic and pervasive and also promised more educational potential (Park, 2011). For example, advances in handheld devices have facilitated the use of multimedia in mobile applications, which allows mobile learners to have access to a wide variety of richly diversified learning resources (Huang, Chen, & Chen, 2009). BenMoussa (2003) identifies several benefits of using mobile applications, which generally permit users to control or filter the flow of information and communication using individualized or personalized devices. Even without the intervention of a teacher or instructor, mobile devices and applications can still be deployed as learning tools to facilitate learning activities.

Although mobile learning has increasingly attracted the interest of educators, other researchers (Uzunboylu, Cavus & Ercag, 2009) also warn only few studies have investigated educational outcomes of mobile learning. Chen, Chang, and Wang (2008) state that mobile devices for learning are limited by screen size, computational power, battery capacity, input interface and network bandwidth; therefore, how to adapt information for delivery to mobile devices has become a critical issue in mobile learning environment (Jeng et al., 2010). In addition to the integration of suitable software and novel mobile technologies, many educators and researchers (McConatha, Praul & Lynch, 2008; Motiwalla, 2007; Patten, Arnedillo-Sánchez & Tangney, 2006; Thornton & Houser, 2002) also point out the importance of pedagogical implications for mobile learning. As a result, how to combine appropriate pedagogical strategies for enhanced learning applications has become another critical important issue in mobile learning environment (Jeng et al., 2010).

Without a doubt, a deeper insight into theory-based research is required to better understand