Is SMS Still Alive For Education: Analysis Of Educational Potentials Of SMS technology?

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Abstract

Mobile phone, especially SMS concept is a fairly old technology. In spite of the fact that there are some applications of using SMS capabilities of mobile phones in education, the usage is not widely in all educational areas. Still, there is a need to understand how SMS technology could be applicable for education in different ways. Hence, in this study, authors’ investigate possible educational use of SMS by providing a detailed analysis of the technology and examples of different research studies of successful implementations in education. This study may be a guide for school administrators and policy makers to understand educational technology potential of SMS by providing benefits and drawbacks of the technology.

Keywords: SMS, Mobile Phones, Distance Learning, Learning;

1. Introduction

Use of mobile phones in education can enrich the learning experience [46]. Using mobile phones can give freedom and productivity to students by allowing them to study in any place and any time they want, not only in a classroom. Students can receive and send information via short message services (SMS) any-time and anywhere a mobile technology is used for sending and receiving text messages using global or local network-based infrastructures. Generally a single SMS could have 160 characters long.

Use of SMS in education is not a new concept; the idea of use of mobile technology has been discussed before by many authors [1, 2]. Swett [3] reported that in US, 90% of public universities and 80% of private universities have a network supporting wireless technologies.

In this study, only SMS message sending and receiving capacity of mobile phones are investigated. Other capacities including use of 3G services are not covered here and are not taken as a parameter in the discussion. Also when referring a mobile phone, a simple 1G based phones with sending/receiving text message capacity are referenced. PDA, Iphone and other wireless mobile devices are not considered in this discussion.
2. How does it Work for Learning?

Mobile technologies could facilitate collaboration and interaction, accessing, discovering, discussing, and sharing environmental information with use of SMS services [4]. There are some models of learning with mobile phones. These are a ‘Push’ model which allows the school or the teacher to send out messages to learners enrolled in a specific lesson, a ‘Pull’ system which enables learners to receive information using a menu system, an interactive system which enables learners receive questions then answer, receive feedback [4]. Most other usage of mobile phones includes short answering, ranking, matching, fill in blanks, true/false, multiple choice questions [5, 6]. Additionally to these interactive benefits SMS can be used to alert students about a certain event or to announce specific facts [44].

According to current research, being accessible, context, collaboration and appeal are the main advantages of using mobile phones in learning [7]. Mobile phones have the capacity of storing information and received texts in SIM cards that will allow students to review and edit information later. Because mobile phones give chance to receive information and feedback on real time and on demand it is much more nonthreatening and private than other classroom technologies. Also use of mobile phone is very easy for many students so adaptation of the technology is fairly easier than use of any other unusual educational technologies such as Smart Boards [45]. Different than the limited implementation of computers labs or other educational technologies with physical dependencies, when a SMS system is set up and run, it could be delivered to many students. Unlike the many other educational technologies, SMS is a two way technology that allows communication in two ways between teacher to student, students to students and teacher to teacher. SMS can be sent from mobile phones to mobile phones, from a computer to mobile phone or vice versa.

Use of mobile technology in education helps students to learn in “no fixed location or time” [8]. This function is the most striking point of using mobile phones in education because there is no real option for mobile usage for other educational technologies such as computers (partly mobile). Generally speaking, mobile phones have relatively small screens than will allow them to present information in chunks which offers to distillation of materials into knowledge bytes [9]. Learners have more self confidence using mobile phone to engage in discussions [10, 11]. Also as the other technologies, mobile phone usage can show more positive results when used in a blended approach.

Instructors and institutions should be careful about using SMS. For example, sending SMS to all students may be a topic of SMS spam and should be carefully implemented. In addition, many mobile phones have some physical limitations such as small screen of mobile phones makes it hard to read all of the information. This kind of mobile phones with small screen sizes and small keypads may affect the students’ performance.

3. Examples of SMS Use in Education

Use of SMS in education has been researched by several authors [9, 12, 13] asserts that students would have a significant improvement when they are instructed with the aid of SMS text messages.

Attewell [10] describes that SMS could be used as a quiz tool that facilitates learning by giving the function of automated response system for multiple choice questions. In this system, the quiz questions could be displayed in a presentation screen in the class, in a web site or in handouts, and then students are asked to send the answers by SMS where they are recorded into a database and receive real time feedback. Attewell also describes another use of mobile phone usage in a boarding tool system where teachers create interactive learning tasks that require students to send information on the board by SMS.

SMS use is reported to be effective results in some of the universities in Australia [12, 13]. Another study reports implementation of mobile phone study support system called StudyTXT where students receive SMS messages to study the content very similar to ‘digital flash card’ resulted with positive outcomes such as improvement of collaboration and cooperation between students and faculty. In India Institute of Technology, use of SMS for question – answering in the learning showed a great promise for the future implementation of such a system [14]. One study at Kingston University [15] showed that it is possible to create a journey kind of complex interaction with using a series of interactive SMS in order to help learners to achieve tasks or reach a goal in their learning. In Finland, MoCoCoMa, an application for mobile collaborative concept mappings based on SMS was developed and
investigated [16]. MoCoCoMa system allows students to communicate and collaborate in authentic learning situations and allows the teacher to combine classroom activities with mobile learning activities based on SMS text messages. Results showed that students’ attitudes to MoCoCoMa system were almost positive and they benefited such a system.

In Germany, researchers implemented SMS based learning systems that creates an environment for communication and discussion based on sending SMS [17]. In this system students engage in SMS dialog according to their specific role. SMS messages are collected in a database and presented later on in a discussion scenario with SMS.

In England, a university applied the use of SMS in their lesson which requires students to visit museums (Tate Modern) and then engage in discussions by sending SMS to each other [18]. In this study researchers show that students are adapted their seminar groups quickly. This study also discuss the advantages and the importance of engaging in social activities with the support of mobile technology.

In Cyprus, researchers investigated use of SMS and MMS based technologies and found that students have positive attitudes such as enjoyment of peer collaboration, feeling of learning useful information and improved learning benefits such as being more aware of to the content [4].

Another study reports that SMS is used as an assessment tool for students where they are required to fill in the sent examples [15].

In Asia, there are also pilot testing studies implementing to deliver content via SMS [11]. In a research done in Thailand, the mobile phone usage found as effective regarding to testing [19].

Another example of SMS usage for learning implemented in 2004 Olympics where tourists were sent Greek vocabulary via SMS [20]. Regarding to teaching vocabulary, in Australian university students received SMS to learn foreign languages [21] and to learn German literacy in another institution [22].

In one study, students are provided vocabulary instruction by SMS and results showed that the SMS group learned over twice the number of vocabulary words than the control group and they scored nearly twice [23, 24, 25]. Same researchers ran another study [23] in order to implement a classroom polling system to survey students during class in order to determine vocabulary retention in a similar fashion as in clicker systems. The questions sent to students’ mobile phones and they replied them using mobile phones again. And the results are also projected as bar graphs. The study also resulted that students like to receive immediate feedback using SMS oriented clicker system.

Studies show that the use of SMS in education is welcomed and found useful by students [12, 15, and 26] and teachers [27]. Regarding to SMS and text message sending, [28] report that this activity has a positive effect on learning where students need to study in teams.

A study in Sheffield Hallam University showed that students have a positive attitude to SMS where they see this technology immediate, convenient, and personal [29]. Students also value to be in contact with their teachers personally [30].

4. Socio- Economic Value of SMS Technology?

Implementation of the technology heavily relies on other services to buy from outside so it could be costly to install. Some commercial mobile language learning programs are given free in some places such as BBC World Service’s Learning English with SMS in Francophone West Africa and China [31]; and BBC Wales Welsh lessons [32]. Educational institutions also may run their own services in the campus but they should consider the costs. For example, in order to run SMS traffic, mobile operators should have a node in the network called SMS Center (SMSC) and this center could be a third party aggregator (provider) that could connect to other operators [33]. This also enables educational institutions to have their own service centers to run much cheaper than direct connections to operators. These kinds of aggregator are relatively easier to develop an application using Simple Object Access Protocol (SOAP) or HTTP protocol (http://www.w3.org/TR/soap/). This kind of implementing could reduce costs of ownership efforts and expertise requirement.

For example, in StudyTXT project, a cost sending 4 example SMS text to 200 students per week would be around $1000 in a semester [9]. Also implementation of a SMS server that can host a database of text messages would be set up for $9,000 and it will cost $500 per month for maintenance. Students using StudyTXT are charged 0.30–0.50 cents per message. Integration of such a system into Blackboard LMS would cost $10K per year and 0.17 cents per
message/student.

In pull systems, students can download messages as they need so it will give the control to them and they can manage the costs of receiving according to their needs. However students’ skill for self regulated learning is unknown; we don’t know yet if they are capable of deciding which message to download or not. Sometimes students would feel that all the information presented are very important and they would like to receive all not to miss anything. This would be avoided by sending only very important key information via SMS and informing students about the urgency of the message. SMS could be tagged according to their importance which helps students to decide.

Also some authors remind that [34], some of the mobile phone service providers offer lower cost plans for the students or educational institutions that will allow reducing project costs.

With respect to cost of implementation, mobile learning is relatively cost low in many countries. There is no need to investigate on a new technology for the communications (such as WLAN or RFID) and most of the students already own mobile phones. Also unlike in the clicker system and in some of the podcasting delivery, there is no cost for the license, the ownership belongs to the teacher who creates the content. Also this makes it easy to share the content with other teachers and students.

Use of mobile phone is very wide all over the world [35, 36] especially with young students in higher education. For example, according to a survey at Auckland University of Technology, 82% of students reported owning a mobile phone [9]. Another study indicates that mobile phones are cheaper to own so almost all students can acquire one [34]. In 2003, there were more than 107 million Americans who had cell phone and 8 million had web enabled cell phones [37]. Also Mediamark Research and Intelligence [38] shows that the number of youngsters who have mobile phones almost doubled since 2005, according to a report from The New York Times. Another study showed that 82% of students in higher education in US own mobile phones [39].

Today, students in the age group of 17 – 24 are perceived as the net generation group who are very capable of using new technologies more often than previous generation of students [40, 41]. This suggests that use of mobile phone won’t be very hard to adapt for the students that already use them in their daily life. Also researchers indicate that the use of mobile phone becomes an essential tool for management of social life [13].

In SMS based mobile learning, the system is open that students can construct knowledge where there are collaborative knowledge building activities are present which supports social-cultural learning theories [42, 43].

Using mobile phones therefore supports learning in a social context where students are discovering, questioning and creating knowledge together by interacting with their peers. This also could improve creativity that is fed by curiosity desire for social discovery. Another important effect is preventing isolation in class by joining a social network which has its own unique authenticity and culture that allows students to control direction of their learning.

In conclusion, SMS is a mobile learning tool where students receive real time and on demand instruction in a very flexible way. Ownership of SMS belongs to teacher and there is no need to pay a license for the content. SMS is widely used by students and it is a global technology which is accessible by almost anyone who has a mobile phone and it is scalable to large number of students.

5. Conclusion

Mobile phones are using more global than many other educational technologies and do not have any dependencies other than service provider in order to connect to the network. Many educational technologies may require having registration and licensing fee in some cases. Mobile phone is used more general, nearly every students own one so there won’t be another cost to buy another device.

Mobile phone and SMS is easier to use and people are already using these functions for year almost since the first generation of mobile phone so the learnability and adaptation of technology is much greater.

In conclusion, uses of SMS with mobile phones have very different examples of successful implementations in education as in this study also presents. Hence school administrators and policy makers’ should consider SMS with mobile phones as another educational technology which has many potential benefits for education.
References:


