Chapter 2
Internet Technological, Pedagogical, and Content Knowledge (iTPACK):
A Theoretical Framework for Mobile Learning

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EXECUTIVE SUMMARY

This case study focuses on using the Internet Technological, Pedagogical, and Content Knowledge (iTPACK) as a theoretical framework for mobile learning. First, the study examined iTPACK from two perspectives, synchronous and asynchronous, and discussed how both perspectives could be used individually or integrated to support a blended learning approach for mobile learning in formal and non-formal learning. Second, the case examined how iTPACK was used as the theoretical framework in a mobile learning case study on using text messaging as a teaching tool in a pre-algebra course at a community college with non-traditional students. Finally, the author offers thoughts on why iTPACK is an appropriate theoretical framework for mobile learning, and the implications of using iTPACK in non-formal and formal settings to supplement classroom instruction.

ORGANIZATIONAL BACKGROUND

The advent of smartphones, tablets, and iPads, and "always connected devices" coupled with broadband wireless and Wi-Fi technologies to support these devices have made them viable tools to support teaching and learning in the 21st century. The more these technologies are infused in teaching and learning the more we understand the paradigm shift from learning in a traditional classroom to learning anywhere and at any time. This new and expanding phenomenon supported by smartphones, tablets, iPads and different wireless technologies is what is evolved into what we now know as mobile learning (Muyinda, 2007). Since 2009, The Horizon Report has identified mobiles and mobile computing as one of six areas of emerging technologies that will significantly impact education within a year or less (Horizon Report, 2009, 2010, 2011). Mobile learning in terms of its hardware is still evolving as an education tool. This continuous change makes mobile learning pedagogy both a challenge and a benefit to 21st century learning (Muyinda, 2007). The challenge is to figure out the pedagogical uses and how to maximize its uses in teaching and learning. This chapter seeks to address some of those issues through the theoretical framework of iTPACK (see Figure 1). As a benefit, it provides educational systems with a delivery structure of learning anytime and anywhere. This also creates pedagogical issues for educators in the field of education, which are addressed by the iTPACK theoretical framework.

MOBILE LEARNING LITERATURE REVIEW

When mobile devices are used in education, it falls within the category of mobile learning. What is mobile learning? Mcconatha and Praul (2007) define mobile learning as learning accomplished with the use of small, portable computing devices. Lee and Chan (2007) define it as "the acquisition of any knowledge and skill through using mobile technology, anywhere, anytime." O'Malley et al. (2003) define mobile learning as any learning that happens when the learner is not at a fixed, predetermined location via mobile technology. While the definitions from these authors do not provide a concrete definition, they all seemingly agreed that mobile learning is learning via a mobile device. Traxler (2007) states that there are some people who view mobile learning as mobility of learning in terms of the learner's experiences of learning with mobile devices. Traxler also believes that mobile learning support a wide variety of conceptions of teaching uniquely placed to support learning that is personalized, authentic, and situated. In their study of using mobile devices, Chan and Lee (2007) identified seven key attributes of mobile learning; spontaneity, personalization, informality, context-sensitivity, portability, ubiquity, and pervasiveness.

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