The development of the English vocabulary application on Android operating system for upper – primary students in five southern border provinces

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Abstract

The objectives of this research were to: 1) develop and find the efficiency of the English vocabulary application for the upper primary students in five southern border provinces on the Android operating system based on the 80/80 efficiency criterion; 2) compare students efficiency before and after using English vocabulary application, and 3) evaluate and follow up the usage of English vocabulary application by the stakeholders. 200 students of upper primary level were chosen by cluster random sampling as the sample group. The research instruments were an English vocabulary application, an achievement test, and an evaluation form of the stakeholders. The statistics for the data analysis were average and t-test. The results of the research were: 1) the efficiency of the English vocabulary application by finding E_1 and E_2 values was 80.42/83.50; 2) the t-test result indicated that students' achievement scores after using the English vocabulary application was statistically higher than that ofbefore using the English vocabulary application at .05 level of significance; and 3) the student efficiency index was 0.24. This represented that 24 percent of students' English vocabulary knowledge was increased through the English vocabulary application on the android operating system. Moreover, the students' satisfaction towards the English vocabulary application was 4.51 or 90.37 which was in the level of "very good".

Keywords: application, english vocabulary, southern border province

1. Introduction

Vocabulary learning is an essential part in foreign language learning because the meanings of new words are very often emphasized, whether in books or in classrooms. It is also central to language teaching and of paramount importance to language learners. Recent researches indicate that teaching vocabulary may be problematic because many teachers are not confident about best practice in vocabulary teaching and at times do not know where to begin to form an instructional emphasis on word learning [1].

Thai students' difficulty in understanding English is primarily caused by their lack of sufficient vocabulary. Therefore, we are faced with the problem of how to improve students' ability to memorize English words quickly and retain these words in their long-term memory (Nualsri, 2012). These are some urgent issues that need to be resolved in order to achieve the maximum teaching result. In other words, mastering the right methods and techniques in vocabulary learning are crucial for successful learning of the English language [2]. With the wide-spread usage of technologies in many different fields, emerging technologies have brought about major changes in the teaching and learning processes [3].

Mobile phones, one of these technologies, have led to a proliferation of studies that explore their use in education. Language teaching studies and practices have also been affected by this tide of change [4]. By providing flexible, practical, and personalized opportunities of use in and outside the classroom, mobile learning challenges the conventional ways of teaching remarkably [5]. Especially with smartphones that come with both powerful hardware and software, which makes them as capable as a computer, learning on the go becomes more and more convenient. However, the issue of the local culture integration and language teaching could not be separated because local culture and communication go along, and communi-

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cation is not possible without a language. Culture is an inseparable part of language learning, and learning language is essentially a social phenomenon. It has been defended that students cannot be proficient in the target language unless they know about cultural perspectives [6].

This article attempts to explain the application of ILAA model which is referred to the Interactive Learning Application Activity. It is the combination between the application in the smartphone or the tablet with the local culture in learning English vocabulary through the use of the application in the Android operating system. With the combination of technology and students' local cultures, ILAA model is playing an increasing important role in English vocabulary teaching in the southern border provinces. This study attempts to figure out the EFL teachers' cognition about the technology support and challenges the teachers to face with technology in their teaching practice. Therefore, the researchers formulate the following objectives:

1) To develop and find the efficiency of the English vocabulary application for the upper primary students in five southern border provinces on the Android operating system based on the 80/80 efficiency criterion.

2) To compare students' efficiency before and after using English vocabulary application.

3) To evaluate and follow up the usage of English vocabulary application by the stakeholders.

2. Literature review

Vocabulary knowledge is often viewed as a critical tool for second language learners because a limited vocabulary in a second language impedes successful communication. Nation (2011) concluded that knowledge of vocabulary enables language use and, conversely, language use leads to an increase in vocabulary knowledge. (Nation, 2011). Due to the challenging situation in teaching a new language, EFL teachers need to involve their students by using different methods and techniques in teaching and learning process. During this process, the teachers need to develop a positive motivation, encouragement, and attitudes in each student toward the learning process. One of the factors that helps teachers develop those aspects in students refers to technology. Technology is believed to affect students' attitude positively in learning process. It provides students the chance to be in touch with the real world and it can their motivation. In addition, using technology as an aid helps students to be active, eager, and involved in classes due to the interest in the use of technology. Undoubtedly, using computers and the different kinds of technological tools affect students' behavior in a positive way.

2.1 Integrating technology in vocabulary teaching

Vocabulary is an area where teachers are asking for guidance on instructional approaches, strategies, and materials. It is believed that digital tools and media are available in most schools that teachers could harness now to improve vocabulary learning. These tools can capture the interest of students, and provide scaffolds and contexts in which to learn with and about more profitably. Furthermore, they also promotes positive attitude toward learning, saving time for both teachers and students. Some of the main approaches in the technological integration in vocabulary teaching are described below.

2.1.1 Mobile learning (M-Learning)

In this technological era, everyone has their own handheld mobile devices. Using these devices, with easy access to the Internet, they interact with people from anywhere in the world. Irrespective of time and place, people chat or exchange information with each other. The very term "mobile" stands for the "mobility" or the ability to move freely and easily from one place to another. Mobile learning refers to the implementation of mobile devices in any branch of study. The features of mobile technology such as the portability and information accessibility play a major role in the enhancement of English language teaching and learning [7].

The main characteristic of M-Learning can be the discretion of the learner. It lies in the hands of the learner to decide upon the place and time for language learning [4]. The outbreak in the domain of mobile learning makes it harder for anyone to arrive at a stable concept because of the availability of new mobile devices in the market. Generally, mobile learning can be defined as mobility of personal, portable and wireless devices such as smartphones, or tablets used in language study.

The mobility of technology refers to mobile devices with WiFi capacities that deliver information and learning materials through the Internet. According to Guo (2013), with portable and personal mobile devices, learners could be engaged in more flexible, accessible, and personalized learning practices without constraint on places. Mobile learning increases the mobility of learners which is considered as a student-centered approach. Some researchers say M-learning refers to learning while moving around or using mobile or tablet devices to learn [8]. That is, no matter where students are, if they have mobile devices, they can study ubiquitously. Hence, we can understand that the classroom is no longer the only learning environment. Instead, the mobility makes students be part of the context and interact with their peers. So, for teachers they need to apply smartphones or tablet devices and design teaching strategies to help students. Finally, students' individual knowledge can be built, and they can not only develop the critical thinking ability, but enhance learning motivation and increase learning outcomes [8].

2.1.2   Mobile-assisted language learning (MALL)

Mobile-assisted language learning is the subdivision of both M-Learning and computer-assisted language learning (CALL). Beatty (2010) defines CALL as a term used for the collection of technologies aimed at enhancing creativity and collaboration, particularly through social networking. In recent years, the widespread use of mobile devices led to the abbreviation MALL which differs from CALL in its use of personal, portable devices that enable new ways of learning, emphasizing continuity or spontaneity of access across different contexts of use [4]. Few research studies have suggested that CALL has some limitations like lack of in-depth communication, false observation, disturbed learning process, the burden of work, educators' lack of computer knowledge [9]. [4] proposed that these shortcomings of CALL can be overcome by MALL.

The usage of mobile phones has undergone a drastic change beginning with downloading a ringtone to many software applications in a single phone. Though mobile learning is not new, latest mobile devices with upgraded features have triggered interest among many instructors for applying this new technology in learning. The iPhones, iPod, iPad, new handheld gadgets are fuelling to the mobile app fever [10]. Apps are the short form of the phrase "application software" generally downloaded from "app stores such as App Store, Google Play, Windows Phone Store, and BlackBerry App World". Mobile apps are a software application which is intended to run on iPhones, tablets and other mobile devices. Some of the apps are free to download and some others are paid. Mobile apps categories include gaming, entertainment, and education [9].

2.2   The characteristics of ILAA model

Interactive learning activity through the vocabulary learning application, or ILAA model was designed from the analysis of the vocabulary teaching framework. This vocabulary learning application or VLA consists of 3 steps in the learning activities which are introduction, integrated contextualization, and identification. Through the application of the VLA in their daily life, students can memorize the vocabulary and can skillfully apply it to gain the 21st century learning skill as shown in figure 1.

In order to develop the application through the Android operating system using ILAA model, the process of materials design from Graves (2000) was considered. Then, ten interested topics were explored by using the need survey instrument to elicit which topic should be included in the development of vocabulary learning application (VLA) for the southern border of Thailand. These ten units were as following.

After that, the aspect of Graves (2000) was used to design these ten units of the VLA for three southern border provinces of Thailand. There were four aspects of Graves (2000) needed to be considered for
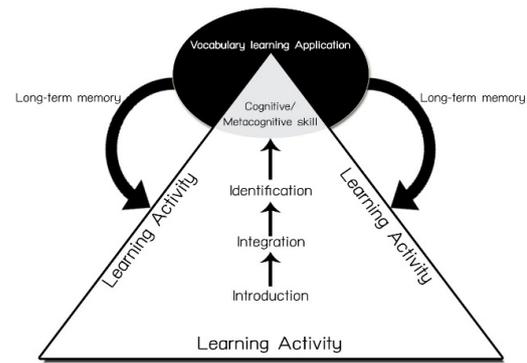

Figure 1: The concept of ILAA Model.

Figure 2: The sample of the application menu.

designing the VLA which consisted of learners, learning, language, and social context.

● *Learners*

Developing the application should meet students' experience and background, target needs, and their affective needs [11]. As a result of the need analysis, the topics included the local food, local games, and tourist attractions, etc. in the three southern border provinces because they were students' most preferable theme from the needs analysis and also relevant to students' experience and background.

Figure 3: The sample of the learners' aspect.

● *Learning*

Learning can be perceived as a process of problem-solving and discovery by the learners – an inductive process. In this study, students were able to think and solve problems by learning through the VLA using a variety of interactional tasks and activities.

Figure 4: The sample of the learning's aspect.

• *Language*

For the language aspect, it consists of creating activities which are relevant to grammar, functions, vocabulary, and integrated four skills using authentic text. In this study, the VLA integrated four skills of English and they were relevant aspects of grammar, function, and vocabulary in every unit. Moreover, the authentic texts having contents related to the three southern border provinces were used in every unit.

Figure 5: The sample of the language's aspect.

• *Social Context*

In this study their social context focused on the local community in the three southern border provinces of Thailand, including Narathiwat *et al.* Cultural awareness and social issues were included in the VLA.
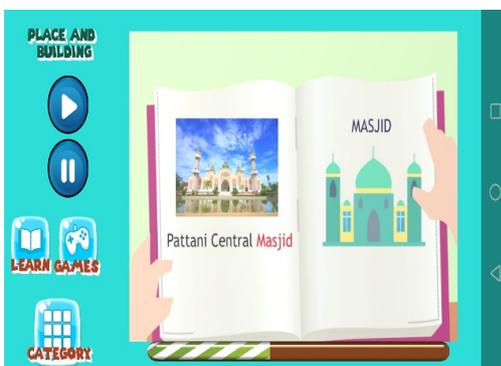

Figure 6: The sample of the social context's aspect.

3. Methodology

This study focuses on an exploratory investigation of the use of the Fun Fast English Application on Android operating system and the implementation of vocabulary instruction in five southern border provinces of Thailand classroom context. Therefore, mixed-methods research was employed in this study.

3.1 Data Collection Procedures

200 upper–primary students in five southern border provinces were selected as the subjects of this study using multi-stage sampling method. First, the researcher randomly selected two districts from each province. Second, two schools were selected from each district. Third, 20 upper–primary students per each school were selected as the sampling group since it is expected that students have held considerable cognitions about vocabulary instruction during the research process.

In addition, 20 teachers from the selected schools and 10 school administrators were interviewed by using the focus group technique. The interviewees were encouraged to express what they knew, thought, and believed concerning vocabulary instruction by using Fun Fast English application in their classrooms. This study employed semi-structured interviews, which were guided by a list of interview questions and designed to put interviewees at ease and allow them to express themselves about the application of Fun Fast English application in their classrooms.

4. Findings

The finding section attempts to answer the research objectives based on the obtained data from the achievement test, interview, and observation.

1) A. To develop and find the efficiency of the English vocabulary application for the upper-primary students in five southern border provinces on the Android operating system based on the 80/80 efficiency criterion

The above mentioned objectives revealed the result as shown below in Figure 7.

To answer objective one, the 200 students were asked to practice and do the exercises through the VLA. As shown in Figure 7, the results of experiment, the VLA had efficiency at 80.42/83.50 which met the specified criteria 80/80. It was because the VLA was tested in three steps: individual, small group, and field group to examine the efficiency of the VLA. From the efficiency of VLA in try-out results, the individual testing was not approach to the standard of 80/80, the researcher included some contents and exercises according to the samples feedback. Although the efficiency of VLA in the small group testing was improved, some exercises were edited again since the range between E_1 and E_2 were not close to and nearly

Figure 7: The efficiency of the English vocabulary application for the upper-primary students in five southern border provinces on the Android operating system based on the 80/80 efficiency criterion.

Table 1. The students' efficiency before and after using English vocabulary application

Test	Score	$\bar{x}$	(S.D)	(D)	t	Sig
Pretest	100	57.87	10.96	4.40	5.81	.00
Posttest	100	83.50	7.59			

reached the appointed standard. After the VLA was developed twice, the score of E1/E2 on the field study was better. It can be seen that the efficiency of the product (E$_2$ = 81.55) was higher than efficiency of the process (E$_1$ = 80.89). This was because the VLA had texts, pictures, sound effect, and games which motivated students' interest in learning English vocabulary.

2) To compare the students efficiency before and after using English vocabulary application.

To answer the question two, the data was collected from the students' pretest and posttest as shown in Table 1.

As seen in table 1, the students' score in the pre- and post-test was compared. It was found that the mean score of the post-test (83.50) was significantly higher than that of the pre-test (57.87) with statistical significance of .05 which means that the VLA helps the students to improve their English vocabulary skills.

3) To evaluate and follow-up the usage of English vocabulary application by the stakeholders.

To answer the third objective, the researcher divided the answer to this objective into two parts explained below.

3.1 The follow-up result through the efficiency index of students who studied with the VLA through Android operating system as shown in Table 2

As shown in Table 2, the efficiency index of students who studied with the VLA through Android operating system was 0.24 which revealed that the VLA can increase the students' vocabulary knowledge at the percentage of 24.

3.2 The evaluation of the VLA by the stakeholders and students To answer this part of the third research objective, the mean score of stakeholders and students' opinion toward the VLA was used to test with one sample t-test statistic, and was compared to the high level of the criterion setting at high level. The result of analysis was presented in Table 3.

The stakeholders and students' opinion toward the VLA after using it was significantly higher at .05 level of significance. Moreover, the total of thirty stakeholders, which were English teachers, school administrators, and supervisors in the areas, were interviewed in this study by using the focus group method. They were asked about how they feel about using VLA. All of the stakeholders and students had positive feelings to VLA at the percentage of 76.6. Eighty-five percent of them said that they liked VLA because it allowed them to practice and improve English vocabulary skill. It was easy to use and also interesting and enjoyable.

5. Discussion and conclustion

According to the findings, it can be concluded that VLA had positive effects on the improvement of students' vocabulary skills. Students were motivated, engaged, and interested in VLA. The result of this study was in line with Hermagustiana and Rusmawaty (2017) that teaching vocabulary is not only a matter of providing word meanings through several teaching strategies, paper-based dictionaries, or other vocabulary textbooks, but it also involves a number of technological devices which are expected to increase students' vocabulary knowledge [12]. In addition, Robins (2008) found that using technology in vocabulary teaching can capture the imagination of both students and teachers. At all levels of study and in most subjects, teachers can use technology in many ways to support students' learning by encouraging them to or-

Table 2. The result of the follow up result through the efficiency index

Scores	Test Results		Effectiveness Index
	Pretest	Posttest	Sum of Posttest Scores – Sum of Pretest Scores
			(No.of students X full scores) – Sum of Pretest Scores
Total	100	100	0.24
$\bar{x}$	57.87	83.50	

Table 3. The mean score of stakeholders and students' opinion toward the VLA with one sample t-test

The question items analysis	Criterion	Mean	S.D.	t	Sig
After using VLA	3.51	3.84	0.25	67.94	0.00

ganize and express their own ideas and knowledge in an individual and significant ways [13].

In conclusion, VLA was a suitable tool for the upper-primary students in five southern border provinces for increasing their vocabulary knowledge of English. Moreover, it was a means for increasing students' motivation to improve and practice their English vocabulary skill. In this research, encouraging students to learn was promoted by VLA through ILAA model. The VLA is considered as a vital tool in persuading students to participate in the various activities through the VLA on Android operating system. Since the integration of local context and technology through ILAA model makes activities interesting for students, it makes them believe that they will be able to improve their vocabulary skill through VLA.

Acknowledgements

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