



A Study on Mobile-assisted Vocabulary Learning With Dictionary-based, Corpus-based, and Video-based Tasks

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ABSTRACT

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The purpose of this study was to investigate the effectiveness of mobile-assisted vocabulary learning with three different tasks: dictionary-based, corpus-based, and video-based tasks. The experiment was administered in the spring semester of 2017. One hundred thirty-five Korean college students participated in the current study. Participants were randomly divided into three groups, dictionary group, corpus group, and video group, and performed different vocabulary tasks for homework. They studied 10 words per week. There were a total of 160 words for sixteen weeks. To assess vocabulary learning from the different tasks, pre- and post-tests were conducted before and after the experiment. A questionnaire survey was also performed to examine group differences in their attitudes and perceptions towards vocabulary learning. Paired samples *t*-tests as well as ANOVA and ANCOVA were administered. Major findings are as follows: First, participants in corpus and video groups increased their vocabulary gains. Group comparison results on the post-test also revealed no significant differences, indicating that three vocabulary tasks are equally beneficial for vocabulary learning. Lastly, attitudes and perceptions towards mobile-assisted learning positively observed. In particular, video-based vocabulary tasks appeared to provide the most interesting and motivating learning environments. The present study sheds new light on different types of mobile-assisted vocabulary tasks in EFL fields.

I. INTRODUCTION

Vocabulary is essential to language. Vocabulary acquisition, therefore, is the single most important aspect of language learning (Ali, 2012). Students of a foreign language understand the extent to which limitations in vocabulary knowledge can restrict their foreign language skills (Nation, 2001), and thus, the majority of them cite vocabulary acquisition as their number one priority (Knight, 1994).

Unfortunately, foreign language students often face difficulties in vocabulary learning. One of the main obstacles

that they encounter is the number of vocabulary words they need to acquire. According to Nation (2001), when students of English as a foreign language (EFL) try to understand non-specialized texts, they need to know more than 5000 base words as a minimal requirement. In addition, for long-term retention, EFL students should practice and rehearse the words purposefully. However, the amount of class time for vocabulary learning in many EFL educational and academic settings is very limited (Derakhshan & Khodabakhshzadeh, 2011).

Language teachers and researchers in EFL settings are

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well aware of this situation. They have been concerned about how to use the limited class time to promote vocabulary language learning. Therefore, there has been a need for studies that help to find out tasks providing opportunities for vocabulary learning from a pedagogical perspective. Different types of approaches, techniques, and exercises have been introduced to the field of vocabulary teaching. Given the importance of vocabulary knowledge to learning a language, studies on the effectiveness of different types of vocabulary learning methods and tools as well as instructional techniques have been of considerable value to foreign language research and pedagogy.

Grounded on the assumptions of mobility and portability of mobile phones, vocabulary learning through text-messaging has been emphasized as one of the emerging areas in EFL fields. The limited class time requires utilizing text-messaging vocabulary learning via mobile phone, and sending vocabulary words and quizzes to students via text-messaging can draw on these mobility and portability of mobile devices. As a complementary teaching aid, mobile phones have been largely applied in language learning and teaching (Chinnery, 2006; Levy & Kennedy, 2005; Lu, 2008; Thornton & Houser, 2002; 2003; 2005). In particular, text-messaging has provided optimal psychological conditions for effective vocabulary learning. According to Nation (2001), cumulative learning, which is the most effective way to learn vocabulary, is possible through text-messaging. Also, text-message vocabulary learning provides a novel and portable learning experience with a relaxing condition.

Nevertheless, EFL teachers still have little idea how to support their students effectively. Particularly, many of studies on mobile-assisted language learning have ignored the “anytime, anywhere” affordances provided by mobile devices (Derakhshan & Khodabakhshzadeh, 2011). For example, Levy and Kennedy (2005) and Lu (2008) sent text-messages to EFL students only at fixed times on set days, so the students were not able to obtain this information when they wanted it. This indicates that mobile devices have not been fully utilized in the design of mobile-assisted learning activities (N. Y. Kim, 2017; Kukulska-Hulme, 2007). Given this, there is a need to illuminate a more effective way to help EFL students improve their vocabulary with mobile-assisted language learning. The present study, therefore, aims to investigate effects of mobile-assisted vocabulary learning with three different tasks – dictionary-based, corpus-based, and video-based tasks – and answers the following research questions:

- 1) What are the effects of task types of mobile-assisted vocabulary learning on EFL students’ vocabulary development?
- 2) What are the effects of task types of mobile-assisted vocabulary learning on EFL students’ attitudes towards language learning?

II. LITERATURE REVIEW

1. Mobile-assisted Language Learning

Mobile-assisted language learning has largely emerged in EFL instruction. Mobility and accessibility of mobile phones have attracted many EFL scholars and researchers to apply them in educational settings. Applying these portable technologies have enabled modern learners to study anytime and anywhere (Evans, 2008). As mobile phones have been put into practice for educational purposes, mobile-assisted language learning has also become a popular topic in foreign language learning (Thornton & Houser, 2005).

Many studies have examined the effects of mobile-assisted language learning on improving foreign language skills. The first attempts were discussed by Brown (2001). He explored the use of mobile phones for vocabulary activities including vocabulary quizzes and lessons. In his study, Brown found that mobile phones are useful tools for vocabulary learning. In terms of mobile phone use for developing listening skills, Nah, White, and Sussex (2008) carried out a quasi-experimental study. At the end of the study, the authors revealed that foreign language learners can be more motivated to learn a language when using mobile phones because of their positive attitudes towards mobile phone use as a means of learning. Baleghizadeh and Oladrostam (2010) studied the use of mobile phones for improving the grammatical knowledge. In order to elicit the given grammatical items, the participants were required to use mobile phones for their speaking assignment. The findings confirmed the effects of mobile-assisted language learning on foreign language learners’ grammar acquisition.

By helping students remain more focused for longer periods, mobile-assisted language learning raises students’ self-esteem and self-confidence (Attewell & Savill-Smith, 2004). Furthermore, student-initiated and student-centered use of language through mobile phones can promote vocabulary learning. Through SMS (Short Message Service), students are able to use words to make a sentence, send them at spaced intervals to their teachers, and receive the feedback. In this way, they can retrieve the target word more easily. Besides, connectivity, social interactivity, individuality, and informal learning play important roles in learning vocabulary via text-messaging (Kukulska-Hulme, 2007).

In addition, in the age of mobile learning, a teacher-centered approach is limited pedagogically (Godwin-Jones, 2017). With their great potential of language learning, students can engage in multiple forms of informal learning through mobile phones: accidental learning by watching videos in YouTube, incidental learning by playing games, or instrumental learning by using a language learning service or application. These informal opportunities for language learning happen through mobile applications and these mobile activities can be chosen by students, not their

instructor. By removing the formality from the learning experience, mobile phones can engage reluctant students in a meaningful way. This is a powerful motivator, encouraging discovery learning and deeper processing.

As can be seen above, there have been many studies in recent years on the effects of mobile-assisted language learning with powerful features of a smartphone (Godwin-Jones, 2017). In particular, as mobile phones feature many capabilities including text-messaging, voice-messaging, photo-taking, and even video-recording, these features enable students to access to authentic content and engage in communicative language practices. Nonetheless, studies of such uses are scarce (Chinnery, 2006). McNeal and van't Hooft (2006) reported that mobile phones have not been widely used in educational settings. In addition, as Burston (2014a) noted, mobile-assisted language learning still remains on the fringe of instructed language learning. Mobile projects by and large lack a theoretical framework (Bozdoğan, 2015), curricular integration (Burston, 2014b), and learning strategies (Viberg & Grönlund, 2012). Moreover, there are only a few studies examining their use outside the classroom (Godwin-Jones, 2017).

2. Mobile-assisted Vocabulary Learning

In recent years, mobile devices for vocabulary learning have been increasingly designed, developed, and utilized. Accordingly, studies on mobile-assisted vocabulary learning have also been increasing. One of the first vocabulary projects in foreign language learning with mobile phones was developed in the Stanford Learning Lab (Brown, 2001). Exploring the use of mobile phones in vocabulary learning, they developed language programs. There were vocabulary lessons, quizzes, and word and phrase translations. Findings of their study indicated that mobile phones can help improve vocabulary learning. To be specific, mobile phones were effective for quiz delivery when delivered in small chunks. Furthermore, they had great potential related to automated voice vocabulary practices.

Thornton and Houser (2002) also asserted that vocabulary lessons via mobile phones are effective. In their study, vocabulary words were delivered as push media. Consequently, they promoted frequent rehearsal and utilized recycled vocabulary. This is in accordance with the previous studies suggesting that constant and distributed practice is more beneficial for language learning than massed practice (Schmitt, 2008) since vocabulary words are better memorized when they are presented temporally apart than presented together at one time (Derakhshan & Khodabakhshzadeh, 2011).

In 2003, Thornton and Houser created a classroom polling system named EduCALL to survey students during class so as to determine vocabulary retention. After poll questions were projected, students surfed to the polling software and made their selections using their mobile phones. As the tabulations were projected in the form of bar graphs, the students and teachers were able to receive

immediate feedback. Thornton and Houser (2003) pointed out that although their tiny screen sizes are deemed unsuitable for learning new contents, mobile phones are effective for review and practice. They enhanced regular study, which in turn, resulted in more exposure to the target language and more vocabulary gains than did the detailed presentation of the lessons.

Accordingly, Thornton and Houser (2005) also developed several projects using mobile phones to teach English in an EFL context focusing on vocabulary instruction by SMS. Three times a day, students received short mini-lessons. Per week, there were five words from various contexts, including episodic stories. The vocabulary words were recycled every week. To be easily readable on tiny screens, the lessons were sent in discrete chunks. Students were tested once every two weeks. Comparing to groups that received same lessons on paper and the Web, the authors explored the usability and learning issues of mobile phones. Findings of their study indicated that students in SMS group learned more than twice the number of English vocabulary words as those in Web group. Furthermore, SMS students improved their vocabulary test scores twice as much as students in paper group. Plus, in terms of students' attitudes, the majority preferred the SMS instruction and wished to continue such lessons. They also regarded it as a valuable teaching method.

Levy and Kennedy (2005) utilized a vocabulary learning program for foreign language students by sending vocabulary words and idioms, definitions, as well as example sentences via SMS. They requested feedback from the students in the form of follow-up questions and quizzes. In their conclusion, the authors noted that the students' motivation became higher and the vast majority found the experience positive. To be specific, 84 percent of students responded that they enjoyed receiving the text messages and they found them useful. Moreover, all of them agreed that the messages helped consolidate and extend their vocabulary. Their interest in vocabulary learning increased as well.

In line with them, Chinnery (2006) also examined mobile-assisted vocabulary learning. He reported on mobile projects for vocabulary practice, vocabulary quiz delivery, email lesson content delivery and live tutoring. Interestingly, Chinnery reported that technical problems can arise because of the limitations inherent in the devices. Their small and low-resolution screens are problematic for text reading and image or video display. In addition, the audio quality is usually poor both in phoning and audio playback. They have limited storage and memory function. Another serious problem is related to slow Internet connectivity. Since these issues have hampered language learning projects, Chinnery (2006) urged caution when using mobile phones for vocabulary learning.

In Taiwan, Chen, Hsieh, and Kinshuk (2008) set out a study on the use of mobile phones for English vocabulary acquisition. Their study indicated that participants enjoyed using their mobile phones for vocabulary learning due to easy access to learning materials and no bounds on time

and place. Interestingly, some participants liked the screen size limitations because it made the amount of learning contents more manageable. Chen, Hsieh, and Kinshuk also highlighted that as 24-hour access is provided, students can access their learning materials, submit assignments, and receive teacher anytime outside of the classroom if using mobile phones for vocabulary learning.

Given the importance of vocabulary knowledge to learning a foreign language, there is a need to explore various ways to improve EFL students' vocabulary skills with a wide range of advantages of mobile phones. However, most vocabulary projects still use text-messaging by periodically sending messages to students, even after 2010 (Alemi, Sarab, & Lari, 2012; Hayati, Jalilifar, & Mashhadi, 2013; Suwantarathip & Orawiatnakul, 2015). Moreover, many of them consider vocabulary learning through text message as only one of the emerging areas in EFL fields. Considering this, there is a need to seek a more effective way to help EFL students develop their vocabulary with mobile phones. The present study, therefore, aims to investigate effects of mobile-assisted vocabulary learning with three different tasks: dictionary-based, corpus-based, and video-based tasks.

III. METHODOLOGY

1. Participants

The focus of this study was to determine whether the type of mobile-assisted vocabulary learning had a notable effect on EFL vocabulary development. The experiment was administered in the spring semester of 2017 academic year. One hundred thirty-five Korean undergraduate students were recruited. They were all first-year students and their age ranged from 20 to 21.

All participants were native speakers of Korean. As the participants' English proficiency level was considered intermediate by the university's diagnostic test administered before the experiment, they were taking an intermediate English course. The diagnostic test consisted of two parts – Reading and Listening. There were 15 items in each part.

The English course was divided into 3 sections, and each has 45 students taught by the same instructor with a common outline. The instructor was TESOL certified with 5-year teaching experience. Class met twice a week for 75 minutes each session. It was coordinated with the same syllabus, same textbook, and identical assignments and exams. All sections got the same materials in the same week.

For the experiment, participants were divided into three groups at random: Dictionary group, corpus group, and video group. The dictionary group consisted of 38 participants and they studied the given vocabulary words by visiting the dictionary website <http://www.dictionary.com/> on their mobile phones. The corpus group consisted of 54

participants and they studied the given vocabulary words by visiting the corpus website <https://corpus.byu.edu/coca/> with their mobile phones. The video group consisted of 43 participants and they also used mobile phones to study the given vocabulary words by visiting the video website www.divii.org. All participants understood the experiment details with benefits and challenges.

2. Materials

1) Dictionary-based Vocabulary Learning

When learning a foreign language, dictionaries are an indispensable tool for mastering vocabulary. They provide students with access to a huge amount of information about a word and its usage. Thus, participants in the dictionary group visited one of the free dictionary websites <http://www.dictionary.com/> using their mobile phones to study the given vocabulary words. This monolingual dictionary website provides online source for English definitions, synonyms and antonyms, idioms and phrases, word origins, and example sentences. From this website, the participants checked the meaning, the part of speech, and some example sentences of the words they found.

The monolingual dictionary was chosen because many high frequency words are given appropriate consideration and treatment in monolingual dictionaries compared to bilingual dictionaries (Hayati & Fattahzadeh, 2006). As the monolingual dictionaries contain vocabulary words that are widely used in English textbooks, they are not only able to demonstrate the definitions of the words but also other important aspects. In addition, by offering definitions in context, they are considered to promote fluency. Therefore, foreign language students have been encouraged to use monolingual dictionaries because they are useful and help the students to learn better and more effectively (Ali, 2012). In this light, this website was chosen for the dictionary group (see Figure 1).

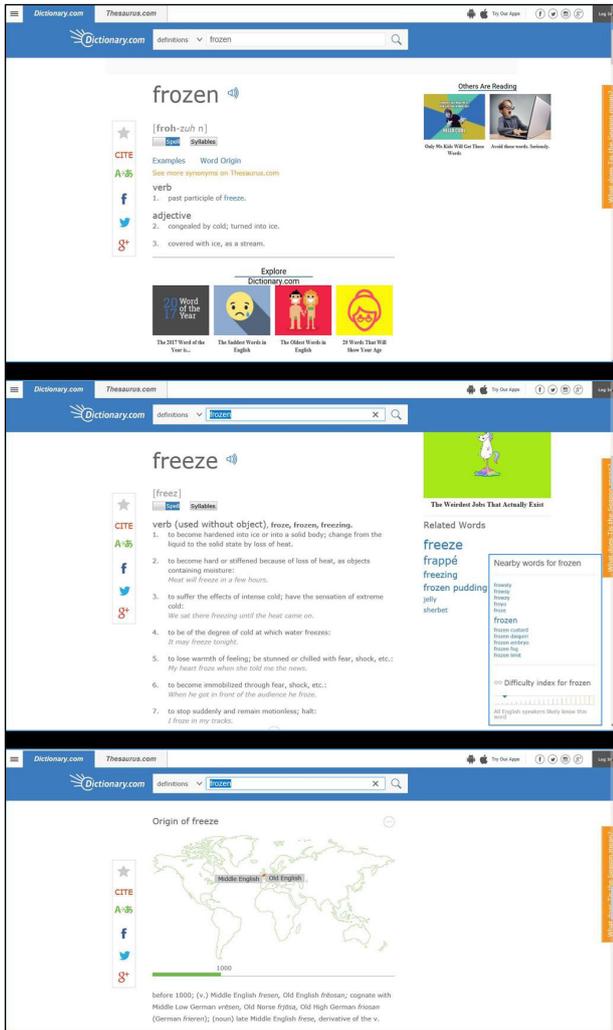


FIGURE 1 Dictionary-based Vocabulary Learning

2) Corpus-based Vocabulary Learning

Participants in the corpus group visited the corpus website <https://corpus.byu.edu/coca/> and searched a word or phrase from the site using their own mobile phones. With the corpus results, they were able to look at authentic example sentences. The corpus-based task required a higher degree of cognitive processing because the students played a role as word detectives by analyzing and evaluating the given corpora. Known as the largest freely-available corpus of American English, the Corpus of Contemporary American English (COCA) website contained over 560 million words of text. See Figure 2.

Corpus linguistics indicates the study of language through corpora – the body of text – of authentic texts. In vocabulary learning, corpus linguistics has been recognized to be beneficial providing students with insight into many different aspects of how words are used (Shaw, 2011; Sinclair, 2004). It can fill in the gaps in collocation and context that traditional dictionaries fail to provide. With the authentic data provided through technology,

students can actively engage in acquisition of the information. As word detectives, the students can study the patterns and regularities in words, grammar constructions, and discourse (Hadi, 2013). This information gathered is an effective tool in vocabulary learning and ultimately in language development. Thus, for language students, the corpus is a useful tool to see vocabulary in context (J. U. Yun & J. I. Han, 2015).

However, corpus results as well as dictionaries have difficulty in explaining and describing something that is very visual such as movement. In addition, since the corpus is text-based, it is unable to listen to the pronunciation of a word as well as its nuances such as stress. In this light, it has been suggested that watching videos are valuable for this (J. Lee, D. Lee, J. Moon, & M. C. Park, 2013).

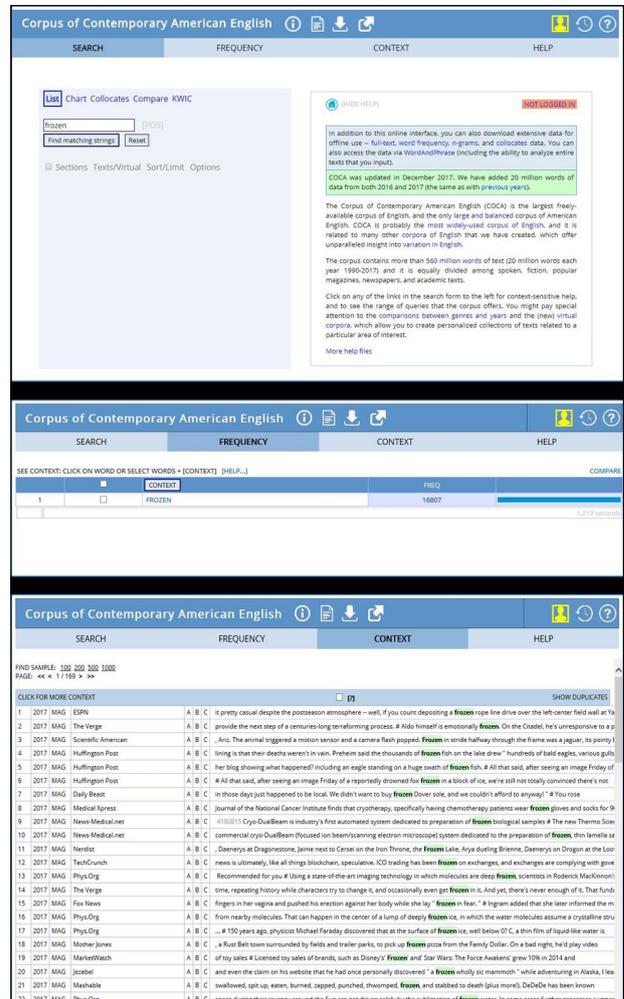


FIGURE 2 Corpus-based Vocabulary Learning

3) Video-based Vocabulary Learning

In the age of mobile learning, with their great potential of language learning, students can engage in multiple forms of informal learning such as watching videos in YouTube (Godwin-Jones, 2017). Following what is being said with subtitles, students can learn vocabulary, pronunciation, grammar, and conversational language including real-life usages. It is also claimed that combining visuals with texts is more effective in promoting vocabulary learning compared to providing only definitions of a word (Akbulut, 2007).

As seen from Figure 3, Divii is one of online tools that help search transcripts from many different videos in a semi-corpus way. It doesn't require any registration to use. Participants in the video group went to the website www.divii.org with their own mobile phones, typed a word or phrase in the search box, and clicked on the search button. Then, they were taken to search results. On the left, there was a thumbnail of the video. On the right, there were texts from a section of that video along with the word or phrase in it. The participants clicked on the video they would like to watch. Starting to play, the transcripts were shown with the counter time. As the video played, it continuously moved through the transcript in sections.

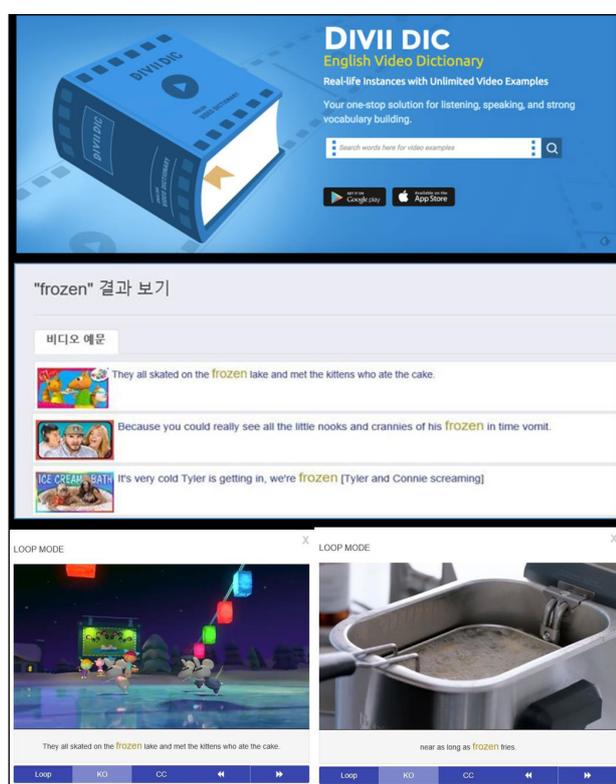


FIGURE 3 Video-based Vocabulary Learning

As mentioned earlier, corpus results as well as dictionaries often face difficulty explaining things and ideas that are not easy to describe (e.g., eclipse). Because they are text-based, it is also unable to listen to the pronunciation

and nuance of a word. Given the belief that EFL students heavily depend on visual cues to support their understanding (Cakir, 2006), watching videos can be recommended as a pedagogical tool. Nevertheless, there have been not many studies examining the effects of videos on vocabulary development (Yuksel & Tanriverdi, 2009). Thus, this study also investigated the effectiveness of video-based vocabulary learning tasks with mobile phones.

3. Procedure

The present study was to investigate effects of mobile-assisted vocabulary learning with three different tasks: dictionary-based, corpus-based, and video-based tasks. In an effort to establish the participants' vocabulary level and to ascertain whether the three groups were homogeneous, a vocabulary pre-test was conducted before the actual experiment began. The test was based on the previous study (J. U. Yun & J. I. Han, 2015). After the vocabulary pre-test, all participants in three groups were given separate vocabulary tasks for homework.

The participants in all three groups were given 10 words per week, a total of 160 words over sixteen weeks. Because the participants were of intermediate English proficiency level taking an intermediate English class, vocabulary words deemed to be of intermediate difficulty were employed. Hence, the vocabulary words were taken from an intermediate-level reading textbook (Bankier, 2011), Reading Explorer 3, by Heinle Cengage Learning – Intermediate level with 1900-2600 headwords. Although the 160 target words assigned were the same for all groups, the vocabulary tasks were different: dictionary-based task, corpus-based task, and video-based task. More detailed information was described in the previous section.

After completing the tasks, the same vocabulary post-test was administered so as to assess vocabulary learning from the different tasks. Regarding test items, a total of 20 vocabulary questions were on the test. The 20 vocabulary words were selected at random from the 160 target words. About the scoring rubric, one point for each item was assigned, making the vocabulary test worth a total of 20 points. Examples are given in Figure 4.

corpus-based and video-based vocabulary learning tasks – significantly improved the students’ vocabulary gains. These results are in line with previous studies suggesting that mobile assisted language learning is beneficial for EFL vocabulary development (Chinnery, 2006; Levy & Kennedy, 2005; Lu, 2008; Thornton & Houser, 2002; 2003; 2005). Considering that the students in EFL settings have limited opportunities to be exposed to the target language, these kinds of exposure and practice seem needed (Derakhshan & Khodabakhshzadeh, 2011).

2. Group Differences on the Vocabulary Pre- and Post-tests

This study also aimed to figure out the effectiveness of different types of mobile-assisted vocabulary learning tasks. Before the actual experiment began, in an effort to confirm whether the three groups were homogeneous, scores on the vocabulary pre-test were analyzed.

With a one-way ANOVA, pre-test scores were compared so as to determine if the three groups were homogeneous in vocabulary knowledge. As shown in Table 2, a significant difference in vocabulary knowledge among the three groups was revealed ($F = 6.820, p = .002$). The dictionary-based vocabulary learning group significantly outperformed the other two groups with the mean score of 17.39 out of 20. The mean score of the corpus-based group on the pre-test was 14.28, which was followed by the mean score of 12.70 from the video-based group. This result indicated that the three groups were not homogeneous at the beginning of the study. Thus, to examine the effects of different vocabulary task types, a one-way ANCOVA was conducted on the post-test scores.

TABLE 2
ANOVA Results for the Vocabulary Pre-test

Group	Pre-test		F	p
	M	SD		
Dictionary	17.39	4.95	6.820	.002
Corpus	14.28	5.26		
Video	12.70	7.00		

As can be seen from Table 3, the descriptive results on the vocabulary post-test revealed that the dictionary-based vocabulary learning group still performed better than the other two groups with the mean score of 17.82. The mean score of the corpus-based group on the post-test was 17.20, while that of the video-based group was 16.70. However, the result of ANCOVA for the vocabulary post-test scores showed no statistically significant differences among the three groups ($F = .803, p = .450$). That is, the post-test results indicate that the three types of mobile-assisted vocabulary learning tasks did not have any differential effects on EFL students’ vocabulary development, implying that there are no differences in the three types of vocabulary tasks. In other words, this result can be interpreted that the three different mobile-assisted vocabulary

learning tasks have equal effectiveness in enhancing vocabulary knowledge.

TABLE 3
ANCOVA Results for the Vocabulary Post-test

Group	Pre-test		F	p
	M	SD		
Dictionary	17.82	4.72	.803	.450
Corpus	17.20	4.40		
Video	16.70	5.51		

Previous studies have shown different ways to improve vocabulary and learn new words. First of all, as an indispensable tool for mastering vocabulary, dictionaries have been widely used in EFL fields since they have been considered to be useful for EFL students to learn English vocabularies better and more effectively (Ali, 2012; Hayati & Fattahzadeh, 2006). Accordingly, corpus linguistics has also been recognized to be beneficial because they can provide language students with insights into different aspects of how words can be used (Shaw, 2011; Sinclair, 2004). For example, as word detectives, students are able to actively engage in acquisition of the information by investigating the patterns and regularities in words, grammar constructions, and discourse with the authentic data provided (Hadi, 2013; J. U. Yun & J. I. Han, 2015).

Likewise, J. Lee, D. Lee, J. Moon, and M. C. Park (2013) suggested that watching videos with subtitles provided is valuable for students to learn vocabulary as well as pronunciation and conversational language including real-life usages. Nonetheless, there have been not many studies examining the effects of videos on vocabulary development (Yuksel & Tanriverdi, 2009). Thus, there has always been a need to investigate the effects of using subtitled videos in English. In light of this, findings of this study provide evidence that video-based vocabulary learning tasks are as equally effective as dictionary- and corpus-based tasks. Showing that videos are equally beneficial for developing English vocabulary words, this supports the previous research demonstrating that combining visuals with texts together is effective in facilitating vocabulary learning (Akbulut, 2007). Particularly, given that EFL students depend heavily on visual clues to help their understanding (Cakir, 2006), videos can be an effective pedagogical tool in EFL fields.

3. Group Differences on Attitudes Towards Language Learning

To explore group differences in attitudes towards language learning, all participants were given a questionnaire survey. The questionnaire items were about belief, interest, and motivation. Table 4 shows the descriptive data and ANOVA results for the survey.

As can be seen from Table 4, participants in all three groups responded positively to mobile-assisted vocabulary learning. A close examination revealed that the positive re-

sponses were obtained in all items related to belief, interest, and motivation, with mean scores of higher than 3.30 out of 5. To be specific, when it comes to the participants' belief in vocabulary learning, the highest mean score was 3.53 (corpus) while the lowest was 3.39 (dictionary). As for the participants' interest in vocabulary learning, the highest mean score was 4.06 (video) and the lowest was 3.32 (dictionary). Likewise, in terms of motivation, the mean score of the video-based vocabulary learning group was the highest (4.07), while that of the dictionary-based group was the lowest (3.53).

In an effort to ascertain whether these survey results are statistically significant, one-way ANOVAs for the group comparative analysis was run. As shown in Table 4, significant differences were observed in two aspects: interest ($F = 28.352, p = .000$) and motivation ($F = 14.661, p = .000$).

TABLE 4
Descriptive Data and ANOVA Results for the Survey

Questionnaire Item	Group	Survey		F	p
		M	SD		
Belief	Dictionary	3.39	0.55	.947	.391
	Corpus	3.53	0.50		
	Video	3.50	0.41		
Interest	Dictionary	3.32	0.54	28.352	.000
	Corpus	3.67	0.40		
	Video	4.06	0.39		
Motivation	Dictionary	3.53	0.45	14.661	.000
	Corpus	3.81	0.46		
	Video	4.07	0.43		

Table 5 shows the post hoc test results. Bonferroni post hoc tests were administered to determine which group is superior to the other. The multiple comparisons of Bonferroni post hoc tests on interest reached the .01 significance level, indicating that the mean scores of video-based vocabulary learning group (4.06) and corpus-based vocabulary learning group (3.67) were significantly higher than the mean score of dictionary-based group (3.32). Furthermore, the mean score of video-based group (4.06) was also significantly higher than that of corpus-based group (3.67). With respect to motivation, the mean scores of video-based group (4.07) and corpus-based group (3.81) were significantly higher than the mean score of dictionary-based group (3.53). In addition, the mean score of video-based group (4.07) was also higher than that of corpus-based group (3.81), reaching the .05 significance level.

Findings of the current study support that mobile-assisted vocabulary learning tasks positively affects EFL students' attitudes toward language learning with mean scores higher than 3 out of 5-point Likert scale. Particularly, the survey results indicate that video-based vocabulary learning provides more interesting and motivating learning environments compared to dictionary-based and corpus-based learning. According to Nation (2001), interest and motivation are the two important conditions as

TABLE 5
Bonferroni Post Hoc Test Results

		MD	SE	p
Interest	Dictionary < Video	0.74	0.098	.000
	Dictionary < Corpus	0.35	0.093	.001
	Corpus < Video	0.39	0.090	.000
Motivation	Dictionary < Video	0.54	0.100	.000
	Dictionary < Corpus	0.28	0.095	.012
	Corpus < Video	0.26	0.092	.014

the first step in language learning. Since mobile-assisted vocabulary learning provides a novel and relaxing learning condition, students can acquire vocabulary words with increased interest and motivation. Considering that the number of studies examining the functions of videos in EFL language learning is relatively few compared to their popularity in vocabulary development (Yuksel & Tanriverdi, 2009), this study fills in the gap in literature, providing positive aspects of video-based language learning with mobile phones.

V. CONCLUSION

The majority of foreign language students cite vocabulary learning as their number one priority (Knight, 1994). As mobile devices have been developed, as a potential tool, mobile-assisted language learning has emerged in EFL instruction and utilized to support English vocabulary learning. Because most mobile-assisted vocabulary learning projects have just focused on SMS text-messaging, this present study investigated the effectiveness of different vocabulary learning tasks – dictionary-based, corpus-based, and video-based tasks with mobile phones – in an effort to learn a more effective and active way to help EFL students improve their vocabulary.

Major findings are as follows: First, participants in corpus and video groups significantly increased their vocabulary test scores from the pre-test to the post-test, demonstrating that the two types of vocabulary learning tasks – corpus- and video-based tasks – can improve EFL students' vocabulary knowledge. Meanwhile, the result of group comparison on the post-test score revealed no statistically significant differences, indicating that the three types of vocabulary learning tasks have no differential effects on EFL students' vocabulary learning. Lastly, findings of this study support that mobile-assisted vocabulary learning positively affects EFL students' interest and motivation in English language learning. Video-based vocabulary learning with mobile phones, in particular, appeared to provide the most interesting and motivating learning environments among three tasks.

Different types of approaches, techniques, and exercises have been introduced to the field of vocabulary teaching. Given that EFL students usually have limited opportunities to learn their target language in an authentic situation

with no bounds on time and place (N. Y. Kim, 2016), the present study sheds new light on mobile-assisted vocabulary learning in EFL fields, focusing on dictionary-based, corpus-based, and video-based vocabulary learning tasks. In addition, it is also notable that participants in the current study played an active role in vocabulary learning by utilizing their mobile phones to perform their tasks. Considering that most EFL students are reluctant and passive when engaging in English learning activities (Liu & Littlewood, 1997), it seems possible that these types of mobile-assisted vocabulary learning tasks can encourage the students to step into the active learning roles, and further, improve their vocabulary skills.

Furthermore, especially considering the fact that there have been few studies examining the effectiveness of videos in EFL vocabulary learning, (Yuksel & Tanriverdi, 2009), findings of this study prove that while EFL students engage in multiple forms of informal learning such as watching videos through mobile phones, they still learn vocabulary words, grammar, and conversational language. Particularly, with captioned videos combining visuals with texts, students in EFL contexts can improve vocabulary skills more effectively, as Akbulut (2007) pointed out. Given that EFL students heavily depend on visual cues to when learning a language (Cakir, 2006), the current study has great implications for video-based language learning with mobile phones.

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APPENDIX
A Survey on Vocabulary Learning

Class Section: () ID _____ Name _____

※ 다음은 여러분의 영어 어휘 학습에 대한 설문입니다. 솔직하고 성의있게 답해주세요.

	설문문항	전혀 그렇지 않다	약간 그렇지 않다	그렇지 않은 편이다	그런 편이다	약간 그렇다	매우 그렇다
1	나는 영어를 좋아한다.	①	②	③	④	⑤	⑥
2	나는 영어를 배우는 것이 즐겁다.	①	②	③	④	⑤	⑥
3	나는 영어 공부를 스스로 찾아서 하는 편이다.	①	②	③	④	⑤	⑥
4	나는 영어가 우리의 실생활에서 중요한 역할을 한다고 생각한다.	①	②	③	④	⑤	⑥
5	나는 영어 수업시간에 적극적으로 참여한다.	①	②	③	④	⑤	⑥
6	나는 영어를 더욱 잘하고 싶다.	①	②	③	④	⑤	⑥
7	나의 영어 실력에 자신이 있다.	①	②	③	④	⑤	⑥
8	나의 영어 실력이 높다고 생각한다.	①	②	③	④	⑤	⑥
9	나는 평소에 영어 어휘 학습에 관심이 많다.	①	②	③	④	⑤	⑥
10	나는 영어 어휘 학습이 재미있다.	①	②	③	④	⑤	⑥
11	나는 영어학습에 있어서 어휘 학습이 중요하다고 생각한다.	①	②	③	④	⑤	⑥
12	나는 영어를 공부할 때 어휘 학습에 많은 시간을 할애한다.	①	②	③	④	⑤	⑥
13	나의 영어 어휘 실력에 자신이 있다.	①	②	③	④	⑤	⑥
14	나의 영어 어휘 실력이 높다고 생각한다.	①	②	③	④	⑤	⑥
15	나는 영어 어휘 실력을 더 쌓고 싶다.	①	②	③	④	⑤	⑥