

Effects of Implementing C&U-Message through Smartphones on English Grammar Learning for College Students

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ABSTRACT

With the advanced development of mobile technology and portable devices, learners can do their learning activities anytime and everywhere when Internet access is available. Integrating pedagogical and technical strengths of mobile technology into learning settings proves imperative in previous research. Thus, this study aims to investigate the effects of implementing a ubiquitous multimedia message transmitting platform (C&U-Message) on college students' English learning. A total of 26 college students participated in a 6-week experiment used client-side application system C&U-Message (C&U-Msg) system for English learning through Android-based mobile phones. Data collected from the pre- and post-tests and a learning satisfaction survey questionnaire were analyzed. The findings of this study reveal that C&U message application on mobile English learning, learning content for mobile English learning, practical use of C&U message, user satisfaction with learning achievements, use of digital learning materials, and user's attitude toward learning language through mobile devices. Finally, the C&U-Msg system can be effectively utilized for English learning.

Keywords: *C&U-Message (C&U-Msg), mobile learning, smartphone,*

INTRODUCTION

With the advance of mobile technology and the growing population of owning a smartphone, an invisible language lab is gradually constructed. Cloud computing spaces have been establishing to satisfy the requirement of information transmit and push/pull technology in the cyber space. Smartphones equipped with sound multimedia function are made to be language learning tools. Therefore, at the beginning of the 21st century, some research and projects, regarding language learning and mobile technology, have been conducted. In the West, European Union even support a series learning programs to study the effectiveness of the application of mobile handhelds to learning. Besides E.U.'s effort, some researchers (Thornton: 2002, 2003, and 2005; Kiernan: 2004; Levy: 2005) made their subjects to access to language learning material designed for mobile learning. They did language teaching programs through cell phones, utilized their cell phone to learn vocabulary and English idioms, took quizzes, and submitted surveys.

Contrary to that independent learning mentioned in previous passage, we provide our users with learning material that is related to the English course they were taking. By assigning the students exercises through the cyber platform—C&U Message, the Application or App, instead of the traditional paper-based exercises in their textbook, we tend to discover the differences in their learning achievement. Podcast and Apps for language learning are available for learners to do self-study any time and everywhere. Although learners can benefit from information technology (Chinnery: 2006), research on the effects of user's applying mobile technology to dependent language learning has not been done. In our study, we are going to discover the influences of mobile technology on the achievement of language learning. We, in this study, adopted C&U Message, a Ubiquitous multimedia messaging platform (U-Msg),” powered by Google. With this App, students can access to learning materials via their smartphone. By using C&U Message, we also study a learner's attitude toward using a smartphone as a learning device. Even if information technology is beneficial

to learners, a learner's attitude of learning a language by using information technology is another crucial factor on the learner's language achievement. In addition to the users' achievement on their language learning, their attitude toward using mobile devices for learning is also what we would like to find out in this study.

Literature Review

Integration of IT and language learning

As mobile technology, information technology, and portable devices have been advancing, educators apply those tools to learning and teaching to create a learning and teaching environment which is not restricted by time and locations. Facer (2004:1) claimed that most teachers and students, in the U.K., had then taken mobile technologies a familiar part in their daily lives. Since then, information technology has got involved in education. As long as information technology can benefit language learning, learner's achievement can depend on the accessibility and convenience of a learner's using a mobile device for learning. (Chinnery, 2006)

Mobile language learning

The developing mobile technology facilitates retrieving and transmitting information. This technology has been fast growing, and the features equipped in mobile devices have become more various. Mobile learning has been the main stream worldwide. McFarlane, Triggs, and Yee (2008) presented benefits of applying mobile devices to teaching and learning. EU-funded mobile learning projects (Pęcherzewska & Knot, 2007) confirm that mobile handhelds, mobile phones are the most frequently used gadget of all the mobile devices, including personal digital assistants (PDAs) and iPods, which receive a little less attention though. "A typical m-learning activity," stated by Laurillard (2007), "could build in more opportunities for digitally-facilitated site-specific activities, and ownership and control over what the learners do." Agnes Kukulska-Hulme and Shield (2008) also revealed mobile learning is generally expected to employ mobile phones, palmtop computers, and other mobile handhelds. This acknowledges us about the present trend of the application of mobile devices to support language learning.

Mobile technology has been advancing, and Smartphones dominant.

A smartphone as a mobile phone that is able to perform many of the functions of a computer, typically having a relatively large screen and an operating system capable of running general-purpose applications. (Oxford: 2013) With the trend of mobile learning, many learning materials have been developed, in the form of Podcast, widget, and APPs, while others embed the features of interactions and communication (Kukulska-Hulme, and Shield, 2008) to enhance the effectiveness of language learning by using mobile devices.

RESEARCH METHOD

In this study, university students volunteered to join in this case study. For the study effectiveness, we conducted a pre-test and a post-test on the students. The implementation of this study included traditional in-class teaching and mobile learning after class. Afterwards, a questionnaire survey was administered. A total of 26 subjects were all university students from 4 different general English classes at the same level. Based on students' English grade in the national entrance examination, the students were all replaced to form a class with students whose English is level. They volunteered to join in this 6-week teaching experiment. The research instruments in this research include a pre-test and a post-test, and a questionnaire on the experience of using U-Msg system for English learning and the experience of mobile learning. Prior to this experiment, the students were requested to take a pre-test on grammar, covering present simple, past simple, and relative clause. One grammar concept was taught every two weeks in four classes in classes. In addition to the teaching in class, the 26 students received questions for practice every other day and were asked to reply the next day. In these 6 weeks, exercises on handout prepared by the teacher of the classes were the only practice for all students, and no quizzes were conducted to check their progress. The students, at the final stage, took a post-test which is identical to the pre-test and completed a questionnaire. These test questions and sentences in both the pre-test and the post-test were adapted from Grammar in Use by Murphy, published by Cambridge Press. All the questions in the pre-test and the post-test were proofread and approved by 3 English teachers to ensure all the test questions cover the grammar points which were taught in class. The survey questionnaire consists of one checklist with two questions on student's self-study habit and six dimensions regarding C&U message application on mobile English learning, learning content for mobile English learning, practical use of C&U message, user satisfaction with learning achievements, digital learning materials, and the attitude to learning language by mobile devices. The 5-point Likert scale was used in these six dimensions. The students were also requested to provide comments to the two open-ended questions. To sustain the reliability and fidelity of this questionnaire, it is approved by expert's content validity test; three college professors and three English teachers reviewed on the content.

Data analysis and discussion

All the quantitative data collected from the questionnaire was analyzed by SPSS 19.0 descriptive statistics, t-test, and One-way ANOVA. SPSS 19.0 was utilized for statistical analysis in this study. T-test helped to observe the progress of students' performance by the tests. between the experiment and control group and detect improvements in these two groups. The improvements within each group were also calculated. Finally, the responses in the questionnaires were examined and computed by SPSS descriptive analysis.

Table 1: Average grades of the pre-test and the post-test

	Mean	N	SD.	MD.
Pre-test	50.4	26	19.438	3.812
Post-test	58.7	26	21.567	4.23

Table 2: Paired Sample t-test on the pre- and the post- tests

Statement	Mean	SD	t value	Sig.
Paired 1 pre-test and post-test	-8.269	14.487	-2.910	0.007

Tables 1 and 2 show the performance in the pre-test and the post-test the. Table 1 shows the average score of the 2 tests on grammar. We can observe that average grade of the post-test is 58.65, while that of the pre-test is 50.38. Table 2 shows the figures from t-test: $t(25)=-2.91$, $p = .007 < .05$, $d=-.57$, indicating the students' learning is significant improved. In other words, the use of App helps the students in learning English grammar. The following section displays the analysis result of the survey on 6 aspects, including C&U message application on mobile English learning, learning content for mobile English learning, the extent of practical use of C&U Message Application, User satisfaction with learning achievements, the use of digital learning materials, and user' attitude to learning language by mobile devices.

Table 3: Learning Content for Mobile English Learning

Item	Statement	Mean	SD	t value	Sig.
II.1	The exercise questions pushed to the App are related to the lessons of my English course.	4.69	0.471	18.333	.000
II.2	The exercise questions pushed to the App can help me review the grammar taught in class.	4.50	0.510	15.000	.000
II.3	The 3-time-a-week practice can keep up the familiarity to grammar.	4.08	0.796	6.897	.000
II.4	The exercise questions are just enough to help me with review grammar points without adding up my study load	4.19	0.634	9.594	.000

Test value = 3

Table 3 indicates the domain of learning content for mobile English learning. The obtained means are greater than 3 with $p = .000 < .01$. The students take a positive attitude toward the learning materials and the way which was conducted for more practice after class. Also, this statistics reveals that these exercises do not lay extra load on their schoolwork and helps them review and get proficient at what was taught in class.

Table 4: Practical Use of C&U Message

Item	Statement	Mean	SD	t value	Sig.
III.1	App can let me learn English whenever there is Internet access.	4.00	0.693	7.36	.000
III.2	App can be a sufficient aid tool to my English learning.	3.81	0.694	5.935	.000
III.3	I can effectively use scrappy time to review English.	3.96	0.662	7.404	.000
III.4	App can help me twice the result with half the effort in learning English.	3.65	0.745	4.474	.000
III.5	Compared with the traditional paper-based homework, exercises pushed on to the App can better force me to complete the homework.	3.62	0.941	3.333	.003

Test value = 3

III1 to III5 are the questions on the practical use of the App, C&U message. The means of these questions range from 3.62 to 4 ($p=.000<.01$), indicating the participants think it helpful to learn English by the online learning platform, from the aspect of make an effective use of scrappy time. Item III. 5 " Compared with the traditional paper-based homework, exercises pushed on to the App can better force me to complete the homework." reached the lowest means of 3.62, however, the subjects thought they were pushed to complete the assignment because they were told to submit the answers the next day when they received the exercise questions. In that case, the teacher can assure that the students did the exercise according to the record on the platform.

Table 5 User Satisfaction with Learning Achievements

Item	Statement	Mean	SD	t value	Sig.
IV.1	I feel satisfied that I can figure out some grammar ideas.	3.69	.679	5.196	.000
IV.2	I am satisfied that I have learnt and corrected the errors that I had before.	3.85	.732	5.897	.000
IV.3	I feel satisfied with my familiarity with correct use of grammar and concepts.	3.81	.801	5.142	.000
IV.4	I am satisfied with my overall learning achievement.	3.69	.736	4.797	.000
IV.5	Comparing with the pre-test, I can have better understanding in answering the questions.	3.77	.587	6.682	.000

Test value = 3

The statistics presented in Table 5 illustrates learners' satisfaction with their achievements. The means ranges from 3.69 to 3.85. p value is $.000<.01$ and significantly indicate that the subjects felt satisfied with what they had learnt and correct wrong concept and ideas that they used to be confused with.

Table 6: Statistical results of digital learning materials

Item	Statement	Mean	SD	t value	Sig.
V.1	I will read the detailed explanation uploaded to "Digital Materials" by the teacher.	3.730	0.827	4.503	.000
V.2	I will read the detailed explanation uploaded to "Digital Materials" by the teacher only when I can access to the Internet and browse it on line.	3.62	0.898	3.495	.002
V.3	I will download the materials uploaded in "Digital Materials" and read it when off line.	3.00	1.02	0	1.000
V.4	I will review the detailed explanation constantly.	3.00	0.8	0	1.000
V.5	I think it very convenient that I can read the digital material on line without downloading the text.	4.00	0.849	6.009	0.000

Test value = 3

Table 6 presents participants' thoughts about the digital materials provided for them to recapture the grammar points and detail explanation to the exercise questions they did. The means range from 3 to 4. Both Item V.3 "I will download the materials uploaded in "Digital Materials" and read it when off line." and V.4 "I will review the detailed explanation constantly." obtained 3, which tell that to download the digital materials for off-line review was not positively supported by the students.

Table 7: Statistical results of the Students' language learning attitude through Mobile phones

Item	Statement	Mean	SD	t value	Sig.
i.1	I can accept learning English by a mobile device.	4.27	0.724	8.935	.000
i.2	I can accept teacher assigns me homework and I submit it with App.	4.12	0.864	6.584	.000
i.3	For efficient time management, I can accept learning English with App.	4.15	0.732	8.041	.000
i.4	For forced study, I can accept learning English with App.	3.62	1.023	3.068	.005
i.5	To improve my own learning achievement, I can accept learning English with App.	4.19	0.749	8.113	.000

Test value = 3

Table 7 demonstrates students' attitude toward the use of App on a smartphone to do language learning. The means of all the items range from 3.62 to 4.27 ($p=.000<.01$). Item i.1 "I can accept learning English by a mobile device." clearly shows that the students are with high acceptance in using a smartphone as a learning tool. From Item i.4 with the mean of 4.19, the students showed a positive attitude to mobile learning in the condition of improving their performance in English, while Item i.4 ($m=3.62$), the lowest in this domain, may tell that the students do not want to have pure English learning through App. They accept mobile learning through App on a smartphone only when this activity is schoolwork-relevant. This fact echoes the commons on the advantages of C&U Message. From our questionnaire, most of the students stated that they can still review grammar after class without a textbook. Some students said it's good to bring the exercise question everywhere to discuss with other people. In general, they gained more chances to practice and get familiar with grammar points taught in class. Therefore, teachers may assign their students homework through an App instead of a traditional paper-based homework. In this case, the students can make use of their choppy time to finish their assignment. For the teachers, they can easily monitor the status of their students' reply in the platform.

Table 8 User's attitude to utilize other English learning Apps

Item	Statement	Mean	SD	t value	Sig.
ii.1	I can still choose and install suitable language learning App to do learning.	4.230	0.765	8.208	.000
ii.2	I think a smartphne is suitable as a device for English learning	4.19	0.849	7.157	.000
ii.3	I think I can learn English by a smartphone anytime and everywhere.	4.42	0.643	11.28	.000
ii.4	I think, for learning English, the screen of a smartphone is big enough.	3.96	0.871	5.63	.000
ii.5	I think it is handful to use a touch screen to type when I use a smartphone to learn English.	3.88	1.033	4.368	.000
ii.6	I think using a smartphone as a learning device can motivate me to learn English.	4.31	0.62	10.795	.000
ii.7	I think I can use scrappy time more effectively to learn English by a smartphone.	4.38	0.571	12.362	.000
ii.8	I think a smartphone helps me with time management for learning English.	4.00	0.632	8.062	.000
ii.9	Overall, I think a smartphone as a learning device can benefit learning English.	4.23	0.71	8.835	.000

Test value = 3

Table 8 reveals the User's attitude to utilize other English learning Apps after they experienced the learning model during the past 6 weeks. Item ii.1 to ii.9 obtained means raging from 3.88 to 4.42 with $p=.000<.01$. Although the comments these students made on the disadvantages of C&U Message App, the results indicate that the subjects retain a positive attitude of mind to utilize a language learning App in a smartphone.

According to the comments in the questionnaire on the disadvantages of C&U Message, the App, they all mentioned about the problem of not receiving instant notices from the App if there is a new exercise or if they have not yet completed and submitted their answers. Additionally, the system is not stable enough when applied to smartphones with different brand, which are all equipped android system. Disconnection to the C&U Message and its auto shutdown are the 2 drawbacks stated in the questionnaire. However, Item ii.3, ii.7, and ii.8, regarding time management for study, obtained the mean of 4.42, 4.38, and 4. These results explain that flexibility in the use of time and less restriction in locations obtain the users' high acceptance in adopting a learning Apps to learn a language by a smartphone.

CONCLUSION AND SUGGESTIONS

Based on the findings of this study, in terms of familiarity with the use of grammar, doing lesson-related practice by C&U Message is more effective for the students than doing exercises in their textbook. The score of the pre-test and the post-test suggests that they made a significant improvement. As to the impact of mobile technology on language learning, the students could complete exercises in their fragment time, so the App helped them with time management for reviewing and refreshing grammar in lessons. Despite of C&U Message's instability which the students experienced during the experiment, they still hold confidence in learning language with an App on a smartphone. We, especially, found that they are more willing to use a language learning App when the learning materials are school course related. This explains that the participants retain a positive attitude to the application of mobile technology on learning. In this mobile technology dominated society, from the aspect of efficient learning, we can encourage teachers to be familiar with the latest and popular educational technologies, and assign their students homework through such a language learning platform as C&U Message. Finally, to utilize the media functions for mobile learning, the effectiveness of using recording and filming features in improving verbal communication, or speaking ability can also be a future research to do.

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