

SMS-BASED LEARNING APPROACH TO ASSISTING FULL TIME STUDENTS' IN LEARNING

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Abstract

The advance changes in communication technologies and the potentials of mobile devices are enabled to be used as learning tool. The unique features of mobile phone and the flexibility and reliability of SMS introduced a new pedagogical innovation in existing learning system. In this study, the impact of SMS-based learning system (m-learning) towards full time Management students' achievements have been analyzed. A quantitative analysis was used to identify is there existed a significant difference between pretest and posttest academic achievement scores between control group and experimental group students. Findings demonstrated that, there was a significant differences between the group that had received SMS and the group were not received. This findings show that, SMS based learning had influenced the students' academic achievements significantly at the end of the applications and it can be used as assisting tool in teaching.

Keywords: Mobile Learning, Short Message Services (SMS), Instructional technology, Full time students, Learning Achievements.

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Introduction

During past six years, the advance changes in mobile devices lead rapid changes to 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 2005; Scornavacca 2006). Mobile devices are playing a vital role in every student's life, especially mobile phone. Unique features of mobile phone offers 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 phone seems not all students able to own expensive mobile phone or PDA's.

A study done by Malaysian Communication and Multimedia Commission (MCMC) found that in Quarter 2, 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 phone combine both ubiquity and utility in sense of communication and computation.

The mobile learning process can be defined as a new application area, which started to be pedagogically used recently and in which mobile wireless systems are used as supporters of students and teachers in distant learning processes (Mcconatha, Praul & Lynch, 2008). In addition, the possible uses of mobile phones and its technologies as a support tools in programming language education process analyzed and the researcher defined that end of the application process SMS support had influenced the students' academic achievements significantly (Serhat Bahadir, 2011). According to Kert (2009), SMS is an international messaging system and asynchronous communication can be established up to 160 characters via SMS that has been used since 1992.

This is because m-learning has a potential to be a mechanism. First is because of ubiquitous, at anytime and anywhere we want. These statement was supported by Trinder (2008) which is 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.

Furthermore, m-learning provides the opportunity for learners to vary their study location and to study “on the move” which enables them to study whilst travelling on transport (Evans, 2008). As a results, his study indicates that the use of portable technologies makes it simpler for learners and educators to transmit their teaching and learning materials when and where they want. In addition, he added that since learners normally have their devices with them, it also facilitates “just-in-time” learning where learners can often take advantage of unexpected free time to study and make revision.

Methodology

Context

The purpose of this study is to investigate the impact of SMS-based learning system (m-learning) towards students' achievements. Therefore the study were sought answers to the following research questions:

1. Is there any significant differences between the pretest and posttest scores of those who received SMS contents for two months?
2. Is there any significant differences between the pretest and posttest scores of experimental group students and control group students?

The course contents was designed based on lecturing notes and the rate of SMSs sent were recorded.

Participants

The method used to collect data for this study was based on Pre-test and Post-test control group design (Creswell, 2003). The population of this study was the full time Management students who have agreed to use their mobile phones as a medium of communication. The sampling frame of the study is 80 students from Principle of Financial course who are voluntarily take part in SMS

based learning research. The students were divided into two groups through random sampling, 40 of them in experimental group and another 40 were in control group.

Data Collection

At earlier step of the research a pre-test was prepared and conducted by the researcher to determine students' achievements in experimental group and control group. By way of this pre-test the researcher enables to acquired the students' achievements of both groups. The participants (experimental group students) have been informed that they will received mobile contents concurrent with teaching materials. At the end of this study the post test administered to both groups to determine the students' achievements. Finally, quantitative data were obtained through pre-test and post-test and the researcher enables to acquired students' achievements of both groups and the difference between their post-test scores.

Application Process

In this study, 80 students were involved and successfully divided them into two groups through random sampling, 40 of them in experimental group and another 40 were in control group. This study has been carried out for 8 weeks of time and the notes were sent to experimental group students via SMS. The course contents have been delivered to the students were parallel with the course content of Principle of Financial. All the disseminated course contents were developed by the lecturers of School of Management and approved by subject's lecturer before sent to the students. The students' have received two messages per day which is known as fact and example based on current teaching materials. The academic achievement test was implemented to both groups to control the balance between the groups. In order to determine academic achievement scores between the two groups, t-test analysis was carried out to identify is there any significant difference between the groups'. The results are presented in the following table:

Table 1: Independent Groups T-Test based on Pretests of the Experimental and Control Groups

Groups	N	Mean (X)	Standard Deviation	df	t	p
Experimental Group	40	50.70	11.255	78	-1.187	.239
Control Group	40	53.70	11.346			

Table 1 illustrates that there is no significant difference between the experimental group and control group students' scores on pretest academic achievement ($t: -1.187; p > .05$). This shows that, before the application of m-learning researcher was ensured on the balance between the groups by comparing students' academic achievement scores.

FINDINGS

Students' academic achievement pretest and posttest has been implemented to both experimental and control groups students. Each test was consisted of 25 multiple choice questions based on the SMS contents sent through mobile. Students were received four points for each correct answer and the scores ranged from 0 to 100. The obtained results were analyzed through SPSS 18.00. In order to answer the research questions, this study was conducted independent groups t-test to compare the groups' posttest scores, paired-sample t-test to verify the difference between the groups in both tests.

Firstly, the paired-sample t-test for the experimental groups' pretest and posttest academic achievement scores of students are presented in the Table 2.

Table 2: Paired-Samples T-Test Results for the Experimental Groups' Pretest and Posttest Scores

Groups	N	Mean (X)	Standard Deviation	df	t	p
Pretest	40	50.70	11.255	39	-8.490	.000

Posttest	40	60.50	12.426
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Table 2 indicates that, there is a significant difference between the pretest and posttest of students' academic achievement scores ($t: -8.490; p < .05$). This means that, students' were achieved higher scores in posttest after the implements of SMS based learning. Next, the analysis of is there appeared a significant difference between pretest and posttest academic achievement scores of control group students was tested and are presented in following Table 3.

Table 3: Paired-Samples T-Test Results for the Control Group's Pretest and Posttest Scores

Groups	N	Mean (X)	Standard Deviation	df	t	p
Pretest	40	53.70	11.346	39	2.464	.018
Posttest	40	50.50	9.959			

Table 3 shows that, there is a significant difference between the pretest and posttest scores of control group students' ($t: 2.464; p < .05$). This is because the p-value is < 0.05 it is significant marginally and the difference is not very big. Finally, independent groups t-test has been conducted to identify the difference between the posttest scores of experimental group and control group and the outcomes are presented in Table 4.

Table 4: Independent Groups T-Test for the Posttests of Experimental and Control Groups

Groups	N	Mean (X)	Standard Deviation	df	t	p
Experimental Group	40	60.50	12.426	78	4.150	.000
Control Group	40	50.05	9.959			

Table 4 demonstrates that there is a significant difference between the posttest academic achievement scores of experimental and control groups ($t: 4.150; p < .05$). In this situation, it can be concluded that, the implements of SMS based learning positively has assisted the experimental group students in their learning.

CONCLUSION

The flexible characteristics and vast popularity of the mobile technologies enable us to learn at anytime and anywhere we want. According to Brown (2005), mobile applications are known as 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), added that mobile learning represents exciting new frontier in education and pedagogy. This study was attempted to introduce the pedagogical innovation via SMS based learning contents and its feasibilities and the findings were analyzed. In addition from the study, researcher enable to introduce an alternative for teaching and develop an effective content such as fact, example pursuant to learners' needs, preferences and usage habits. Eventually the researcher achieved both objectives by designing an interesting, effective contents for SMS based learning system.

Firstly, paired samples t-test has been conducted towards experimental group to identify is there any differences between pretest and posttest academic achievement scores. The finding indicates that, there is existed significant differences between pretest and posttest scores. This result shows that, SMS based learning system has assisted students in learning. Next, paired samples t-test has been conducted to both groups to scrutinize pretest and posttest academic achievement scores among the group had received and were not received. The findings illustrates that, there was a significant differences between the group that had received SMS and the group were not received. This finding recommends that, SMS based learning can be used as assisting tool in teaching.

The findings of SMS in the role of a support tool for university students (Jones, Edward & Reid, 2009) strengthened the findings of this study. Last but not least, SMS based learning is something simple and really open the door for education to learning occur more effectively. Therefore, it is believed that future studies will emphasize on further contributions of mobile technologies in education.

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