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The Effect of Explicit Vocabulary Application (EVA) on Students' Achievement and Acceptance in Learning Explicit English Vocabulary

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Abstract – *Students' communication competency in English in Malaysia is a worrying trend as it is lagging behind several other countries in Asia. The purpose of this study was to investigate the effects of mobile learning application on students' achievement and acceptance in learning explicit English vocabulary in KPTM Bangi in order to improve their communication competency. A mobile phone application that was called Explicit Vocabulary Application (EVA) was developed for this purpose to be used by the experiment group students in learning the topic. The independent variable was the EVA application, while the dependent variables were the students' achievement in test and presentation, and the acceptance of the students after using the EVA. Their achievement was measured using pre-test, post-test scores, and presentation scores, while the acceptance was measured by using a questionnaire. A total of 36 students from two classes of semester one who enrolled in January 2016 were selected in this study. They were divided into two groups: control group and experiment group, which each group consisted of 18 students and the students that belong to the experiment group was required to have android smartphone in order for them to be able to use the application. The findings indicate: (1) no significant difference between the pre-test scores of the control group and the experiment group, (2) a significant difference between the pre-test and post-test scores after using the application, (3) a significant difference between presentation scores between the control group and the experiment group, (4) a significant positive impact on students who used the application. Overall the findings clearly indicate that the students that used the application have better achievement than those who did not in their test and presentation. Through this study, the EVA is proven to influence the students' learning and motivation.*

Keywords: acceptance, explicit vocabulary application (EVA), communication competency, control group, experiment group, mobile-assisted language learning (MALL), mobile learning, vocabulary acquisition

1.0 INTRODUCTION

The Malaysian Communications and Multimedia Commission (MCMC) reported in 2014 that 35.1% Malaysians of age 20 to 29 dominated the hand phone usage in Malaysia and the internet penetration reached 66% among Malaysian and it continues to grow until now. The increase of this technology usage has changed teaching and learning methodology especially in teaching and learning English as a second language. This new trend of teaching and learning in higher institutions is inevitable since mobile devices become high portability and personalisation among students which can "always on, always with you, and always connected" [1]. As English

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language is used tremendously by Malaysians in communication with the global community [2], it is important that learners should be introduced to methods that can enhance the effectiveness of the teaching and learning process of ESL in addition to the traditional teaching methods. Students in colleges especially in Kolej Poly-Tech MARA (KPTM) all over Malaysia are still having problems to communicate in English well and this result in poor communication skills among graduates.

The main problem is they are lacking in confidence due to lack of English vocabularies. Students of ESL must have a certain level of knowledge of vocabulary for successful communication to happen [3]. As mentioned by [4] that large percentage of unemployment among graduates are because they are lacking of English communication competency. In this study, the usage of the an Explicit Vocabulary Application (EVA) in android smart phones is the main activity in order to establish a relationship between the tool and the communication competency and vocabulary acquisition among the semester one students in KPTM Bangi. This application should be able to help students in learning and gain more explicit English vocabulary during their study in college and hoping that they can improve their vocabulary databases in order to perform better in their speaking and oral presentation. In this study, we employed quantitative method approach. Quantitative data was obtained through a close-ended survey, pre-test, post-test, observation and close-ended questionnaires. The quantitative information gained from the survey, pre-test, post-test, observation, and questionnaires was analysed by SPSS version 23 to produce descriptive and inferential statistics.

Several studies mentioned that multimedia creates a new stretched and flexible environment for teaching and learning English as a Second Language vocabulary in higher education [5]. Studies also found that the mobile learning application in learning English vocabulary stimulated the students' interests and enhanced the performance of students due to the effective and flexible learning process as reported by Chan [6]. Some studies in university in Black Sea region of Turkey reported that students liked the idea of learning English vocabulary using multimedia application on mobile phones as it always available all the time. As a result of that, they had better scores for the post-test compared to the pre-test taken before they used the mobile application in vocabulary learning as proven by Basoglu [7]. However, the tests conducted in the study were only covered the acquisition of vocabulary on formative test but there was no test done on speaking or communication competency. However, the study did not explicitly identify how many of the learners manage to communicate excellently and how long in term of time was spent on using the mobile device in learning. There was also no evidence showed the successful use of mobile technologies can improve the vocabulary acquisition and enhance the level of confidence in communication skills. In order to investigate this issue, the following research questions were posed:

- Is there any significant difference on the pre-test scores of control group and experiment group?
- Is there any significant difference between the pre-test and post-test scores of experiment group?
- Is there any significant improvement in terms of words pronunciation between the control group students and the experiment group students who use EVA during class presentation?
- Is there any significant improvement in communication competency among students who use EVA?
- How would the formal use of mobile application impact student's perception on language learning in the classroom?

Journal of Advanced Research in Social and Behavioural Sciences
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Vocabulary acquisitions and communicative competence are the most important construct in this study, as they form parts of the rationale for in-class peer communication and class presentation after using EVA application. As mentioned by [3] that students of ESL must have a certain level of knowledge of vocabulary for successful communication to happen.

2.0 RESEARCH METHODOLOGY

The objective of this study was to investigate the effect of the Explicit Vocabulary Application (EVA) towards vocabulary acquisition that should enhance their communication competency among semester one students in KPTM Bangi. The acceptance level of the application was also tested in this study to know their readiness in using any application in learning ESL vocabulary.

2.1 Design

The study employed a quantitative method approach which involved two groups of students: Control Group and Experiment Group. The methods used to gather data for this research was based on pre-test, post-test, class presentation and questionnaire.

2.2 Research Sample

A total of 36 students in semester one in KPTM Bangi aged from 19 to 22 years old were selected by their lecturer to involve with the experiment. Each group consisted of 18 students, regardless of their gender and English proficiency.

i. *Control Group*: the group was kept as constant and was taught by the lecturer who did not use the EVA and they were taught with traditional method.
ii. *Experiment Group*: the group was taught by the lecturer using the EVA and they can access the application anytime, anywhere.

2.3 Tool and Research Instrument

An android application that was known as EVA was developed by the researcher using Apps Inventor 2. The topic chosen was Cooking Vocabularies that were divided into three modules: Ingredients, Verbs and Tool. Students from both groups were given pre-test in the first week of lecture. During the second week of lecture, the control group was given the hardcopies of the cooking ingredients, verbs and tools vocabularies that are going to be used for the cooking project presentation. The list of vocabularies was presented by image, English words along with the Malay word. Meanwhile, the experiment group will be given the EVA that consists of text, audio, and visual components to explain and pronoun each of the vocabulary in the list. The students will be given one week to study the modules independently. During the study session in week three, the experimental group will be introduced with the main page of the apps that consist of two buttons, Menu button and Exit button (Fig. 1). After choosing the Menu button, the three modules buttons will appear (Fig. 2). Students can choose to go to any module they want to learn, like cooking ingredients (Fig. 3), cooking verbs (Fig. 4) and cooking tools (Fig. 5).

Penerbit Akademia Baru

Journal of Advanced Research in Social and Behavioural Sciences
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Figure 1: EVA Main Page

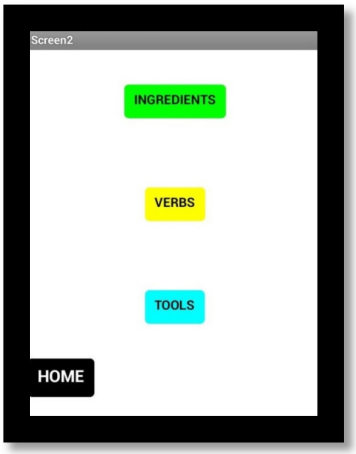

Figure 2: EVA Main Menu

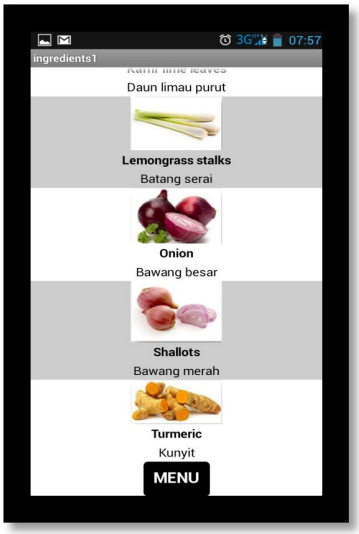

Figure 3: Cooking Ingredients Screen

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Journal of Advanced Research in Social and Behavioural Sciences
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Figure 4: Cooking Verbs Screen

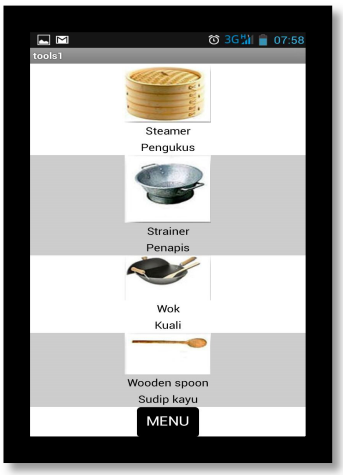

Figure 5: Cooking Tools Screen

The students from both groups took the vocabulary post-test after the learning process in week three. The scores of the test were analysed using the SPSS version 23. Moreover, for the presentation project, each group was divided into sub-groups that consist of three students. The Cooking Presentation Project of both groups was done in week five. Words pronunciation and communication competency were observed during the presentation in order to test the effectiveness of the application. The evaluation of the presentation was done using observation technique by English Lecturers with extended experience in teaching English to ESL students in KPTM Bangi.

Each group was given ten minutes to complete the presentation on how to cook their chosen meals using the expected amount of words. The students were given one week after the post-test to prepare the presentation. The observation focused on the vocabulary acquisitions, words pronunciation, and communication skill competency during presentation. The evaluation form for the presentation observation will use a five-point Likert scale with "1 = Extremely Bad", "2 = Bad", "3 = Moderate", "4 = Good" and "5 = Excellent" to measure the students achievement towards the important factors based on the objectives, research questions and hypothesis of this research. The scores were analysed using SPSS version 23. At the end, the experiment group students were given a questionnaire to anticipate their acceptance on the

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usage of the apps in their vocabulary learning. The questionnaire will use a five-point Likert scale with "1 = Strongly Disagree", "2 = Disagree", "3 = Neutral", "4 = Agree" and "5 = Strongly Agree" to measure the students acceptance towards the usage of EVA as learning tool.

2.4 Data Analysis

The scores of the pre-test and post-test for both groups were analysed using SPSS version 23 and presented as descriptive and inferential statistics. The differences of students' performance after using the EVA was displayed in mean score value and standard deviations. A paired t-test was applied to investigate whether there are significance differences in achievement in the post-test among the experiment group after using the EVA. For this purpose, an alpha value of 0.05 was used as the significance level. Meanwhile, the scores of the class presentation for both groups were presented by mean values. The same analysis was done with the students' acceptance questionnaire data. The analysed data was also used to answer all the research questions that posted in this study.

3.0 RESULTS AND DISCUSSION

In this study, the pre-test results displayed a clear similarity between the control group and the experiment group. The scores of the students from both groups are shown in Table 1. The mean scores were not much difference, i.e. 59.28 and 60.17. The standard deviation and variance showed that the scores were almost equally distributed in the two groups. This result showed that there was no big difference between mean scores of experimental group and control group on pre-test.

Table 1: Pre-test Scores for Control Group and Experiment Group

	N	Min	Max	Mean	Std. Deviation	Variance
Pre-Test CG	18	44	75	59.28	8.98237	80.683
Pre-Test EG	18	42	80	60.17	9.20518	84.735
Valid N (listwise)	18					

Students from both groups were given pre-test and post-test in this study in order to investigate their achievements. Students were given the post-test after a treatment week whereby students from control group used a hardcopy list of words and students from the experiment group used EVA as supporting tool to learn about the explicit vocabulary. The scores for both tests from experimental group are shown in Table 2. The students' pre-test and post-test of experimental group were compared to get differences. Based on Table 2, the mean of the pre-test score was 60.17 (SD: 9.20518), while the mean for the post-test was 95.72 (SD: 5.10830).

To examine the difference was significant, paired sample t-test was carried out. The result in Table 3 indicated a significant difference in the score between the pre-test and the post-test (t: 12.5; p: .000). In other words, the results indicated a big significant improvement on the students' achievement from the pre-test and pot-test after using the EVA. This result supported and complimented the previous analysis of the post-test scores of both groups that the experiment group students had improved their performance and knowledge after using the application in their vocabulary learning process.

Penerbit Akademia Baru

Journal of Advanced Research in Social and Behavioural Sciences
ISSN (online): 2462-1951 | Vol. 4, No. 1. Pages 99-109, 2016

Table 2: Pre-test and Post-test Scores of Experiment Group

	N	Min	Max	Mean	Std. Deviation	Variance
Pre-Test EG	18	42	80	60.17	9.20518	84.735
Post-Test EG	18	88	100	95.72	5.10830	26.095
Valid N (listwise)	18					

Table 3: Paired t-Test of Pre-test and Post-test for Experiment Group

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Post-test – Pre-test	35.6	12.1	2.8	41.6	29.5	12.5	17	.000

The result of the class presentation from Control Group and Experiment Group was analysed by SPSS version 23. The means and standard deviations are displayed in Table 4 for Control Group and Table 5 for Experiment Group. The students were evaluated by their English Lecturer during their class presentation on cooking topic. Each group was divided into three students and they had to present the cooking process their chosen menu. All of them have to use at least 80% of words from each module in order to get excellent in each item in the score sheet. The score sheet used a five-point Likert scale with 1 = "Extremely Bad", 2 = "Bad", 3 = "Moderate", 4 = "Good" and 5 = "Excellent". The presentation was observed using the four major criteria – sufficient amount of vocabulary, correct target vocabulary, correct words pronunciation, and confidence in using targeted vocabulary. Results in Table 4 showed that the criteria mean of control group students were between 2.61 to 3.11 only. This may have indicated that the students performed under satisfactory level especially the pronunciation and confidence criteria.

Table 4: Control Group Scores for Class Presentation (N = 18)

Criteria No.	Criteria	Mean	Standard Deviation
1	Use sufficient amount of vocabulary according to instruction	3.11	.32338
2	Use targeted vocabulary correctly in context	2.89	.58298
3	Pronounce targeted vocabulary accurately	2.67	.48507
4	Have confidence in using targeted vocabulary	2.61	.50163

On the other hand, results in Table 5 showed that the experiment group students performed very well during the class presentation. It supported by the means of every criterion in the evaluation whereby the means of each criterion were in the range of 4.17 to 4.39 which fell in "Good" category. The results showed that students had good achievement during the presentation after using the EVA. Moreover, the apps had also proved to be a good assistant in helping the students to improve their pronunciation and confidence during the cooking presentation.

Penerbit Akademia Baru

Journal of Advanced Research in Social and Behavioural Sciences
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Table 5: Experimental Group Scores for Class Presentation (N = 18)

Criteria No.	Criteria	Mean	Standard Deviation
1	Use sufficient amount of vocabulary according to instruction	4.17	.38348
2	Use targeted vocabulary correctly in context	4.17	.38348
3	Pronounce targeted vocabulary accurately	4.22	.54832
4	Have confidence in using targeted vocabulary	4.39	.50163

In order to understand the students' acceptance on integrating the use of EVA in their English class, students were asked to respond questionnaire which consisted of nine questions. From the responds, most of the students gave positive reactions to all nine questions. This indicated that the students' involvement with the EVA could improve their achievement. Results are presented in Table 6 indicated that most of the students agreed that the apps helped them in improving their vocabulary acquisitions, presentation confidence, words pronunciations and most important was they liked it because it could be accessed anytime and anywhere. Their improvement can be defined by the means of each question which are more than 4.00. Moreover, most of the students in this experiment group believed that they able to effectively incorporate the apps into their explicit English vocabulary learning that resulted good performance on post-test and presentation.

Table 6: Experiment Group Survey (N = 18)

Question No.	Question	Mean	Standard Deviation
1	I feel more confident in doing presentation after using the EVA.	4.11	.67640
2	I improve my vocabulary acquisitions after using the EVA.	4.17	.51450
3	I know now how to pronounce words correctly and confidently after using the EVA.	4.17	.61835
4	The apps assist me to prepare for my presentation.	4.11	.47140
5	The apps help me to communicate better in real life situation.	4.17	.61835
6	Compared to traditional method, I find that using the apps is more useful.	4.22	.80845
7	By using the apps, I feel more interested in learning new vocabularies.	4.39	.60768
8	I will use this technique in learning new vocabularies in the future.	4.06	.72536
9	I like using this kind of apps in learning English because I can access anytime through my smart phone.	4.39	.60768

The findings indicate that the usage of EVA in their explicit vocabulary learning process have helped the students to learn and understand better. Chang [8] and Lehman mentioned that the integration of multimedia elements in learning English vocabulary has transformed the teacher-centered teaching environment to student-centered teaching environment and motivates them to learn better by active engagement in the learning process. In this study, the used of EVA has

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significantly provided a more flexible self-study environment to the students which boost their confidence in using it because students can repeatedly using the apps according to their needs. As mentioned by [9] that repetitive encounters of words in language learning could develop strong reservoir of words which could establish good mansion of language proficiency. According to Chang [10], the students who possess high motivation and self-confidence are easier to master in second language acquisition. This is supported by a study by [11], which stated that a good teaching-learning process should be supported by technological equipment that will enhance students' interest in English learning and at the same time improve their level of confidence.

The EVA used in this study also helped the students to improve their pronunciation on each word they learned. The consequences of this were experiment group students performed better in their class presentation and post-test compared to the control group students. In addition, the apps had aroused the students' enthusiasm and attention to study on the topics given and it had also improved their attitudes and abilities to master and apply the knowledge in their real life. Therefore, the integration of multimedia elements such as image, sound, text, and freedom to access anytime at their own pace without limit, students are willing to spend more time and engage in the apps.

The finding of this study also indicated that the students were motivated to study the material and satisfied with the features provided and felt suitable to be used in their learning. This study also found that the students were satisfied with the use of EVA in their smart phones in learning explicit English vocabulary because they felt comfortable and easier to use. As emphasized by [12], a well-designed and properly structured on-line learning environment leads to the development of higher-order thinking skills and motivate the students to learn. This supported by [13] that students with properly guided technologically and methodologically in applying the mobile apps during the language learning could lead to positive attitudes towards the usability, effectiveness and satisfactions of the mobile apps as the language learning tool.

4.0 CONCLUSION

The EVA in smart phones offered an ideal environment for the students to improve their English vocabulary acquisition, therefore, enhanced their confidence in presentation and generate positive attitude as proven by [14] and [15]. Through the use of the apps, the students can repeatedly run through the pronunciation of the words without time restriction and embarrassment as supported by [16]. This was supported by [9] whereby learning words in repetition without place and time limitation in using apps could enhance students' vocabulary acquisition. From the finding in this study, the used of the EVA not only improved the students' vocabulary acquisitions, but also their pronunciation and confidence in learning explicit English vocabulary. In addition, the experiment group students also scored higher in the post-test and class presentation compared to the control group students who studied the same topic but using the traditional teacher-centered method which used hardcopy material as reference. With the perceived results the conclusion is very obvious that the state-of-the-art teaching methodology outdo the traditional classroom teaching. The impacts were found on the students' responds which satisfied with the learning environment and more students were found scoring higher grades in the post-test and class presentation. They accepted the new technique well which helped them improving their learning process especially in vocabulary learning. This was proven by [17] that 70% of students involved in their research improved their English pronunciation after using various tasks on apps applied in the study. The positive

Journal of Advanced Research in Social and Behavioural Sciences
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impacts of mobile technologies towards language learning hopefully can motivate the language teachers and MALL experts to undertake new studies to move the state-of-the-art further on.

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