Introducing Mobile Technology as a Tool for Teaching

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Abstract

In this concept article, the advance of technology and Short Message Service (SMS)-based learning system is presented. Emerging development in mobile learning and technology has offered a viable opportunity for education. Mobile devices are playing a vital role in every student's life, especially mobile phones. Unique features of mobile phones offer great opportunity towards learning mechanism. The flexibility and reliability of SMS as a communication tool has enabled it to be used as a learning tool. SMS-based learning system can be conducted with normal ordinary mobile phones since not all students are able to own expensive mobile phones or Personal Digital Assistants (PDAs). Course contents can be delivered to the students via SMS, also known as interactive teaching whereby the messages are in push-and-pull mode. This article introduces a new pedagogical innovation in existing learning system from conventional teaching towards mobile learning. This article not only offers a technical requirement of mobile learning system, but also teaching and learning strategies which academicians may wish to employ.

Keywords: mobile device, mobile learning, interactive teaching

Abstrak

Dalam kertas konsep ini, kemajuan sistem pembelajaran yang berasaskan teknologi dan Khidmat Pesanan Ringkas (SMS) dikemukakan. Pembangunan yang kian rancak dalam pembelajaran dan teknologi mobil telah menawarkan peluang yang berdaya maju untuk pendidikan. Peranti–mobil memainkan peranan penting dalam kehidupan setiap pelajar, terutamanya telefon bimbit. Ciri unik telefon bimbit memberi peluang besar kepada mekanisme pembelajaran. Kefleksibelan dan kebolehpercayaan SMS sebagai alat komunikasi telah membolehkan ia diguna sebagai satu alat pembelajaran. Sistem pembelajaran berasaskan SMS boleh dijalankan dengan menggunakan telefon bimbit biasa yang normal memandangkan bukan semua pelajar mampu memiliki telefon bimbit yang mahal atau Alat bantu Peribadi Berdigital (PDA).

Kandungan kursus boleh disampaikan kepada pelajar melalui SMS, juga dikenali sebagai pengajaran interaktif yang mana mesej berada dalam mod balas-membalas. Artikel ini memperkenalkan satu inovasi pengajaran baru dalam sistem pembelajaran yang sedia ada daripada pengajaran konvensional kepada pembelajaran mobil. Artikel ini bukan hanya menawarkan keperluan teknikal bagi sistem pembelajaran mobil tetapi juga strategi pengajaran dan pembelajaran yang mungkin ingin diterap oleh ahli akademik.

Kata kunci: peranti mobil, pembelajaran mobil, pengajaran interaktif.

Background

A study done by the Malaysian Communication and Multimedia Commission (MCMC) found that in the first quarter of year 2011, the penetration rate for cellular phone in Malaysia is 121 per 100 inhabitants. Penetration rate over 100% occurs because of multiple subscriptions. The changes of lifestyle and the advances of ICT have influenced our education systems too. As discussed earlier, mobile technologies, particularly mobile phones combine both ubiquity and utility in the sense of communication and computation.

These advantages give us great opportunities to employ mobile technologies widely especially in education than just as communication tools. There are two major factors influencing the effectiveness of the style of messaging in mobile learning. Those are technology readiness (TRI) and interactive multimedia courseware or content. TRI refers to the education theories such as behaviourism, constructivism, cognitivism and interactive whereas multimedia courseware refers to the content i.e., question and answer.

Therefore, this concept paper would like to introduce a new pedagogy in teaching and learning process which is known as Short Message Service (SMS)-based learning system or m-learning. This is because m-learning has the potential to be a mechanism. Firstly because it is of ubiquitous, at anytime and anywhere we want. This statement was supported by Trinder et al. (2008) who said that more emphasis should be placed on mobile devices and universal free access to high-speed network from anywhere within the campus. The second point is flexibility, means that flexible time

in delivering course content. Chan and Milrad (2006) used the term "seamless learning" to describe these new situations. Seamless learning indicates that student can learn wherever and whenever they are curious in a variety of scenarios.

Thirdly is affordable meaning that SMS can be supported by all ordinary mobile phones. According to Roschelle (2003), research attention should be directed at identifying those simple things that technology does extremely and uniquely well, and to understand the social practices by which those new affordance become powerful education interventions. Apart from that, mobile learning is also faster and cheaper which does not rely on internet connection. These statement supports by Markett et al. (2006), implying that it allows for low-cost implementation of real time and text-based interaction.

Last but not least, mobile learning requires simple mobile technology and the learning process is more enjoyable. Based on James and Katz (2008) contention by using technology, children are feeling more of sense of mastery and good about themselves. Kukulska-Hulme, Traxler and Pettit (2007) maintained that mobile technologies can support diverse teaching and learning styles and blend themselves particularly well to personalised, situated, authentic and informal learning.

Conventional Teaching versus M-Learning

There are several types of learning systems such as conventional teaching, instructional learning, electronic learning and mobile learning (Alonso and Norman, 1996). According to past researches, there are some disadvantages found in traditional teaching or conventional teaching. For example, poor interaction, learning is done in an asynchronous mode, lack of learning resources, poor feedback from students, etc. Therefore this study emphasises in utilising mobile technology for educational purposes. Pursuant to Adewunmi et al. (2003), instructors can incorporate multimedia demonstrations in their lectures and receive real-time feedback from their students using quizzes or surveys. In fact with mobile technology, learning can be done at anytime and anywhere we want (ubiquitous) and it supports continuous learning. As such, this study will offer a new way for teaching and learning system by delivering course content effectively.

According to Domask (2007) and Renea (2005), all teaching methods can be classified as traditional or non-traditional. The traditional method synonyms with the conventional lecture-based method, which is known as teacher focused. Furthermore, Garcia-Cepero (2008) and Renzulli (1999a, 1999b) concluded that lecture method does not meet the multiethnic needs of students' learning and limits the construction knowledge because rote and passive learning characterised it. Therefore, Conner (2004) argued that a learner-centered teaching method would be most appropriate at the higher education level, because students are mostly adults who bring diverse ethnic experiences that can be activated and applied to engage them in learning and in the construction of knowledge.

Allen and Presnal (2000) emphasised that there is a positive correlation between the technology and accessibility of information in education. Bridges.org (2001) found that "e-readiness assessments are a valuable tool to gain more information, region specific understanding and to develop an action plan". Sachs (2003) stated that if information and communication technologies are utilised they could help create a trained, educated and healthy workforce who are capable of building a vibrant and successful economy. Thorton and Houser (2002, 2003, 2005) have developed some innovative projects of using mobile phones to teach English at Japanese University. Levy and Kennedy (2005) have created similar programme for Italian learners in Australia, sending English vocabulary words and idioms, definitions and example sentences through SMS and scheduled pattern of delivery, and requesting feedback in the form of quizzes and follow up questions.

During the past six years, the advance changes in mobile devices lead to rapid changes of student demographic and increased access level to information and communication technology (ICT) in the classroom- presenting an extraordinary opportunity to develop interactive classroom systems and to enhance students' learning experience (Schwabe, Goth and Frohberg, 2005; Scornavacca, Barnes and Huff, 2006). Language classroom interactivity has a number of significant benefits: it promotes an active learning environment, provides greater feedback for lecturer, increases student motivation and a learning community (Mazur, 1998; Hake, 1998; McConnell et al., 2006; Bishop, Dinkins and Dominick, 2003; Angelo and Cross, 1993).

Classroom Feedback System (CFS) has possible technology affordance which enables efficient interaction in large classes. CFS technologies have been used since the sixties (Judson and Sawada, 2002; Peneul, Roschelle and Abrahamson, 2005) allowing students to respond to questions and the results are processed and displayed for the use of the lecturer and the class as a whole. The positive outcomes from CFS technologies are reported to have been improved understanding of important concepts (Peneul, Roschelle and Abrahamson, 2005), increased student engagement and participation (Freeman and Blayney, 2005), improved quality of discussion in the classroom and a better teacher awareness of student difficulties (Peneul, Roschelle and Abrahamson, 2005).

Research Objectives

The objective of this study is to introduce new pedagogy and course content delivery for USM students. The motives of introducing and delivering course content are:-

1.   To introduce new pedagogy in existing teaching and learning system.
2.   To apply, analyse and evaluate the application of SMS-based learning system.

Research Methods

This research uses quantitative and qualitative approaches which attempt to distinguish the relationship of existing variables. The aim of the study is to provide an effective design of mobile learning which is easy to understand and remember, short and simple, time-saving and most importantly, ubiquitous. Questionnaire will be used as the data collection instrument for this study. There are two sections in the questionnaire which are demographic and Likert-type questions. The first section will exhibit respondents' information regarding gender, age, marital status, income level and mobile phone ownership. The second part which are Likert-type questions are divided into three sections which are learners' characteristics, learning design (content) and acceptance level of learners. Items used in this study are adopted from the study conducted by Holton, Bates and Ruona (2000). Their instrument offers a high level of

confidence that the items being adopted will work well in this new learning environment (Mobile Learning via SMS).

In this study, the researchers added some other relevant items which focus on mobile learning environment. Some other relevant items based on educational theories are also emphasised such as behaviourism of students, constructivism and cognitivism which are more related to mobile learning. Researchers will conduct focus group interviews to determine the importance of SMS learning system in view of distance learners. This study is a preliminary research to recognise students' acceptance and readiness towards learning via mobile phones. Thus, it involves interactive communication whereby the students are able to receive SMS and also can ask and get unlimited questions and answers. Pursuant to Munirah et al. (2010), by using mobile learning, learners can easily get any information that they need at anytime and anywhere. Learners would also like to take other mobile learning assisted courses if the courses are relevant to their learning needs. In short, the SMS educational contents received through their hand phones are easily remembered.

Contributions

Emerging development in mobile learning and technology has offered a viable opportunity for education. Mobile phones are multi-function tools which enable learners to learn at anytime and anywhere. According to Brown (2005), mobile applications are known as the most useful and convenient way for teaching and M-Learning is a form of e-learning that employs wireless communication devices to deliver content and learning support. Moses (2008) stated that mobile learning represents exciting new frontier in education and pedagogy. The purpose of the study is to mainly fabricate pedagogical innovation through education principle and the strategies. This study is conducted based on interactive mode and the messages are in push-and-pull mode. It means that learners will respond to the task and receive feedbacks from the lecturer for their performance. Therefore, researcher is able to know learners' usage habits, learning preference and their wishes.

Conclusion

The primary factor that influences learner's characteristics towards learning is learner's background. The items measured in this study could identify the most influent factor for learning via SMS, for example learner's demographic such as gender, age, marital status, income level and mobile device ownership. By this, researcher is able to classify individual's ability and motivation towards mobile learning. Eventually, researcher will design an effective content according to learner's characteristics and desires.

The rapid subscribe of mobile phones amongst students lends a great platform for innovation classroom interaction system. This research will introduce new pedagogy in existing learning system. Learner's characteristics are the most important influencing factors for self-motivation in their performance towards learning transfer. Therefore, learners have to be mentally motivated or prepared for this new teaching mechanism which is called SMS learning system. Last but not least, Short Message Service (SMS) is the beginning of something simple, affordable yet effective in mobile learning. The flexibility of SMS as a communication tool has enabled it to be used as one of the learning support tools.

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