

Chapter 1

An Analysis of Mobile Learning in Education, Business, and Medicine

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ABSTRACT

This chapter examines m-learning within education, business, and medicine. Specifically, three types of mobile devices were examined within the three subcategories of m-learning: the mobile phone or smartphone, the iPod, and the PDA. A mixed method design was used to review 40 m-learning articles and to synthesize the literature to explore m-learning projects around the world. The literature revealed that m-learning was used in many parts of the world, and most in North America, within all three fields. There were also numerous projects in Europe, Asia, the United Kingdom, and in Oceania. Mobile phones, smartphones, iPods, and PDAs were used in all three fields.

INTRODUCTION

Following on the academic heels of blended learning, mobile learning, or m-learning, is the zeitgeist

of teaching and learning in the 21st century. From kindergarten to graduate school, learners are using m-learning hardware and software to enhance their own and others' learning processes (Laouris & Eteokleous, 2005). The idea of m-learning was rooted in the early development of hardware

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devices but has been only in the last decade that we have seen the software, the applications, take flight in the hands of the Net Generation and take off in the hands of the Gen Xers and Baby Boomers (Ally, 2009; Horn & Johnson, 2008; Kelly, McCain, & Jukes, 2009; Palfry & Gasser, 2008; Tapscott, 2009).

Consider these typical scenarios. Imagine you are a university student studying a second language. While sitting in a coffee shop over a leisurely cup of coffee, you decide you have some time to study, so you pull out your cell phone. Using your high speed Internet Explorer Mobile software, you download a grammar lesson, review it, and then proceed to test your knowledge with a self-assessment, also downloaded to your cell phone. Or you are a family physician with a very busy practice. While examining a patient you decide to prescribe a new drug. You are not sure of possible drug interactions with the patient's existing medication, so you use your Personal Digital Assistant to browse a bookmarked pharmaceutical website, and check for drug contraindications. You do not need to excuse yourself to consult a large, cumbersome volume of drug listings, and can be on to your next patient that much sooner. You could be a business person waiting in the airport for your flight home. You have an hour before you leave, so out comes your iPod and your earphones. You listen to the latest podcast from your company's president, with the details of the last quarter's performance. The picture being painted here is one of m-learning, otherwise known as mobile learning or handheld learning.

Laouris and Eteokleous (2005) ran a Google search for mobile learning in January 2005 and received 1,240 items. After running the same search five months later, it resulted in 22,700 items, proving that the interest in mobile learning was growing rapidly and exponentially. At the same time, a Google Scholar search resulted in only 231 items. The researchers concluded that mobile learning means different concepts to different people, depending on context. They

collated numerous definitions of mobile learning, and found that researchers such as Pinkwart, Hoppe, Milrad, and Perez (2003) and Traxler (2005) generally agreed that the basic premise of mobile learning involved e-learning that used mobile devices and wireless transmission. Our own search on the words "mobile learning" in January 2010 resulted in 99,600,000 items on Google and 1,250,000 items on Google Scholar. This indicates an enormous increase in the interest in mobile learning over the last five years.

A mere two years after asserting that mobile learning was basically a more transportable version of e-learning, Traxler (2007) opined that mobile learning was difficult to define, and his opinion had altered:

Some advocates of mobile learning attempt to define and conceptualise it in terms of devices and technologies; other advocates define and conceptualise it in terms of the mobility of learners and the mobility of learning, and in terms of the learners' experience of learning with mobile devices. (p. 1)

He went on to argue that mobile devices create not only new forms of knowledge and new ways of accessing it, but also new forms of art and performance, commerce and economic activity. He theorized that mobile learning is not really about "mobile" or "learning", but is part of a new mobile conception of society.

Quinn (2000) theorized that m-learning was the intersection of mobile learning and e-learning. It was learning independent of location in time or space. Quinn (2000) predicted that one day mobile devices would have wireless networking, would always be "on" (as opposed to dial-up), would have high resolution colour screens, and would act as tiny yet powerful computers. Of course these devices now exist, not many years later, as a testament to the fact that the technology enabling m-learning to exist is growing exponentially.

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