Language Learning using Texting and Wiki: A Malaysian Context

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ABSTRACT

This paper describes a study that has been carried out to examine the effect and use of mobile and communication technologies for learning English, which is a second language in the Malaysian context. Two of the main objectives of this study are to design learning activities that involve the use of mobile and communication technologies that would help improve students' communication and collaboration skills in group activities and to evaluate the effects of using these technologies in the learning process. The study uses the quasi experimental approach to gather data and obtain feedback from a sample of first year undergraduate students in a public Malaysian university. The instruments used in this student include pre and post questionnaires, pre and post writing tests, texting, and updating learning activities using wiki. Learning activities were designed which include participants' use of their mobile phones for texting and the use of computer to collaborate in a group using the wiki software. Participants received text messages at regular intervals and were expected to reply to some of those messages that were quizzes. The messages were of six different types which are update reminder, lesson reminder, general quiz, topic quiz, grammar quiz and resources. A wiki website was also set up for the participants to collaborate with members in their group by updating the relevant lessons. The study concludes that the use of mobile phones with suitable learning activities is favoured and it helps improve the participants' learning experience. On the other hand Malaysians are not well acquainted with wiki technologies and its use has a negative effect on their learning experience.

Keyword: mobile learning, language learning, mobile phones, texting, wiki

1. Introduction

The continuous development of mobile technologies has created a new platform for supporting communication in learning. There are five properties of mobile devices that produce unique educational affordances: portability, social interactivity, context sensitivity, connectivity and individuality (Naismith, Lonsdale, Vavoula, & Sharples, 2004). Mobile learning, or m-learning, is the type of learning using wireless technology through the personal control of the place and time (Sharples, Taylor, Vavoula, 2005).

A study done by a Malaysian government agency, the Malaysian Communications and Multimedia Commission (2010) found that in Quarter 3 of 2010 the penetration rate for mobile phone in Malaysia is 110.6 which is over 100%. The penetration rate is translated as the total of subscription divided by the total population and multiplied by 100; its value is over 100 because of multiple subscriptions. More than two million (13.1%) mobile phone users in Malaysia were 19 years old or younger (Malaysian Communications and Multimedia Commission, 2010). The survey of mobile phone users was done in 2005. It is expected that the figure would have increased according to the pattern of the penetration rate.

However, the use of mobile technology for learning in Malaysia is still in its infancy. The combination of mobile and communication technologies is recognized as a potentially powerful and flexible learning and teaching tool. This study was designed to evaluate the effectiveness of mobile phone and wiki in English language learning, which is a second language in the Malaysian context. The research questions investigated are:

- Is there any difference in writing score between control group and experimental group after the study?
- Has the experimental group's perception and use of mobile phone and wiki changed after the study?
- Is there any significant difference between the control group and experimental group in terms of their perception and use of the mobile phone and wiki after the experiment?
- What are the favorable learning activities using mobile devices for second language learning.

1.1 Related Studies Using Mobile Devices

There have been many studies done in learning using mobile devices. Education & Training (2005) conducted mobile learning trials in UK, Italy and Sweden, among 16

to 24 years old learners. They concluded that learning with mobile devices can:

- *"engage young people who have been put off by traditional education methods";*
- *"help young people to improve their literacy and numeracy skills and to recognise their existing abilities";*
- *"help to remove some of the formality from the learning experience and engage reluctant learners";*
- *"help to combat resistance to technology and bridge the gap between mobile phone literacy and ICT literacy";*
- *"help young people to remain more focused for longer periods".*

Thornton & Houser (2004) investigated the use of mobile technology to learn language with 333 Japanese university students. They all owned a mobile phone and most of them use texting. The study used texting technology, or known as Short Messaging Service (SMS), to teach the students English. The results show that the method benefited them more than personal computers. Other projects for language learning using mobile phones also showed positive results (Malliou, Miliarakis, Stavros, Sotiriou, Startakis, Tsolakidil, 2002; Kadyte, 2003; Tan & Lin, 2004; Pincas, 2005; Zurita & Nussbaum, 2004).

Communication technology, compared with mobile phones, has been used for teaching and learning for much longer. Duffy & Bruns (2006) call this century as "socially mobile learning environment" as it is not enough just to rely on online learning material. Many researchers and teachers found that blog and wiki can be used as a platform for developing writing skills. Godwin-Jones (2003) states that by publishing writing on a blog a student has the possibility of writing for readers beyond their classmates who are not in a discussion forum. Publishing also encourages student ownership and responsibility. A limitation of blog is that information is chronologically organized which makes it difficult to identify relevant information (Godwin-Jones, 2003). Wiki, however, overcomes this problem and also promotes writing collaboration among authors. Sze (2008) experimented using wiki in an English for Second Language (ESL) class. The students were divided into groups of four. Their task was to write about one aspect of their secondary school life. This writing project started off slowly but after a few days the students enjoyed it and they were more engaged and the writing process speeded up. Sze (2008) suggested several reasons for the positive effect due to wiki:

- It was a new medium for them.
- It was easy to learn and use.
- It facilitated sharing of ideas and online contact outside the classroom.

The use of mobile and communication technologies for writing especially for ESL is still at the experimental stage. The use of mobile devices such as laptops, mobile phones and PDAs and the popularity of communication technologies such as wikis have the potential of enhancing learning experience and promoting collaboration and motivation. The main advantage is that they are not limited to in-class activities.

2. Method

2.1 Participants

The participants were selected from 2 different Information Technology undergraduate courses in a Malaysian public university, which we shall refer to as Course A and Course B. Both of these courses will be using the same English module that is going to be experimented for the whole experimental period. The module is taught by the same lecturer.

Participation in the study was voluntary. Before the experiment the numbers of participants were 43 students from Course A and 35 students from Course B. At the end of the experiment the numbers of participants in Course A was 35 and 26 for Course B. These were because some have dropped out from the course, some enrolled the course at the middle of the semester, and some were absent due to illness and personal reasons. The control group was from Course A and the experimental group was from Course B.

2.2 Instruments

Both the experimental and control groups were given pre and post questionnaires at the beginning and end of the experiment respectively. The students also had to answer 3 questions in the writing test before and after the experiment. During the experiment they were expected to reply to the text messages sent to them and update learning activities using wiki to collaborate with their groups. These log and wiki usage are recorded throughout the period of the study. Table1 describes the data collection timeline for this study.

Table 1 Data collection timeline

Day 1	Day 2	From Day 3, Week 1 to Week 5	Day 36	Day 38
Distribute Pre-Questionnaire to Control Group	Distribute Pre-Questionnaire to Experimental Group	Intervention • SMS • Update learning	Distribute Post-Questionnaire to Control Group	Distribute Post-Questionnaire to Experimental Group

		activities on wiki		
Writing test for Control Group	Writing test for Experimental Group		Writing test for Control Group	Writing test for Experimental Group
	Setup wiki account			Interviews
	Key in mobile phone number			

The purpose of the questionnaire is to find out the students' perceptions and use in using mobile and communication technologies in general and for language learning before and after the intervention. The writing test is to evaluate the students' performance. Their SMS activities and wiki log were analysed for trends.

3. Questionnaire

The questionnaires consisted mainly of closed questions. Open-ended questions were also included to gather respondents' feedback from the experiment. Pre and post questionnaires were given to both control and experimental group before and after the experiment respectively to evaluate their views of the technologies before and after using them in the learning process.

The pre questionnaire consists of seven sections:

- Demographic information to acquire information about respondents and their background (e.g. age, gender, language proficiency, mobile phone number to be use in the study).
- Learning preferences to acquire respondents' preferred devices to get online and favorite activities done with mobile phone.
- Use of mobile devices in general to acquire and understand their experience in using wiki, mobile phone and other activities related to communication technology before the experiment.
- Use of mobile devices for learning to acquire and understand their experience in using wiki, mobile phone and other activities related to communication technology before the experiment particularly for learning.
- Perception of mobile devices in general to acquire and understand their perception of using the mobile devices for general.
- Perception of mobile devices for learning to acquire and understand their perception of using the mobile devices for learning.
- Opinion and suggestions regarding to the questionnaires and the experiment if any.

The post questionnaire was organized using the same themes with an additional section to gather information about the type of learning activities favoured and not favoured by the respondents.

The pre questionnaire comprises of 33 questions; 3 of them required ranking items in order of preference, and 28 of them used five-point Likert scale. The post questionnaire comprises of 52 questions, 3 of them required ranking items in order of preference and the other 47 used five-point Likert scale. The scale range from 1 as very often to 5 as virtually never is used in the section which asked for their experience in using mobile devices. In another section where they were asked about their perceptions toward mobile devices, the scale range from 1 as strongly agree to 5 as strongly disagree.

The collected data were entered and calculated using SPSS software. Descriptive, independent and paired sample t-tests were performed to assess the mean difference between the two groups and between the pre and post questionnaires and tests.

3.1 Questionnaire Results

Table 2 show the demographic data of the respondents who were between 19 to 24 years old.

Table 2 Demographic Data

	Control		**Experimental**	
Age	**Pre**	**Post**	**Pre**	**Post**
19	8	3	4	4
20	25	20	19	13
21	4	4	2	2
22	4	3		
23	1			
24	1	1		
Not stated		4		7
Total	43	35	25	26

Table 3 shows the participants' preferred location for studying. Both groups have similar preferences even though the experimental group had experienced using mobile devices in the experiment.

Table 3 Preferred location for studying

Rank	Pre		Post	
	Control	**Experimental**	**Control**	**Experimental**
1	Home	Home	Home	Home
2	University	University	University	University
3	Library	Library	Library	Library
4	Café	Café	Others	Café
5	Others	Others	Cafe	Others

Table 4 below shows the preferred device to get online. After the experiment, the ranks of devices remain roughly the same and mobile phone rank as second lowest. Participants still preferred to use their own laptop at home to get online.

Table 4 Preferred device to get online

Rank	Pre		Post	
	Control	**Experimental**	**Control**	**Experimental**
1	Your own laptop at home	Your own laptop at home	Your own laptop at home	Your own laptop at home
2	Your own desktop computer at home	Your own desktop computer at home	Your own laptop at university	Your own desktop computer at home
3	Your own laptop at university	Your own laptop at university	Your own desktop computer at home	Your own laptop at university
4	A computer in a pooled computer room in university	A computer in a pooled computer room in university	A computer in a pooled computer room in university	A computer in a pooled computer room in university
5	A mobile phone	A mobile phone	A mobile phone	A mobile phone
6	Others	Others	Others	Others

Table 5 T-Test results for comparing activities using mobile phone between groups before and after the experiment. (The mean is the rank for the activities' preference from 1 to 10)

Activity	Timeline	Group	N	Mean	SD	t	df	Sig. (2 tailed)
Receiving SMS as update reminder	Before	Experimental	26	2.46	2.12	-0.09	67	0.326
		Control	43	2.93	1.77			
	After	Experimental	25	3.08	2.36	-1.60	54	0.116
		Control	31	4.16	2.63			
Receiving SMS as lesson reminder	Before	Experimental	26	2.12	1.68	-2.47	67	0.016
		Control	43	3.65	2.88			
	After	Experimental	24	3.33	2.43	-1.58	53	0.121
		Control	31	4.39	2.49			
Receiving SMS as short quizzes	Before	Experimental	26	2.81	2.02	-4.72	67	0.000
		Control	43	5.49	2.43			
	After	Experimental	24	3.54	2.72	-3.39	53	0.001
		Control	31	5.84	2.31			

Giving feedback to lecturer	Before	Experimental	26	5.54	1.88	-0.31	67	0.761
		Control	43	5.72	2.67			
	After	Experimental	23	5.04	2.69	-0.77	54	0.444
		Control	33	5.61	2.68			
Reading learning material on wiki	Before	Experimental	26	5.27	2.57	0.60	67	0.552
		Control	43	4.88	2.61			
	After	Experimental	24	5.25	2.28	2.54	55	0.014
		Control	33	3.48	2.79			
Discussing with groupmates using wiki	Before	Experimental	25	4.80	2.65	-0.20	66	0.839
		Control	43	4.93	2.48			
	After	Experimental	24	5.83	2.20	1.81	54	0.075
		Control	32	4.72	2.33			
Sharing resources using handphone	Before	Experimental	26	5.73	1.80	1.35	67	0.181
		Control	43	4.93	2.67			
	After	Experimental	24	5.42	2.62	1.43	54	0.159
		Control	32	4.41	2.63			
Receiving SMS on weblinks resources	Before	Experimental	26	3.04	1.80	-1.67	67	0.100
		Control	43	3.88	2.17			
	After	Experimental	24	5.75	2.49	0.64	53	0.528
		Control	31	5.32	2.47			
Updating wiki entry	Before	Experimental	26	5.42	2.35	-1.16	67	0.249
		Control	43	6.19	2.80			
	After	Experimental	23	6.39	2.17	0.87	52	.0389
		Control	31	5.77	2.85			

In comparing the favorite activities before and after the experiment (Table 5), there were significant differences in the two of the activities after the experiment. The activities are receiving quizzes on their mobile phone and reading learning material on wiki. The mean for receiving quiz on the mobile phone for the experimental group (M = 3.54) showing the participants in this group ranked receiving quiz as the third favorable activities where the control group (M = 5.84) ranked it as the fifth. In contrast with reading learning material on wiki, where after the intervention the mean for the experimental group is (M =5.25) while the control group (M = 3.48). This suggests that after actually having used wiki, the experimental group did not like to use wiki for collaboration and learning.

The data were further analyzed to examine the pattern of change in perception scores for using mobile devices both for general and learning.

Table 6 Perception score for experimental and control group befor and after the experiment.

Perception	Group	Timeline	N	Mean	SD	T	df	Sig. (2 tailed)
I enjoy communicating with my friends using my mobile phone	Experimental	Before	25	1.40	0.76	-1.75	24	0.094
		After	25	1.84	1.21			
	Control	Before	35	1.60	0.81	0.14	34	0.893
		After	35	1.57	0.95			
I consider the use of mobile phones give me opportunities to learn a language better	Experimental	Before	25	2.20	1.00	1.28	24	0.212
		After	25	1.88	0.73			
	Control	Before	35	2.23	0.81	-0.26	34	0.800
		After	35	2.29	1.07			
I work more efficiently if I use mobile phone more often in learning	Experimental	Before	25	2.36	1.03	-1.05	24	0.303
		After	25	2.68	1.15			
	Control	Before	35	2.40	0.70	-0.42	34	0.675
		After	35	2.49	1.17			
I like to receive reminder on my mobile phone for learning	Experimental	Before	25	2.04	1.10	-1.63	24	0.116
		After	25	2.44	0.87			
	Control	Before	35	2.46	0.82	1.07	34	0.292
		After	35	2.26	1.07			
I like to receive weblinks on my mobile phone for learning	Experimental	Before	25	2.28	1.17	-0.94	24	0.356
		After	25	2.56	0.92			
	Control	Before	35	2.89	1.16	1.49	34	0.146
		After	35	2.51	1.07			
I like to receive and answer multiple choice questions on my mobile phone for learning	Experimental	Before	25	2.24	1.13	-0.74	24	0.465
		After	25	2.48	1.12			
	Control	Before	35	3.00	0.91	-0.58	34	0.566
		After	35	3.14	1.38			
I like to send message information such as web links to any of my friends	Experimental	Before	25	2.40	1.08	-0.67	24	0.511
		After	25	2.60	0.76			
	Control	Before	35	2.69	1.02	0.23	34	0.822
		After	35	2.63	1.11			
I would delete reminder sent to my mobile phone from	Experimental	Before	25	3.80	1.32	2.59	24	0.016
		After	25	2.88	1.01			
	Control	Before	35	3.97	0.95	1.96	34	0.058

lecturer immediately		After	35	3.51	1.20			
I like to receive message on my mobile phone for learning purposes	Experimental	Before	25	1.68	0.75	-3.10	24	0.005
		After	25	2.52	1.01			
	Control	Before	35	2.17	0.95	-1.22	34	0.230
		After	35	2.46	1.25			

Table 6 provides pre and post questionnaires scores for each perception on the use of mobile devices. Significant differences in two categories before and after the experiment from the experimental group are identified: “I would delete reminder sent to my mobile phone from lecturer immediately” and “I like to receive message on my mobile phone for learning purposes”. The students would prefer to delete the message reminders immediately because they feel distracted when the message inbox was full with reminders. The students are less keen to receive short messages because of the unsuitable time to reply to the messages. They preferred to receive the messages at night after finished with lectures and classes.

4. Writing test

Participants had to answer 3 questions which ask them to identify paragraphs in a given piece of text (Q1), summarise a piece of text into one sentence (Q2), and correct the tenses in a piece of text. The weighting for the questions are 6, 5 and 5 respectively. To evaluate the participants’ performances, they need to have answered both the pre and post tests. Therefore, those who did not answer either one of the tests for whatever reasons were removed from the comparison and the number was reduced from 43 to 25 for the control group and 26 to 19 for the experimental group.

Statistical analysis was carried out to compare the mean scores of the same participants before and after the experiment and to compare the mean scores of the experimental and control groups.

Table 7 Paired-samples t-test for experimental and control group before and after the experiment

Activity	Group	Timeline	Mean	N	Std. Deviation	T	df	Sig. (2 tailed)
Writing test	Experimental	Before	5.05	19	2.79	-3.83	18	.001
		After	7.66	19	2.70			
	Control	Before	7.50	25	2.47	-1.35	24	.190
		After	8.08	25	2.27			

The results in Table 7 show that there is significant improvement for the experimental group after the experiment. However, for the control group there is no significant difference in the mean scores before and after the experiment. The mean scores between the control group and experimental group before the experiment was statistically different, however after the experiment the score is not statistically different. This suggests that the experimental group has benefitted from the intervention in improving their English skills.

5. Observation: SMS and wiki Logs

During the experiment, students received text messages and were expected to complete the learning activities using the communication technologies available on the internet at their convenience. The messages were of 6 different types as summarised in Table 8. The messages are designed to be relevant to their learning activities. Figure 1 is a snapshot of the wiki page.

Table 8 Types of messages

Type of SMS	Examples
SMS as lesson reminder	Hello student, this is what you have learned in BLHW 2402 this week. Technical communication is the process of conveying technical information through writing, speech, and other media to a specific audience.
SMS to student web resources	Hello BLHW 2402 student, some links that you can use as reference. http://www.sussex.ac.uk/engineering/1-3-11-2.html http://www.io.com/~hcexres/textbook/models.html
SMS to student short quiz (General Quiz)	Hello BLHW 2402 student, Which one is the URL address for the university virtual library? http://utem.edu.my http://library.utem.edu.my http://library.edu.my
SMS to student update reminder	Hello BLHW 2402 student, Update reminder from lecturer. This week you have learned about Data Gathering from Multiple Resources. Please update your page and share your opinions and feedback if any.
SMS to student short quiz (Topic Quiz)	Hello BLHW 2402 student, The structure of a proposal should be _____ a.Introduction, Statement of problem, Objectives, Plan of Action and Management b.Introduction, Statement of problem, Plan of Action, Objectives and Management c.Introduction, Objectives, Statement of problem, Plan of Action and Management

SMS to student short quiz (Grammar Quiz)	Hello BLHW 2402 student, Choose the correct answer. Many of our customers have been _____ about your Central Locking Systems. a.complains b.complaining c.complained

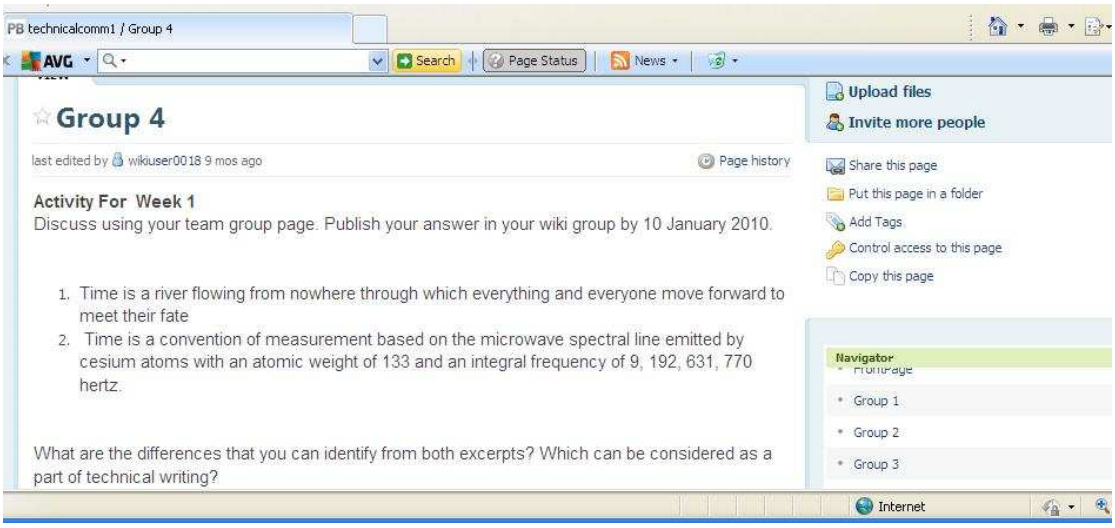

Figure 1Wiki snapshot

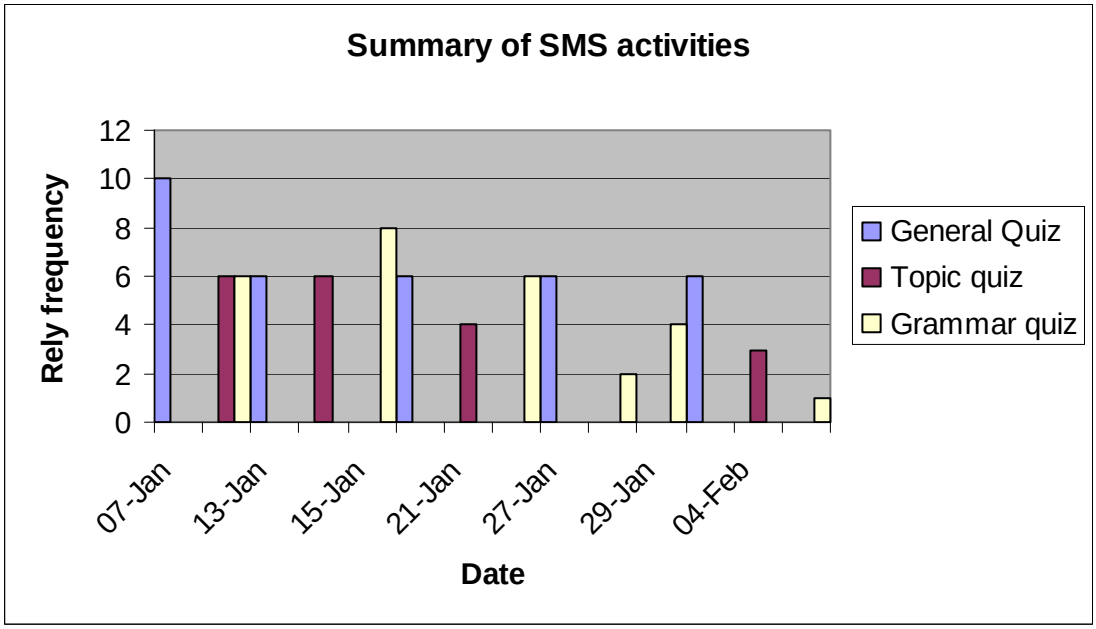

Figure 2 Summary of SMS activities

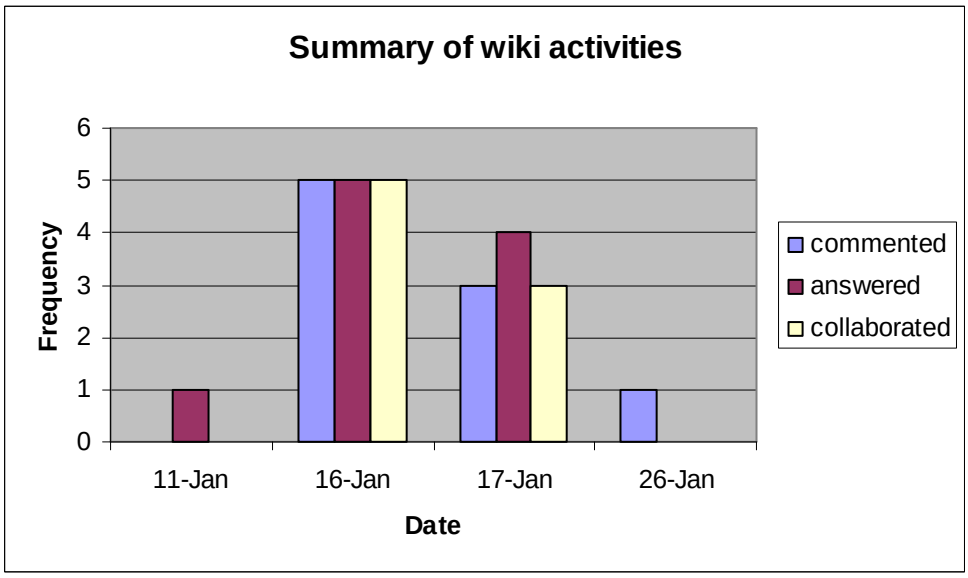

Figure 3 Summary of wiki activities

In the experiment the participants were expected to receive and reply to some of the messages as indicated. The SMS were sent to the experimental group during the intervention period. The summaries of the wiki activities and SMS activities are shown in figures 2 and 3 respectively.

The experimental group was divided into 9 groups with 2 or 3 participants in each group. They were expected to update learning activities that were relevant to their subject each week. The logs show that they attempted to log in and several of them collaborated with each other, particularly in week 2, even though the overall response was not encouraging. However, the statistics for page views was 390. This suggests that they all want to know what others were doing but were unwilling to make their own views or ideas know to other. This could be a cultural trait.

For SMS activities, the response and feedback at the beginning was good where nearly 52% replied to the general quiz sent in the first week. For week 2 until week 5 the number of responses decreased steadily to around 32%. For the topic quiz, relevant question on the topic that they learnt in a particular week was sent. The number of respondents fluctuated but was never more than 32%. The number of respondents for the grammar quiz also fluctuated; the highest was 42%, while the lowest was 5.3%.

6. Discussion

This study has several findings. The first research question's result indicated that the use of mobile phone and wiki in language learning improved students' performance in writing. The second research question's results indicated that students' perception and use has significantly change and the score increase for statement "I would delete reminder sent to my mobile phone from lecturer immediately". The other significant change decrease for statement "I like to receive message on my mobile phone for learning purposes". Research question three resulted as yes where there was a significant difference for liking to receive quizzes on the mobile phone.

Researcher agrees with the findings by Cole (2009) where the author indicates in educational context wiki is perceived differently with ordinary personal use. Participants in the experimental group did not find wiki, a social technologies, helpful in learning. There are a few factors that inhibited students from using wiki and collaborate with their friends. According to Zorko (2009), there are four factors that inhibited students to collaborate using wiki. The factors are frequent face to face meeting, preference for other social networking communications, technical glitches and preference for publishing only the finished product. In the Malaysian context, the study shows that not all students are well acquainted with wiki and it hindered their learning experience other than the other factors that other researchers have pointed out. The factors are not limited to heavy study loads, cultural and educational system.

Research question four is to identify potential learning activities that can be well suited with mobile devices. The findings indicated that the students like to receive SMS for learning purposes i.e. quizzes and lesson reminders.

The overall findings from the study suggested that students still have a positive view of using mobile phone and wiki for language learning even though the results showed negative learning experience. In reality, not all the students are willing to engage with the technologies. A study by Stockwell (2010) however pointed out that apart from small screen problems and inconvenient keypads there are other novel factors that we have yet not discovered. Stockwell further argued that learners can be classified as non-users, try-and-quit users, sporadic users or heavy users of the mobile phone. Koole (2009) in her FRAME (Framework for the Rational Analysis of Mobile Education) model proposes that mobile learning happens in intersection of device, learner and social aspect. According to the framework, apart from evaluating the device, input and output capabilities, it is important to assess learner skills, experience with mobile learning and feelings towards activities.

7. Conclusion and Limitation

The findings of this study could have important implications for second language learning in the Malaysian context. The range of research and projects into the use of mobile phones for language learning has been positive in European countries. The use of communication technologies such as wiki and blog for ESL also shows promising results. However, the idea of combining mobile phone and wiki is not favored in the Malaysian context at this stage. This could be due to psychological, educational system and cultural barriers. Students were not prepared or ready to voluntarily participate as they were also busy with other study load.

The study has several limitations. Firstly, it is not clear whether the students have had any experience in using mobile phone for learning. This could have been asked in the questionnaires or interviews. The pre and post questionnaires could be better matched to make comparison easier. The study could be expanded for the whole semester to provide more and better data and in-depth analysis.

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