

Is Air Force PME Ready for mLearning?

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ABSTRACT

The aim of this paper is to highlight key aspects discovered through a survey of The Air University (AU) students. The ultimate goal of this study is to discover important factors that could influence the success of implementing an mobile learning (mLearning) initiative as part of a learning and development strategy. The paper represents quantitative data collected from students attending Air Force Professional Military Education (PME) courses and focuses on their use of mobile devices and their perception of mLearning services. The study was administered to one class from each of the following schools: Air War College, Air Command and Staff College, Squadron Officer School, Air Space and Basic Course, Noncommissioned Officer Academy, and Airman Leadership School. The study is based on valid responses from 1,340 students. The results described in this article provide an understanding of specific parameters, such as the availability of mobile devices, usage of the devices, attitudes concerning technology, and opinions about things such as pricing and perceptions of mLearning. The study clearly suggests that AU students possess the mobile technology necessary to access learning 24/7, and that they are ready to embrace an mLearning strategy.

KEYWORDS

Mobile learning, mLearning, perception of mLearning, attitudes, mobile technology

INTRODUCTION

Mobile learning can be defined as “the acquisition of any knowledge and skills through the use of mobile technology, anywhere and anytime” (Geddes, 2004, p. 1). Mobile devices, whether smartphone or tablet, are becoming commonplace with U.S. sales in the millions. As this trend continues, exponentially growing numbers of people will have the ability to access their financial information, connect socially, check email, and browse the Web. Morgan-Stanley’s Mobile Internet Report

(2009) estimates approximately one billion units/users access the Web, mostly via “desktop Internet” on PCs. Morgan-Stanley proclaimed that we are at the beginning of a new computing cycle that roughly approximates the decade when ten times the number of devices available today will be attached to the Web. Google’s CEO Eric Schmidt stated that their policy is “mobile first,” meaning that their development efforts target mobile devices first (Hamblen, 2011).

As the boom in mobile devices continues, so do the advantages for learning. One of the most important of those advantages is the convergence of a multitude of emerging technologies, to include Web 2.0 tools. According to the Horizon Report, (2011, p.12) mobile devices continue to warrant close attention as an emerging technology for teaching and learning. The practice of blending these tools with classroom instruction un-tethers users for “24/7, anywhere, anytime” access to their learning. Mobile devices also provide capabilities to deliver just-in-time teaching (JiTT), connection with faculty and students, enrollment options, assignment schedules, and more.

The information in this article represents data collected from a study conducted on students’ perceptions of mobile learning at AU. The goal of this study was to discover important factors that could influence the success of implementing an mLearning initiative as part of a learning and development strategy. The objectives of this study were to explore the uses of mobile-device technology by AU students and to determine student perceptions concerning the use of mLearning services.

METHODOLOGY

The study was conducted with students from AU at Maxwell-Gunter AFB, in the spring of 2011. The study was available through Web posts on AU’s Blackboard™ and through Web links to the Allegiance (Engage) survey

tool. From a population of 3,182 students (enlisted and officer), 1,340 students (42%) volunteered to participate in the study. The study consisted of 17 questions collecting data in three categories: mobile-device availability, use(s) and price of mobile devices, and attitudes and perceptions of mLearning/mobile services. The study used a branching methodology to guide the respondent through the questions based on how those prior were answered. Students were asked to respond to questions requiring one or multiple responses. Some questions provided an “other” option for additional contribution of information, ideas, or commentary.

FINDINGS

Of the respondents, males comprised 77% and females, 23%. Furthermore, 76% were between the ages of 25 and 45 and their highest education levels are as follows: high school diploma = 44%; associate’s degree = 23%; bachelor’s degree = 15%; master’s degree = 14%; post-graduate work = 1%; and doctorate = 1%. Air Force enlisted personnel made up 82% of the study respondents, with officers making up the remaining 18%. This demographic data was collected to demonstrate the diversity of student-respondents.

MOBILE-DEVICE AVAILABILITY, USAGE, PRICING

Availability

Today, it is not uncommon to find someone carrying a mobile device. According to the Digital Buzz Blog (2011), over 70% of the world’s population now has a mobile phone, equating to over 5 billion mobile subscribers, and in places like the United States, that number jumps to a staggering 90%. Mobile-device technology has increased exponentially in a short span of time. As people continue to use mobile technology rather than remaining tied to a desk, it seems the next logical step would be to embrace and harness this emerging technology for teaching and learning. Today, a learner can access the Web to read and edit articles, view videos, and more, all via one piece of hardware that fits in a shirt pocket. The study shows that 95% of all respondents own some type of mobile device, such as a handheld computer (pad/tablet, netbook/notebook, etc.), mobile phone, e-reader, or MP3 player. The data also indicates the students possess two or more of these devices. The top five devices owned by the respondents are: iPod = 50%; smartphone = 53%; mobile phone = 49%; MP3 player =

30%; and iPod Touch = 27%. While the sales of tablets are increasing, only 8% of the respondents currently own a device of this type. According to research by the Pew Internet & American Life Project (2011), the tablet is quickly becoming a device of choice, increasing its penetration in the market from 4% to 7% over a four-month period. As AU continues to research solutions to deliver electronic books to students, it is important to note that 16% of the respondents own some type of e-reader device.

Usage

The study further examined whether the respondents access the Internet via their mobile devices, what services are accessed, and where they access them. The study revealed 81% of respondents access the Internet using their mobile devices. When asked a series of questions about mobile services used, 74% responded that they send or receive text messages from their mobile devices, and 76% send between 1 and 10 multi-media messages (MMS) per day. Also examined was the students’ use of social networks. This data revealed 99% of the students subscribed to Facebook, while 13% have Twitter accounts. With so many users accessing the Internet via their mobile devices, understanding from where is equally important. The locations students most access the Internet using their mobile devices are: home = 87%; work = 50%; and school = 26%. According to Malladi and Agrawal (2002), mobile wireless technologies consist of two aspects: mobility and computing. Mobile computing represents users’ continuous access to network resources without limitation of time and location. For students today, access to the Internet is essential. Mobile devices provide users with freedom from being connected to a desktop computer and the capability to access information quickly, anytime and anywhere.

Pricing

There are fees attached to most mobile-device services, such as data and Internet usage. Of those responding, 29% said they would be willing to incur additional Internet-service-provider fees to access learning content, with the remaining 71% responding that they would be unlikely to pay additional fees for that purpose.

ATTITUDES AND PERCEPTIONS OF mLEARNING AND mLEARNING SERVICES

When asked, “Have you been enrolled in a course(s) that utilizes mLearning?” 58% answered, “No” and 31% answered, “I am not sure.” In this section, students provided responses based on their attitudes toward mLearning and their perceptions of mobile services.

Attitudes

Examining the students’ attitudes toward mLearning revealed the majority, 73%, agreed that mobile technology, effectively and judiciously used, could improve the quality of instruction. Additionally, 58% of the students would like to have the opportunity to receive instruction via a mobile device. However, correlating to the willingness to pay additional data or Internet fees to access learning content, 49% would not be willing to incur additional costs associated with downloading course materials to their mobile devices.

mLearning Service

The majority, 68%, of students reported the most appealing aspect of mLearning is availability. For students, the availability of content, elimination of boundaries, absence of time constraints, improved communication, increased independence, improved access to instructors, and collaboration with fellow students are the primary expectations for those who feel mLearning can increase the quality of instruction. Furthermore, as added benefits, students’ study habits can be modified to fit their needs, not limited to the delivery of a single kind of educational experience, thus increasing motivation to discover and learn.

Mobile Services

For this question, the students were given a list of possible mobile services and asked to rank each, from most to least appealing, based on their knowledge of each mobile service’s various aspects. See Figure 1 for the results. Mobile technologies support learning experiences that are collaborative, accessible, and integrated with the world beyond the classroom (ELI, 2006). The responses of the students indicate they expect a strong variety of capabilities and support for mobile/mLearning services. Their expectations can be supported by 6 major types of learning: Behaviorism, to support quick feedback or reinforcement; Constructivism, to support immersive experiences such as simulations or games; Situated

Learning, to support authentic learning or context-aware environments; and Informal/Lifelong and Collaborative Learning, as well as Support/Coordination, to provide just-in-time access to learning resources, news, information, and planners (Corbeil, Valdez-Corbeil, 2007). Although there are challenges associated with mLearning, there are also numerous benefits such as continuous, ongoing, and flexible learning, the ability to reach back and reinforce the learning, access to information and references, just-in-time-learning, high level of interest for tech-savvy students, and the facilitation of collaboration through synchronous and asynchronous communication.

The implications of mobile learning are broad and the potential impact on learning is profound (Corbeil, Valdes-Corbeil, 2007). The impact of the mobile device as an integrated component of blended learning provides an “out-of-the-classroom” alternative to assessment, collaboration, communication, research, and study capabilities. Watson (2008) defines blended learning as the combination of classroom interaction and facilitated instruction with the top features of online, or Web, technology. A great example of a blended-learning framework is that of the JiTT framework created by Gregor Novak (2002), which shows what can be done with Web technologies and the mobile device. This blended framework offers benefits to students such as increased study time and opportunities to work collaboratively to solve problems. Furthermore, it offers benefits to faculty to better meet students’ learning needs, such as understanding what students are thinking and feeling, and to adjust the instruction based on the students’ comprehension of the subject. In addition, mobile learning is adaptable to, Behaviorism for providing instant feedback, and Constructivism for utilizing immersive environments and simulations. It also complements face-to-face learning by providing cost-effective methods to reach students outside the classroom.

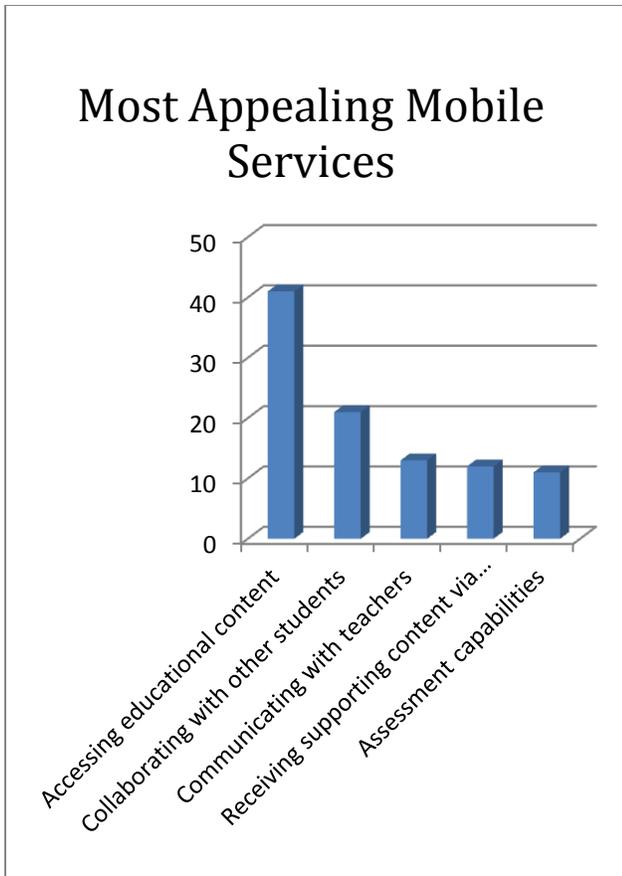


Figure 1

CONCLUSION

This study provides a comprehensive snapshot of the availability and usage of mobile devices, and the attitudes and perceptions of mLearning at AU. The findings indicate the majority of AU students own a variety of mobile devices, in some cases, more than one. Understanding which devices students are using is important when considering an mLearning solution. Internet access has become an invaluable tool that can make a difference in how instructors teach and students learn. The study also shows that the majority of AU students access the Internet from their mobile devices. Additionally, their present use of text messaging and social networking sets the stage for a portable, collaborative learning environment based on sharing and communication. The locations from which students access the Internet via their mobile devices are outside the classroom, further confirming how mobile devices provide anytime, anywhere access for users on the go. Although the majority of respondents have never been enrolled in an mLearning course, they believe it could improve the quality of instruction. This data reinforces the importance of meeting student expectations, making content available when and where it is needed. Mobile-device users also have high expectations of the mobile services available to them, such as the capability to collaborate with faculty and other students.

This study suggests that students are open to mLearning and have positive attitudes about its potential to enhance the learning experience. The study also serves as a foundation on which to base discussion on the possibilities for an mLearning initiative, supporting a blended-learning environment at AU.

Disclaimer

The opinions and viewpoints expressed in this paper are solely those of the authors and do not reflect official policy or position of the U.S. Government or the Department of Defense (DOD), the United States Air Force, Air Education and Training Command, or The Air University. Cleared for public release (AETC-2011-09).

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