

Medical Students' EMP Learning through Interactive SMS Platform

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ABSTRACT :

Introduction & Background: Virtual learning communities are radically redefining the traditional language learning classroom, where computer-assisted language learning (CALL) is being replaced by mobile-assisted language learning (MALL), with increased use being made of wireless networked mobile computers to facilitate internet based language learning. Meanwhile, cell phones are becoming ubiquitous, with students presuming their right to personal use during class, frustrating teachers who regard this as disruptive. M-Learning is defined as the teaching and learning processes through the use of mobile and handheld devices such as cell phones, Personal Digital Assistants (PDAs), laptops, and tablet PCs. M-Learning is the ability to receive learning anytime, anywhere, and on any device.

Objective: This paper aims to describe the development of a mobile-based interactive learning environment (MOBILE) in classroom as well as to understand the impacts that mobile applications such as short -message-services (SMS) can have on students' EMP (English for Medical Purposes) learning experience.

Method & Material: A brief description of the system as well as the trial that took place is presented. Based on the literature described on mobile technologies and ICT in the classroom and pedagogy, two new classroom dynamics were designed, applied and evaluated i.e. SMS Feedback and SMS-quiz. Subsequently a discussion of the survey results, obtained from 40 students of medicine studying the EMP course, is presented.

Findings & Conclusion: The findings indicate that students and instructors can benefit from the additional channel of communication in the classroom. The lecturer perceived a gain of quality and quantity of feedback from the students. The research implies that students are of the opinion that the system was useful - making classes more interesting and interactive (over 90%). The post-project feedback on a Likert scale gives strong evidence that "SMS Feedback" was found to be an especially useful, efficient and preferred method of communication (94%). Overall, the main inhibitors for adoption of SMS in the classroom, among other challenges, were time constraints (20%) and the cost of text messages (52%), rather than a perception of the systems value.

Keywords: M-Learning; Special English; Cell Phone; SMS; MALL

Introduction:

According to Chabra and Figueiredo (2002), “M-Learning is the ability to receive learning anytime, anywhere, and on any device.” While electronic learning (E-Learning) extends study beyond physical classroom, M-Learning promises continued extension towards the “anywhere, anytime” learning process. Learning through SMS residing in “m-learning” can be considered part (see Fig.1) of the world of “e-learning”, which refers to the use of technology for learning in a broad sense and encompasses educational processes carried out in compliance with different theoretical models, pursued using different educational methods and is, normally, based on activities that “take places via any electronic medium” (Anohina 2005).

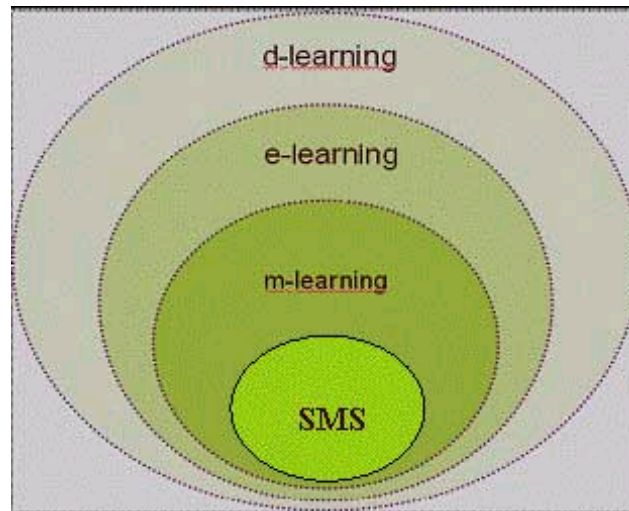


Fig.1. Schematic Design: from distance-learning to SMS

SMS and language Learning:

An important application to cell phone usage in the English as a second language classroom is capturing SMS (Short Message Service) into a database that is displayed on a message board. Text messaging is an example of a student centered, personal approach to communication – where connection and communication is viewed from a student’s point of view.

As a consequence, the language is informal and the messages are mostly peer to peer (Horstmanshof & Power, 2004). Thorton and Houser (2002; 2003; 2005) developed several innovative projects using mobile phones to teach English at a Japanese university. One focused on providing English vocabulary instruction by SMS. Three times a day, they emailed short mini-lessons to students, sent in discrete chunks so as to be easily readable on the tiny screens. Lessons defined five words per week, recycled previous vocabulary, and used the words in various contexts, including episodic stories. Students were tested biweekly and compared to groups that received identical lessons via the Web and on paper. The authors then explored usability and learning issues. The results indicated that the SMS students learned over twice the number of vocabulary words as the Web students, and that SMS students improved their scores by nearly twice as much as students who had received their lessons on paper. Students' attitudes were also measured. The vast majority preferred the SMS instruction, wished to continue such lessons, and believed it to be a valuable teaching method. The authors theorized that their lessons had been effective due to their having been delivered as push media, which promote frequent rehearsal and spaced study, and utilized recycled vocabulary.

Levy and Kennedy (2005) created a similar program for Italian learners in Australia, sending English vocabulary words and idioms, definitions, and example sentences via SMS in a spaced

and scheduled pattern of delivery, and requesting feedback in the form of quizzes and follow up questions.

While the applications of cell phones have typically been pedagogic in nature, they have also been used for practical or administrative matters, such as simplified and flexible student-teacher communications (e.g., course updates and reminders) and referrals to related websites and other up-to-date instructional resources (Dias, 2002 ; Levy & Kennedy, 2005).

Language classroom interactivity has a number of significant benefits: it promotes an active learning environment, provides greater feedback for lecturers, increases student motivation, and enables a learning community (Mazur 1998, Hake 1998, McConnell et al 2006, Bishop et al 2003, Angelo 1993). During the past six years the rapid proliferation of mobile devices, particularly cellular phones, in the student demographic has changed the levels of student access to information and communications technology (ICT) in the classroom - presenting an extraordinary opportunity to develop interactive classroom systems and to enhance students' learning experience (Schwabe 2005, Scornavacca 2006). The present challenge for researchers is to go beyond anecdotal perceptions and obtain English empirical evidence about the impact of these technologies in the English for medical purposes (EMP) classroom. This paper aims to describe the development of a classroom interaction system as well as to understand the impact that mobile applications such as SMS can have on students' learning experience.

Using interactive classroom pedagogies it is possible to promote a more active learning environment, increase the motivation of students, inform the work of teachers and generally enable a genuine learning community in the classroom (McConnell 2006). Classroom Feedback Systems (CFS) provide one possible technological affordance that can efficiently enable interaction in large classes. Known by a vast array of names and produced commercially by a range of vendors, CFS technologies have been used since

the sixties (E. Judson and D. Sawada 2002; W. R. Penuel et al, 2005) allowing students to respond to questions and have the results processed and displayed for use by the lecturer and the class as a whole. Modern systems provide the ability to answer a range of question types from simple yes/no through to detailed responses, free-form questions and roleplaying (L. Bollen, 2004). Other media such as images are now also being used in particular contexts (P. Seppälä and H. Alamäki, 2003).

A variety of positive outcomes from the use of CFS technologies have been reported including improved understanding of important concepts (W. R. Penuel et al 2005) increased student engagement and participation (M Freeman and P. Blayney 2005), improved quality of discussion in the classroom and a better teacher awareness of student difficulties (W. R. Penuel et al 2005).

In one of the few examples of classroom use of mobile phones, Markett (2006) describes the use of SMS to collect text in the form of a semi-structured discussion during class that can then be continued in a more traditional web-based discussion afterwards. Sadly however, the problems caused by disruptive mobile phone use have more often led to the banning of mobile phones in classrooms and the use of jamming equipment. This can lead to unusual solutions such as that of Bollen (2004) who reported the development of an SMS-like system on PDAs in order to avoid restrictions on using mobile phones in class.

Interactive SMS Platform Project:

Materials & Method:

The development of the project is based on the assumption that nowadays most students at Kashan University of Medical Sciences, in Iran have SMS enabled mobile phones and that they bring it to the classroom. Therefore most of the necessary ICT infrastructure for a classroom interactive system is already in place. In order to take advantage of this opportunity in classroom it was necessary to enable the instructor to receive messages from students while lecturing.

The system comprises of a mobile phone connected to the instructor's laptop and the installation of a SMS management tool (SMS Studio). An alternative to this set-up would be using an SMS-gateway instead of the phone. The SMS software enables the instructor to easily read incoming SMS messages on the computer screen as well as automatically analyze the results of polls. In addition, it also allows the instructor to send messages to any mobile phone. Therefore two new

classroom interactive activities were designed:

SMS Quiz: at the end of each class, the instructor presented slides containing few multiple-choice questions related to the topic. Students were able to use their mobile phones SMS to answers and were able to see on the projector screen real-time graphics showing the results to trigger class discussions (Mazur 1998). **SMS Feedback:** it allows students to send questions on the sentence structure, terminology and translation or comments to the instructor's laptop via SMS without interrupting the class. The instructor was able to read the messages on the laptop screen and decide whether or when would be appropriate to comment on the message received.

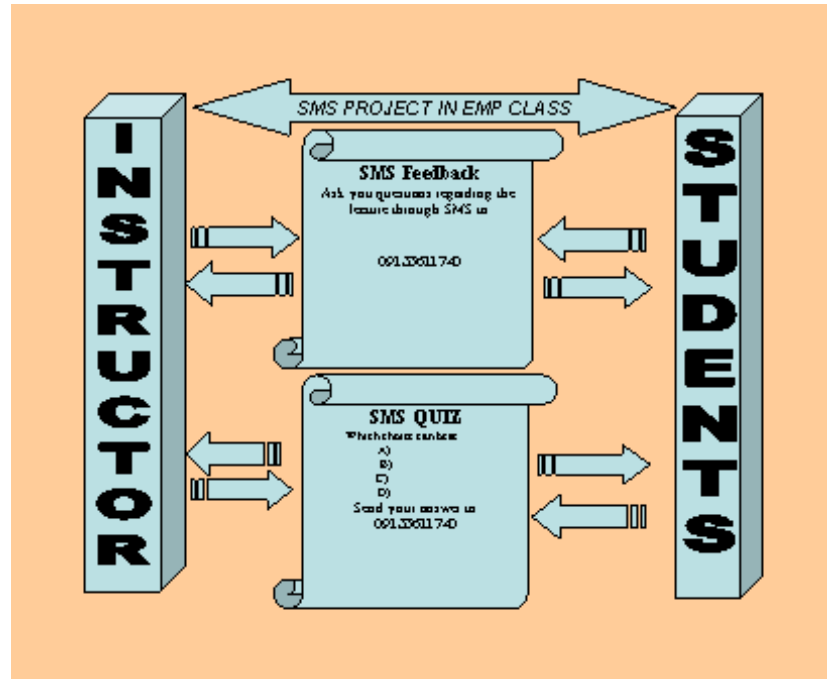


Figure 2: SMS Project in EMP Classroom

Discussion:

English for Medical Purposes (EMP) also called English for Special Purposes (ESP) is a mandatory course for all students of medicine, which is introduced to them by the English department. One hour and half lectures were delivered two times a week to a group of 40 students. At the beginning of the semester, students were introduced to the project and actively encouraged to use their mobile phones in class. During the trial, using the system was voluntary and students paid for their own messages.

At the end of the semester, the students were asked to answer a survey containing 22 questions measuring mobile phone usage, user acceptance of the system, and perceived impact on students' learning experience. The questionnaire was developed in conjunction with Education Development Center (EDC) of the university and it received face and content validation. Majority of the students (89.1%) owned a phone that they often carried in classes. During the trial, 51% of the students used the SMS Feedback to send a question or comment in classes. However, over 90% of them perceived that the ability to send the instructor SMS's during class was in one way or other useful. Students indicated their reasons for not using the SMS feedback. Most (41.5%) responded that they had nothing to say, 33.6% gave cost as the main inhibiting factor.

Most of the students used the SMS Quiz (81%) since the instructor noticed that this activity provided several benefits for the classroom environment (e.g. instantaneous feedback on concept tests or using results to stimulate class discussion). It was also noticed that students seemed to be very interested in the result of polls that reflected their collective opinion on a given issue. In the case of the SMS Quiz, student participation was mainly inhibited by cost (31%) and lack of interest (5%). The survey questions have examined largely descriptive aspects of students' mobile phone usage as well as drivers and inhibitors for using the project. The remaining questions examine the impact of this application on respondents' learning experience. Table 1 summarizes the results.

<i>STUDENTS' IDEAS</i>	<i>MEAN</i>	<i>RANK</i>
Using SMS increased the levels of linguistic interaction in EMP class.	4.04	1
Using the project during class made the English classes more interesting.	4.03	2
Using SMS in the English classroom is a good idea.	3.99	3
I found this instructional method effective.	3.71	4
In general, I liked using SMS as part of this course.	3.69	5
The use of SMS during EMP class enhanced my study.	3.54	6
The project during class increased my interest in the subject.	3.49	7

were asked to answer questions using a Likert scale from 1 (strongly disagree) to 5 (strongly agree). Reliability analysis was carried out to investigate the internal consistency of the scale used in this part of the questionnaire (Crombach's alpha =0.92). In particular the increased engagement and interactivity, improved classroom discussions and the ability of lecturer to react to the student's feedback effectively (Draper and M. I. Brown,2004). The expectation was that English as-second-language (ESL) students would find the system more useful than native English speaking students. This assumption was based on the idea that most of the ESL students would be more comfortable interacting via the SMS channel as it would give them more opportunities to express themselves clearly (I. Elgort, S. Marshall, and G. Mitchell 2003).

Students were also asked to indicate their preferred of method of communication if they would like to ask the lecturer a question (traditional vs. SMS). For this question, respondents were asked to answer on a Likert scale from 1 (Raise my Hand) to 5 (Send an SMS). SMS appeared to be the strongly preferred method of communication for asking questions. Figure 3 summarizes the results.

Conclusions:

The rapid proliferation of mobile phones among the student population is generating a novel platform for the development of classroom interaction systems. This research described the development of a classroom interaction system and explored the impact that mobile applications such as SMS have had on students' learning experience .The findings indicate that students and instructors can benefit from the additional channel of communication in the classroom. The lecturer perceived a gain of quality and quantity of feedback from the students. Students indicated that the system was useful - making classes more interesting and interactive .The "SMS Feedback" was found to be an especially useful , efficient and preferred method of communication , in comparison to the traditional "raising hands" method of asking questions. While students perceived only a moderately positive impact of the system in terms of increasing their interest in the subject and enhancing their study, they indicated that they would nevertheless like to see more use of this technology in the classroom. Overall, the main inhibitor for adoption of SMS in the classroom was the cost of text messages, rather than a perception of the systems value.

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