Chapter 107
Envisioning Mobile Learning as the Future of Teaching and Learning via Technology:
A Literature Review of Mobile Learning

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ABSTRACT

Technology has played a key role in reshaping the way education is being delivered in university environments. Mobile technologies are one of the latest technologies to enter the higher education arenas around the world, offering great potential for teaching and learning. Students and teachers have been using mobile devices for formal and informal collaboration, communication, and connectivity within learning environments for a couple of decades without recognizing it as mobile learning. Mobile learning needs to be researched and theorized in order to be included in formal educational Information and Communication Technologies and its full potential harnessed for the future generations. A number of mobile learning researchers borrowed traditional learning models as theoretical foundations for mobile learning research. However, theories from a diverse range of subject areas such as Education, Information Systems, Human-Computer Interaction, and Telecommunication Engineering have also been used as the basis for mobile learning projects around the world. This incorporation of a diversity of disciplines and subjects has made mobile learning a multidisciplinary research field. This chapter aims to review the current mobile learning theories, models, and frameworks with the lens of mobile learning characteristics and challenges pointed out by prominent mobile learning researchers across the world in order to present the case of mobile learning as the future of teaching and learning.

DOI: 10.4018/978-1-4666-8789-9.ch107

1. INTRODUCTION

Teaching and learning in higher education are being transformed to embed appropriate technologies and pedagogies suitable for a diverse range of students and teachers from multiple social and cultural backgrounds. Technology is a key player in today's higher-education environments with a huge potential to transform the future of university teaching and learning environments (Jeffrey, 2009). It is important to research and conceptualize the latest pedagogical technologies before introducing them in mainstream education. For the past two decades, mobile devices have found their way into formal and informal spaces of the teaching and learning community. Since mobile learning has surged in higher education as a silent revolution, there are pressing needs to research and conceptualize mobile learning to assist education providers and administrators to include mobile learning in mainstream education (Traxler, 2009).

Mobile learning has been in practice in multiple contexts, including formal and informal learning spaces (Pachler, Bachmair, & Cook, 2010; Pachler, Cook, & Bachmair, 2012). The term 'mobile learning' was coined in the late 1990s, when advancements in smart phones and mobile devices gave mobile learning researchers new opportunities to run mobile learning pilot projects (Kukulska-Hulme, Agnes & Traxler, 2005; Ozdamli, 2012). The idea of mobile learning is not completely new; nor did it emerge only with the advent of smart phones. As Laurillard (2009) argues, the idea of a printed book was the beginning of mobile learning as it introduced the concept of mobility in learning; the device is replaced by smart phones or tablet mobile devices used by today's learners (Vavoula, G., Pachler, & Kukulska-Hulme, 2009). A review of the extant mobile learning research literature shows that researchers may have borrowed the theoretical stance from other disciplines such as Education, Engineering, Information Systems and Human-Computer Interaction, with already-established theoretical bases (Kukulska-Hulme, Agnes & Traxler, 2005). However, the development of mobile learning theory is also in progress as a number of researchers have proposed theories and conceptualizations of mobile learning in the form of frameworks and models (Keskin & Metcalf, 2011; Ozdamli, 2012).

In the case of mobile learning theory development, there are a number of challenges other than just adapting learning theories from already-established disciplines as Traxler (2009) theorizes that mobile learning theorists and researchers should consider scalability of mobile learning implementations and blending mobile learning with other forms of learning. Previously, mobile learning researchers were focusing only on differentiating technology-oriented mobile learning from pedagogy-oriented mobile learning. Mobile learning theorists should carefully test the adaptation of theories from other disciplines such as Education, Engineering and Human Computer Interaction - with the contributions of mobile learning's unique challenges to come up with the mobile learning theories to be generalized on a large scale. This chapter also applies the lens of these unique mobile learning challenges to these newly formed mobile learning theories, models and conceptualizations.

This chapter has been organized in the following sections; the research method is discussed in the next section. Section 3 highlights how mobile learning fits in the mesh of educational technologies. Section 4 discusses various mobile learning definitions. Sections 5 and 6 review the relevant literature and discuss the theoretical underpinnings of mobile learning, followed by the concluding sections and references to the scholarly resources.