



Short Message Service (SMS) as an Innovative Mobile Learning Approach in Malaysia

Roy Rillera MARZO

Deputy Dean, Faculty of Medicine, Asia Metropolitan University, Malaysia
rrmtexas@yahoo.com | ORCID 0000-0001-9414-4010

ABSTRACT:

Mobile phones usage had extensively penetrated into the world. A study done by the Malaysian Communication and Multimedia Commission (MCMC) found that in the first quarter of year 2010, the penetration rate for cellular phone in Malaysia is 121 per 100 inhabitants. Penetration rate over 100% occurs because of multiple subscriptions (Adnan, 2012). Malaysia has the second highest mobile penetration in South East Asia after Singapore (Baharom, 2013). The learners appreciated the text messages and felt that SMSes had helped them to stay focused and engaged in their studies. SMS emphasized learner-centered, where the learner can access information anytime, anywhere in order to build their skills and knowledge. SMS is also a community-centered where the learners were required to collaborate and share their views on the discussion topic enhancing constructive learning experience. This article presents the importance of SMS as an innovative approach for mobile learning in Malaysia.

Keywords: SMS, mobile learning, innovation, text message, learner-centered

1. INTRODUCTION:

The higher education sector is responsible for the operation of higher education institutions (HEIs) in Malaysia and is under the jurisdiction of the Ministry of Higher Education (MOHE). The education sector has always enjoyed the highest national development budget which symbolizes the commitment of the Malaysian government towards education.

Malaysia's HEIs (i.e. public universities, private higher educational institutions, polytechnics and community colleges) housed more than a million students in 2011, of which about 93,000 were international students from more than 100 countries. In contrast, there were about 89,686 Malaysian students (27,003 receiving sponsorship and 62,683 self-funded) who were studying overseas in 2011 (Ministry of Higher Education, 2007).

With a multi-ethnic population of about 28.3 million, Malaysia had 20 public universities, 53 private universities and six foreign university branch campuses; 403 active private colleges, 30 polytechnics and 73 public community colleges in 2011. These HEIs offer a wide range of tertiary qualifications at affordable prices (Ministry of Higher Education, 2009).

Mobile learning has the potential to be a mechanism. Firstly because it is ubiquitous, at anytime and anywhere we want. Secondly, it is flexible in delivering course content. Lastly, Kukulska-Hulme, Traxler and Pettit (2007) maintained that mobile technologies can support diverse teaching and learning styles and blend themselves particularly well to personalized, situated, authentic and informal learning.

2. MOBILE LEARNING IN THE MALAYSIAN CONTEXT

According to Idrus (2012) in his study entitled “Mobile Learning in Distance Education: SMS Application in a Physics Course in USM, Malaysia”, the introduction of a new pedagogy in teaching and learning process which is known as short message service (SMS)-based learning system is good innovation. SMS is one of the “most useful and most used” applications on the mobile phone (Abas, 2009) and its use has surpassed all expectations (Markett, 2006).

The national Higher Education Plan 2012 (PSPTN), Ministry of Higher Education (MOHE), is a document that translates the direction of national higher education for the future that focuses on the development of quality human and intellectual capital. This is to realize the country’s aspirations to become developed, prosperous, and competitive nations.

To ensure that the implementation of PSTN is according to set phases, MOHE has developed 21 Critical Agenda Projects or CAPs (Embi, 2011). Each of these CAPs has strategic objectives, indicators, and targets to be achieved through various planned activities. These activities must be executed either at the Ministry level or at the agency level, which includes all Higher Education Institutions (HEIs).

Since mobile learning, as a brand new trend emerging from e-learning has been identified as one of the critical Agenda Projects (CAPs) and Key Result Area (KRA) of MOHE, using portable technologies such as mobiles and tablets as learning enhancing technologies, in the context of developing country like Malaysia often remains unrealized, because lack of access, bandwidth and cost to students are challenging factors. However, most students have mobile phones, thus providing an ideal opportunity for HEIs to increase the effectiveness of learning.

3. CHALLENGES OR ISSUES

Like any other teaching-learning media, the SMS technology is not spared from the challenges. The challenge of using SMS lie in the relatively short length of messages that

can be keyed in, downloaded and read comfortably on a small screen.

The SMS messages are one way “pushed” bites of learning and therefore it is not able to provide immediate means of feedback or interaction which may be required by the learners.

The other setback is that the SMS system depended on the services provided by the telecommunication vendor. Hence, at times whenever there is data congestion, it would either delay the time of receiving messages or never reach the learners. Due to this, the bulk messages cannot be preset for sending ahead, but the text messages are send out one at a time according to the schedule.

Besides that it is quite costly to continue sending SMS text messages especially for courses that has large number of learners registered every semester. The cost incurred could not be obviously justified if there is any direct impact on the teaching-learning exercise.

4. TEACHING AND LEARNING ACTIVITIES INVOLVED

Contextual Activities

One of these activities for mobile learning is the series of SMS blast messages that are delivered to the students by the lecturer. An SMS blast is a text message that can be sent quickly and easily to a group of people. SMS was used to give SMS notes on Optical Physics. The usage of SMS is considered a part of contextual mobile learning activity as it provides current information and reminders about any matter pertaining to the course. As learning entails a sense of immediacy, SMS messages are considered as situated learning (Baharom, 2013).

Collaborative Activities

Activities that promote discussion and refinement to understand a topic from the course come under the collaborative learning principle (Baharom, 2013). One comment of the student is that “we can communicate with the professor via SMS “thus, students were given support to answer mobile phone related queries.

5. MOBILE TECHNOLOGY USED

The devices used for mobile learning in this case study were mobile phones, smart phones and tablets.

6. MOBILE TECHNOLOGY USED

The devices used for mobile learning in this case study were mobile phones, smart phones and tablets.

7. PARTICIPANTS

The course selected for this project was the second year physics optics course with 17 students in Universiti Sains Malaysia. The topic selected was “dispersion”, which the students should have been studying at that point of time according to the course’s flow of content. The study aimed at gauging students’ perceptions of this unique use of SMS to facilitate learning.

8. RESOURCES REQUIRED/NEEDED

A. *Technical Support* - good connectivity and long battery life, meeting required bandwidth for non/fast streaming, higher memory, multiple operating system, number of file/asset formats supported by a specific device

B. *Logistical support* - Student access to device

C. *Appropriate pedagogical support*

9. ACHIEVEMENTS OF THE MOBILE LEARNING INITIATIVE

The learners appreciated the text messages and felt that SMSes had helped them to stay focused and engaged in their studies. The messages were also useful in providing important related to the course. The respondents felt supported as this method helped them to refresh on a particular subject and doubts. Additionally, in general, the learners agreed that messages had allowed them to learn anytime and anywhere and has helped them manage their studies better. SMS emphasized learner-centered, where the learner can access information anytime, anywhere in order to build their skills and knowledge. The learner is empowered to participate in the learner is

empowered to participate in the learning process cognitively and constructively. It is also a knowledge-centered where SMS are in small bites of key information from the course content, allowing learners to construct knowledge through integration and assimilation with prior learning (Singh, 2011). SMS is also a community-centered where the learners were required to collaborate and share their views on the discussion topic enhancing constructive learning experience.

10. WHAT HAS WORKED WELL

The overwhelming consensus from the students suggests that the mobile phone could make a strong and viable contribution to learning in a distance education physics course. Student responses were corroborated by their additional comments:

- “It is a good idea to use SMS to give information and notes.”
- “Use if SMS is very good. Keep it up!”
- “This good approach to distance education should be implemented in all courses.”
- “This project could assist us in our studies by focusing on relevant topics. As most students are employed and have family commitment as well, there is little time left revision. This project’s focus on topics to be assessed will benefit us.”
- “This program should be continued, since I think it is the best way apart from the portal for all JIF212 physics students to learn this subject. At the same time, we can communicate with the professor via SMS as well.”

From these comments of the millennial learners, you can view that they are very comfortable with technology that link to Connectivist Theory. They also prefer casual and friendly relationships with teacher and they prefer interactive, experiential and collaborative learning. However there were some good suggestions noted too:

- “Please include where we can find details of the message from the textbook.”
- “There is some limitation to derive using the formulas or calculations.”

From these comments, there are few students need to be guided thoroughly. The theory of Transactional Distance and Equivalence Theory must be addressed in this condition. Mobile learning via SMS must find a way to reduce the transactional distance of psychological and communication space often faced by distance learners who are separated in terms of geographical distance and time (Moore, 1997).

- “I would like to propose something related to this project that I believe will work for me: why don’t you start with a question rather than sending a note? An answer or hint can be mailed out to all of us for discussion or on SMS the next day.”

From this comment, you can see students like stimulating environment that is favorable to autonomous learners.

11. WHAT COULD HAVE BEEN DONE DIFFERENTLY

If I am the researcher, I would like to add reflective activity in the course aside from contextual and collaborative activities. Reflective activity involves the students to create an individual podcast on any topic from the course to reflect their understanding of content. They will be requested to upload the podcast to a virtual platform whereby their peers could download it to listen to it through their mobile device. The peers could add their comments about the podcast. The students must understand and reflect on the topic they had chosen and explain that topic in their own way. The students are encouraged to ask to their co learners to describe why and how they planned to use the picture. This encourages the students to go through a process of analyzing and making decisions about their own learning process. Reflective blogging is a “constructive process of acting within an environment and reflecting upon it”

(Sharples, 2004). Hence asking the students to write reflective blog posts during their course gave them the opportunity to construct knowledge based on their content.

Interactive voice response can be incorporated in the system to provide personalized feel to the automated learning support. This can increase in learning motivation as well as an enhancement of learning with deeper understanding of certain key concepts. Q&A must have done also to provide students the opportunity to clarify issues and questions without the high cost of a lengthy telephone call and to provide asynchronous learning support. If given a chance, Quizzes can be implemented to provide tutoring and feedback in order to reach the desired learning outcomes and to provide remedial support on identified learning shortcomings.

12. RECOMMENDATIONS

I would like to recommend that interactive SMS that gives automated response to the learners to be incorporated in the learning.

Due to the relatively small sample size, a broader generalization from the data is difficult to make, thus, I would recommend increasing the number of target population.

It should also focus on the demographic profiles and technology acceptance components as factors influencing students’ readiness for m-learning. Other factors, such as prior to experience with technology, teaching skills and personality type should be taken into account. It would be valuable to examine the pedagogical factors which affect the learning satisfaction of learners using mobile learning. This in turn may lead to studies that help establishing the feasibility of utilizing mobile phone in enhancing the existing classroom practices in Malaysian schools. Cultural change is most needed like conducting various m-learning seminars, workshops and conferences. Building strong multi-sector partnership to foster widespread

uptake, linking mobile learning analytics to learning theory, training teachers in mobile learning design and promoting mobile learning for all (Shuler,2013).

In designing mobile learning projects to increase educational access, educators should address two key issues: the conceptualization of access and access sustainability (Schuler, 2013). The development of learning apps requires combination of strong pedagogical design skills, artificial intelligence techniques to support personalization of the learning experience, and knowledge of user experience to develop robust interfaces. Researchers should use participatory approaches to work with learners in co-determining learning outcomes, using rich sets of data that will likely be collected from a new generation of mobile devices.

REFERENCES:

- Abas, Z. W., Lim, T., & Woo, T. K. (2009). Mobile learning initiative through SMS: A formative evaluation. *ASEAN Journal of Open and Distance Learning*, 1(1), 49–58.
- Adnan, M.H. (2012). Consumers Internet Usage And Their Behaviour To Enhance Broadband Penetration In Sabah . [file:///C:/Users/Admin/Downloads/505-Article%20Text-1037-1-10-20161227%20\(2\).pdf](file:///C:/Users/Admin/Downloads/505-Article%20Text-1037-1-10-20161227%20(2).pdf)
- Baharom, S. (2013). Designing mobile learning activities in the Malaysian HE context: A social constructivist approach (Doctoral dissertation, University of Salford).
- Embi, M. (2011). E-Learning in Malaysian Higher Education Institutions: Status ,Trends, and Challenges. Available at: <https://moe.gov.my/images/Terbitan/Rujukan-Akademik/e-Learning%20in%20Malaysia%20Higher%20Education%20Instituttions%20Status%20Trends%20&%20Challenges.pdf>
- Idrus, R. (2012). Developing instructional materials to promote investigative research using interactive ICT tools:An experience from a Continuing Professional Development (CPD) programme, *Malaysian Journal of Educational Technology*, 12(1).
- Kukulska-Hulme, A., Traxler, J and Pettit, J. (2007). Designed and user-generated activity in the mobile age. *Journal of Learning Design* 2(1): 52-65.
- Markett, C., I. Arnedillo-Sanchez, S. Weber and B. Tangney. (2006). Using short message service (SMS) to encourage interactivity. *Computers and Education* 46(3): 280-293.
- Ministry of Education. (2012). Malaysian Education Blueprint 2013-2025. Ministry of Education Malaysia. https://www.moe.gov.my/images/dasar-kpm/articlefile_file_003108.pdf
- Ministry of Higher Education. (2007). National Higher Education Action Plan 2007-2010: Triggering higher education transformation. <https://www.slideshare.net/shahza90/dm704pptx>
- Ministry of Higher Education. (2009). Malaysian Education: Malaysia Centre of Educational Excellence.
- Moore, M. (1997). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. 22–38). New York: Routledge.
- Sharples, M., McAndrew, P., Weller, M., Ferguson, R., FitzGerald, E., Hirst, T., Mor, Y., Gaved, M. and Whitelock, D. (2012). *Innovating Pedagogy 2012: Open University Innovation Report 1*. Milton Keynes, UK, The Open University.
- Singh, H. K. D. (2010). *Effectiveness of 5-category pedagogical model using SMS technology*. Paper presented at the International Conference on Communication and Media, Melaka, Malaysia. 18–20 June 2010.
- Shuler, C. (2009). *Pockets of Potential: Using Mobile Technologies to Promote Children’s Learning*. New York, The Joan Ganz Cooney Center at Sesame Workshop.
- Shuler, C. (2009). *Pockets of Potential: Using Mobile Technologies to Promote Children’s Learning*. New York, The Joan Ganz Cooney Center at Sesame Workshop.

Dr. Roy Rillera MARZO, [ORCID 0000-0001-9414-4010], is a Public Health Physician and Research Scholar. He is currently the Deputy Dean, Faculty of Medicine in Asia Metropolitan University, Malaysia. He is also handling different positions such as Deputy Head in Medical Curriculum and Assessment, Deputy Head of Medical Research and Ethics and Deputy Head of Medical Education and Quality Assurance. He also teaches postgraduate programs like Master in Public Health (Online) in South America, Master in Global Health Studies and Master in Healthcare Management. Dr. Roy is also the International Coordinator of Southeast Asia in Education Against Tobacco (EAT). In the Philippines, Dr. Roy was a Consulting Physician in renowned global American company Texas Instrument and became the youngest Director of Cordillera Coalition Against Tuberculosis. Dr. Roy teaches extensively in the medical program on the topics of Public Health such as Epidemiology, Statistics, Occupational Health, Health Promotion, and Research. Dr. Roy's researches are focused on Public Health, and Medical Education. Currently, he is the Editor-in-Chief of Texila International Journal of Public Health, South America, and an International Board Member in six international journals. Email: rrmtexas@yahoo.com

For copyright / reproducing permission details, email : Editor@AsianJDE.org