Mathematics Students’ Readiness for Mobile Learning

Ahmad Abu-Al-Aish, Department of Mathematical Sciences, Brunel University, Uxbridge, UK
Steve Love, Department of Information Systems and Computing, Brunel University, Uxbridge, UK
Ziad Hunaiti, Knowledge Well Group Limited, Chelmsford, Essex, UK

ABSTRACT

Mobile learning technologies and wireless networks are being increasingly used in educational settings. Mobile learning (M-learning) through wireless technology can deliver information access to anyone any time in any place. A study was conducted to investigate the readiness of Mathematics students in Brunel University to move towards using Mobile Learning in their studies, and also to explore the factors that might affect the implementation of this technology. A total number of 82 students participated in an online questionnaire in May 2011. The questionnaire was designed in order to determine the availability of the appropriate devices, students’ perceptions about M-learning and their expectations of mobile learning services. The findings of the study show that students have a positive perspective of using M-learning and they look at it as a support system for traditional class-based learning.

Keywords: E-Learning, M-Learning, Mobile Device, Readiness, Student’s Perception

INTRODUCTION

Computing wireless devices have become ubiquitous on today’s college campuses (Motiwalla, 2007). As such, computers and the internet are essential educational tools which offer efficient use of time and ease of access to educational materials for students and staff alike. In addition, the advent of mobile devices like smart phones, PDAs and tablet PCs give people the freedom to use what they need where and when it is needed (Trifonova & Ronchetti, 2007). Mobile devices can extend the learning process behind university settings by providing learning materials in a flexible, portable and independent learning environment; they can allow students a method of communication both between themselves and between them and their lecturers (Khaddase, Lanham, & Zhow, 2009). In addition, these devices also give students and lecturers an opportunity to exploit their spare time while traveling to work on an assignment or lesson preparation (Virou & Alpis, 2005).

Mobile learning (M-learning) is regarded as a new stage in the development of computer support and distance learning (Georgieva, Trifonva, & Georgiev 2006). Milrad (2003) defines M-learning as E-learning using mobile
devices and wireless transmission. Salmon (2004) considered it as the fourth generation of the electronic learning environment. It can be defined as any sort of learning that occurs when the learner is not fixed by location or time, it can happen anytime, anywhere, with the services offered by mobile technology devices that present learning content and allow wireless communication between lecturers and students (Dye, Solstad, & K’Odingo, 2003).

M-learning is seen as making course materials and educational resources readily available and easily accessible. It provides an option for self-study and can work as an evaluation and feedback tool (Eschenbrenner & Nah, 2007; Jacob & Issac, 2008). In addition, M-learning facilitates the interaction between students and teachers in the classroom and allows the exchange of information outside the university (Lam et al., 2011).

However, in spite of the rapid growth of mobile devices and network availability within university campuses and between students, there has been a shortage of academic studies that investigate the implementation of mobile learning in higher education, especially in learning and teaching mathematics for undergraduate students. Here, M-learning research is still in its infancy (Motiwalla, 2007).

LITERATURE REVIEW

A number of studies have been carried out to examine students’ readiness for mobile learning. Trifonova, Georieva, and Ronchetti (2006) investigated the use of M-learning in two European universities; University of Trento, Italy and University of Ruse, Bulgaria. Students were asked about the availability of mobile devices, their opinions on learning systems and the services that mobile learning should supply. The findings indicate that students’ attitude toward M-learning is dependent on the way people have used E-learning. For example, students who use E-learning tools and are comfortable with these types of services have a positive attitude about M-learning. Students expect M-learning to provide several services with integration to E-learning solutions. Also the prices of the suitable device as well as the price of the services being supplied are important factors for adoption of a successful M-learning application. In terms of gender, the study found that male students were more interested in using an M-learning system more than female students, who stated a preference for the traditional class-based approach to learning.

In a similar study, Corbeil and Valdes-Corbeil (2007) investigated if distance-learning students and faculty members were ready to make the jump from E-learning to M-leaning. An informal survey was conducted to determine students’ and faculty members’ use of mobile devices in their learning and teaching activities. The results indicated that neither students nor faculty members had fully integrated mobile technologies into their teaching and learning activities. They used their mobile devices at work and for entertainment purposes only; however, a high proportion of students felt that they were ready for M-learning.

Jacob and Isaac (2008) investigated attitudes towards mobile device usage for mobile learning purposes among undergraduate students in a Malaysian university. The results indicated that students were fully ready for M-Learning and the students expected that true M-learning would be a popular trend within three to five years. They also stated that they thought M-learning would be a useful additional tool for making the learning process more enjoyable.

In another study, Al-Fahad (2009) investigated students’ attitude towards and perception of the effectiveness of M-learning. The author conducted a survey with one hundred and eighty six undergraduate students from different colleges in order to understand how they used mobile technologies in their learning environments. The results illustrated that M-learning is widely accepted by the students’ community. Students agree that wireless networks increase the flexibility of access to learning resources. Also, students are interested in using M-learning tools via laptops, mobile phones and PDA’s to
Adaptation Technologies in Mobile Learning
Paola Salomoni and Silvia Mirri (2011). *Open Source Mobile Learning: Mobile Linux Applications* (pp. 18-34).
www.igi-global.com/chapter/adaptation-technologies-mobile-learning/53965?camid=4v1a