การพัฒนาโปรแกรมคอมพิวเตอร์เพื่อยกระดับการเรียนคำศัพท์สำหรับนักเรียนระดับมัธยมศึกษาตอนต้น

The Development of a Computer Enhanced Vocabulary Learning Program for Junior High School Students

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บทคัดย่อ

งานวิจัยนี้มีจุดมุ่งหมายเพื่อพัฒนาโปรแกรมคอมพิวเตอร์เพื่อยกระดับการเรียนรู้คำศัพท์ (CEVLP) เพื่อยกระดับการเรียนรู้คำศัพท์ของนักเรียนชั้นมัธยมศึกษาปีที่ 3 จำนวน 30 คน ณ โรงเรียนบ้านเหล่าอ้อย กลุ่มตัวอย่างถูกแบ่งเป็น 2 กลุ่ม คือ นักเรียนกลุ่มควบคุมจำนวน 15 คนและนักเรียนกลุ่มตัวอย่างจำนวน 15 คน เครื่องมือวิจัยประกอบด้วย 1) โปรแกรมคอมพิวเตอร์เพื่อยกระดับการเรียนรู้คำศัพท์ (CEVLP) 2) แบบทดสอบ 3) แผนการสอน 4) แบบสอบถาม 5) การสัมภาษณ์ งานวิจัยมีวัตถุประสงค์ข้อแรกเพื่อเปรียบเทียบความสำเร็จในการเรียนรู้คำศัพท์ระหว่างนักเรียนกลุ่มตัวอย่างจำนวน 15 คน และนักเรียนกลุ่มควบคุมจำนวน 15 คน โดยนักเรียนกลุ่มตัวอย่างได้เรียนรู้คำศัพท์ผ่าน CEVLP ในขณะที่นักเรียนกลุ่มควบคุมเรียนรู้คำศัพท์ในห้องเรียนปกติ อย่างไรก็ตาม ในการให้ได้มาซึ่งผลการวิจัยที่สามารถนำมาเปรียบเทียบได้อย่างแท้จริงนั้น นักเรียนทั้งสองกลุ่มจึงได้รับมอบหมายให้ทำแบบทดสอบก่อนเรียนและหลังเรียน เพื่อเป็นการตรวจสอบการพัฒนาการเรียนรู้คำศัพท์ของนักเรียนดังกล่าว นอกจากนี้งานวิจัยมีเป้าหมายในการสำรวจความคิดเห็นของนักเรียนที่มีต่อการใช้งานโปรแกรม CEVLP ในการเรียนรู้คำศัพท์ เพื่อให้บรรลุจุดประสงค์นี้ นักเรียนกลุ่มตัวอย่างทำแบบสอบถามความคิดเห็นและได้รับการสัมภาษณ์แบบกึ่งโครงสร้าง จากนั้น จึงนำผลที่ได้จากการสัมภาษณ์และการทำแบบสอบถามของนักเรียนกลุ่มนี้ไปทำการวิเคราะห์ด้วยวิธี ANCOVA ผลการวิเคราะห์พบว่า นักเรียนกลุ่มตัวอย่าง หรือ นักเรียนที่เรียนรู้ผ่านโปรแกรม CEVLP มีผลการสอบที่ดีและมีผลทางสถิติที่สูงกว่านักเรียนกลุ่มควบคุมหรือนักเรียนที่เรียนรู้ในห้องเรียนธรรมดาด้วยคะแนนทางสถิติที่มีนัยสำคัญที่ 0.05 นอกจากนี้ ผลการวิจัยยังแสดงให้เห็นว่า นักเรียนที่เรียนผ่านโปรแกรม CEVLP มีความคิดเห็นเชิงบวกต่อการใช้งานโปรแกรม CEVLP เพื่อเรียนรู้คำศัพท์อีกด้วย

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Abstract

This research study aimed at developing a Computer Enhanced Vocabulary Learning Program (CEVLP) for enhancing vocabulary learning. The sample group consisted of 30 students in grade 9 at Ban Lao Aoi School. They were separated into 2 groups: 15 students in the control group and 15 students in the experimental group. The research instruments consisted of 1) CEVLP 2) tests 3) lesson plans 4) questionnaire, and 5) semi-structured interview. The first research purpose was a comparison of the experimental group students (n=15) and the control group students (n=15) in terms of vocabulary learning achievement. The experimental group learned vocabulary through CEVLP. In the meantime, the control group studied in a traditional classroom. To gain a comparably authentic result, however, both groups of students were asked to take a pre-test and a post-test in order to examine their vocabulary learning improvement. The second question was the exploration of the students' opinions toward using CEVLP in learning vocabulary. At this stage, opinion questionnaires and a semi-structured interview were administered among the experimental group students. Then, the statistical analysis of the data, ANCOVA, was applied. The findings of the study showed that the experimental group, or the ones who learned through CEVLP, performed better and higher in statistics in the post-test than the control group, or the ones who learned in the traditional classroom, with a statistically significant difference at the level of 0.05. Moreover, the result showed that the students who learned through CEVLP had positive opinions in employing CEVLP in learning vocabulary.

Keywords :   Vocabulary Learning, Computer Assisted language Learning (CALL), Computer Enhanced Vocabulary Learning Program (CEVLP)

Introduction

English is a widely used language around the world. Many countries employ it for communication; they use it as a second language or foreign language. In Thailand, Thai language is used as the official language while English plays the role of a foreign language. However, it can be said that English is quite essential for Thai people; it is required in many fields such as business, science, education, etc.

(Wiriyachitra, 2001). In addition, the English language plays an important role in Thailand's educational system, which began during the reign of King Rama III (Darasawang, 2007). At present, Thai students have to study English as a compulsory subject in school's' curriculums for many years. Nevertheless, it is still too difficult for the students to understand and use English correctly (Pawapatcharaudom, 2007). One of the main problems for students in

learning English might come from the lack of emphasis on vocabulary learning. Actually, vocabulary is the foundation of language learning. Read (2000, p.1) mentioned that "vocabulary is the heart of language learning". Moreover, Nation (1990, p.2) stated, "Learners feel that many of their difficulties in both receptive and productive language use results from inadequate vocabulary". Moreover, the lack of attention to vocabulary is one of the problems in English language learning (Hedge, 2000). Therefore, vocabulary learning should be the first priority in language learning and teaching.

Since vocabulary is a vital hurdle for language learning in learning English, numerous explicit teaching techniques of vocabulary have been created and employed to solve the students' problems such as learning a single meaning of target words, deriving word meaning from context, guessing the meaning, using a dictionary, studying in context, as well as repeating and studying from keywords (Tassana-ngam, 2004). Each technique probably helps the students learn vocabulary effectively. Especially, studying vocabulary in contexts or reading is the technique that can increase students' vocabulary knowledge because each context contains the target words and unknown words (Webb, 2008). The students might learn both of them together. Thus, it can be said that learning vocabulary in contexts should be a useful way for students to increase new vocabulary. To be a successful student in learning a language, they can study vocabulary through English reading passage. Using authentic texts to study vocabulary may be one of the beneficial activities. The teachers should prepare interesting lessons and reading materials for the students. To facilitate their work, the teachers could use technology to accommodate and support the instruction.

At present, Computer Assisted Language Learning (CALL) plays an important role in many English classrooms. CALL is employed to facilitate both teachers and students in language learning and teaching processes. It is used to make interesting and exciting lessons for the students, especially for those who lack motivation to learn (Pagnucci, 1998). It can stimulate and enhance students' vocabulary. It can provide benefits not only for students but also for teachers, thus, CALL programs could be very useful in language learning and could become valuable equipment for language teaching and learning (Higgins, 1993).

The present research study was conducted in a Thai secondary government school, named Ban Lao Aoi School. This is a small school and it is located in the rural area in Sakaew province. There are around 500 students in this school, and they learn English as a required subject of the syllabus. Nevertheless, language learning and teaching in this school has not been quite successful. English learning problems in the classrooms at this school observed by the researcher were especially vocabulary learning. The problems consisted of using Thai language in English classes, using ineffective teaching methods, lacking of prior knowledge of the students, and employing unsuitable teaching materials. The researcher attempted to find ways to help the students. Therefore, this research project aimed at enhancing vocabulary teaching and learning at

Ban Lao Aoi School. The students were asked to learn vocabulary through a Computer Enhancing Vocabulary Learning Program (CEVLP). CEVLP developed for grade 9 students contained several different reading passages. Thus, the students could learn vocabulary via the passages which introduced a lot of new vocabulary to the students, and hopefully, it could solve the students' vocabulary problems by employing technology enhanced language learning to achieve the goal.

Objectives of the Study

The current study was conducted for the following purposes:

1) To compare the control group students and the experimental group students in terms of vocabulary achievement. The experimental group learned vocabulary via a Computer Enhanced Vocabulary Learning Program (CEVLP) whereas the control group learned in a traditional classroom.

2) To explore students' opinions towards using CEVLP in learning vocabulary.

Research Methodology

Research Participants

The subjects participating in this study were 30 students from grade 9 at Ban Lao Aoi School in Sakaew province. They were chosen by using cluster random sampling. This study was conducted in the first semester of Academic Year of 2013. The students were asked to take the old National Standardized Test (O-NET). The scores of the O-NET test were used to separate students into two groups: the control group and the experimental group. There were 15 students in each group. The students in each group were mixed in term of abilities ranging from low ability to high ability. The students studied English in the same class except when they studied vocabulary; they were separated into a different learning environment.

Research Procedure

After the O-NET test was given, the control group was given a paper pre-test, whereas the experimental group was given a pre-test via CEVLP. The experimental group students were trained to use the program for two hours before the experiment to make sure that they understood the program well. After doing the pre-test, the students of the experimental group studied the lessons through CEVLP. The control group students, on the other hand, were taught by the researcher in a classroom setting by using the same lesson plan and running the lessons with pictures, flashcards, and worksheets. After 5 weeks, the control group was given the post-test while the experimental group was given the post-test and questionnaire about CEVLP. Later, the experimental group was interviewed by the researcher using semi-structured interview questions.

Research Instruments

There were five research instruments in this study: Computer Enhanced Vocabulary Learning Program (CEVLP), tests, lesson plans, questionnaire, and semi-structured interview.

1. Computer Enhanced Vocabulary Learning Program (CEVLP)

The CEVLP was created by the researcher to aid vocabulary learning. The

researcher studied English vocabulary in the curriculum for grade 9 students. The Authorware 7.0 program was used to build the program for this study. CEVLP consisted of 1) the learning objectives, 2) a page for registration and login, 3) pre-test, 4) five vocabulary lessons, 5) exercises, and 6) post-test. The lessons on CEVLP were designed based on interesting reading topics. Each lesson contained a reading passage and five different types of exercises: matching pictures and words, matching words and meanings, fill-in-the-blank, spelling, and letter-sequences. It was piloted with 20 students before it was actually implemented in the research project. The result of the pilot study showed that CEVLP was quite effective for vocabulary learning.

2. Tests

A pre-test and post-test were used for measuring students' English achievement before and after the experiment. Both tests were not the same test but they were created in the same level of difficulty. The tests were tested for validity and reliability with the pilot group before they were used in the research experiment.

3. Lesson Plans

The lessons of vocabulary learning for the control group students were the same as those for the experimental group which were presented on the CEVLP, but they were delivered to the students in the traditional way using pictures, flashcards, and worksheets.

4. Questionnaire

The questionnaire about learning through CEVLP consisted of three parts: students' background information, students' experiences in employing the computer, and opinions toward the program. The questions in the questionnaire were adopted from the questionnaire in a CALL research study of Prarubrugsa (1997). There were 10 items in the questionnaire; they comprised 5 positive questions and 5 negative questions. All questions were used to elicit the participants' opinions whether they had good or bad opinions on CEVLP. However, the questionnaire items were originally written in English, so they were translated into Thai in order to avoid misunderstanding and confusion.

5. Semi-Structured Interview

The researcher constructed the semi-structured interview to acquire more in depth information about the students' opinions toward CEVLP lessons. All 15 students in the experimental group were interviewed. The interview consisted of 7 questions. Each question was paraphrased from the questionnaire in order to get a deep thought of the students. Each student was interviewed for 10 minutes. During the interview, the researcher recorded the students' answers with noted the information on the interview report.

Data Analysis

In order to achieve the purposes of the study, the data collected for the study was analyzed in both quantitative and qualitative ways. Firstly, quantitative data was collected from the pre-test, post-test, and questionnaire. The scores from pre-test and post-test were analyzed by ANCOVA analysis which was used to remove the external variability derived from pre-existence of individual differences such as students' English background knowledge or English proficiency levels. Then, the computer software program called SPSS was employed

to analyze the data and to measure the students' English proficiency before and after being taught by CEVLP and by the researcher. The data from pre-test and post-test was calculated for the arithmetic means ($\bar{X}$). In addition, the 5-rating scale was used to analyze the data from the questionnaire. After that, it was calculated into the arithmetic means. These means showed the students' opinions toward learning via CEVLP. On the other hand, qualitative data was collected from the interviews by recording. The recorded data was then transcribed and interpreted to determine the students' opinions and reactions toward learning through CEVLP.

Results and Discussion

Vocabulary Achievement of Students in the Control Group and the Experimental Group

According to the design of the current study, the experimental group students were asked to take a pre-test; then they learned vocabulary through 5 provided lessons on CE-VLP for 5 weeks by spending 3 days per week and 2 hours per days. Consequently, they studied 30 hours in total. After they completed all exercises in the program, they were asked to take a post-test. The scores between the pre-test and post-test were then compared. The result showed that their post-test scores were higher than their pre-test scores. Simultaneously, the control group students also took a pre-test, but then they learned vocabulary in the traditional classroom for 5 weeks in the same number of hours. After they completed all lessons and exercises, they took the same post-test as the experimental group students did. The post-test scores between two groups were then compared. The result showed that the post-test scores of the control group were lower than those of the experimental group.

For a more obvious result, the post-test scores of the two groups were analyzed by employing ANCOVA. The result showed that the scores of the experimental group were significantly higher than those of the control group as shown in Table 1.

Table 1　The Results of ANCOVA for the Pre-Test and Post-Test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	89.080(a)	2	44.540	18.562	.000
Intercept	361.853	1	361.853	150.803	.000
PRETEST	12.280	1	12.280	5.118	.032
GROUP	66.882	1	66.882	27.873	.000
Error	64.787	27	2.400		
Total	5172.000	30			
Corrected Total	153.867	29			

a R Squared = .579 (Adjusted R Squared = .548)

From Table 1, the results of the analysis were interpreted into Table 2.

Table 2   The Interpretation of Results of ANCOVA Analysis

Source of Variable	Sum of Squares	df	MS	F	Sig.
PRE-TEST	12.280	1	12.280	5.118	0.032
Between groups	66.882	1	66.882	27.873	0.000
Experimental group	64.787	27	2.400		
Total	153.867	29			

Table 2 shows that there was a significant effect of the covariate (pre-test) on the dependent variable (post-test), $p<.005$. It was found that the scores of the experimental group were significantly higher than those of the control group (F = 27.873, Sig = 0.000). There was a significant difference in the post-test of the two groups. The numbers of significance between groups shown in Table 2 was less than 0.05. According to the result, it could indicate that the post-test scores of the experimental group were significantly higher than those of the control group after the treatment. Therefore, it could be concluded that the participants who learned through CEVLP improved their vocabulary learning more than those in the control group. By employing CEVLP, the students could remember more vocabulary because they could choose suitable lessons and exercises by themselves. This can be supported by the Constructivism theory because this theory emphasizes that students should be allowed to try to learn and understand things in their own ways (Adam, 2006). Furthermore, this result follows in the same direction as Naraghizadeh and Barimani (2013). They investigated the effectiveness of CALL on vocabulary learning of Iranian EFL learners. They found that CALL instruction could improve learners' knowledge of vocabulary since the learners who learned via CALL outperformed the learners in the traditional classroom. To the present study, likely, the students who learned through CEVLP also improved their vocabulary learning more than those students in the traditional classroom as well.

Students' Opinions toward Using CEVLP in Vocabulary Learning

In order to assess the students' opinions in using CEVLP, a questionnaire and a semi-structured interview were employed for collecting the data. The following table shows the results of the students' opinions.

Table 3　The Results of Students' Opinions in Employing CEVLP

Items	$\overline{X}$	S.D.
1. CEVLP can increase your vocabulary skill.	4.60	.632
2. CEVLP is very useful for your learning.	4.87	.352
3. CEVLP makes learning language enjoyable.	4.47	.516
4. You want to learn with a program like CEVLP again.	4.07	.458
5. CEVLP gives you useful experiences.	4.73	.458
6. CEVLP cannot motivate and makes learning English more boring	1.47	.640
7. CEVLP is not useful for your learning.	1.27	.458
8. Learning with CEVLP takes too much time.	1.60	.507
9. CEVLP cannot increase your language learning at all.	1.20	.458
10. The content of CEVLP makes the lessons uninteresting.	1.20	.414

Table 3 shows that the students had good opinions in employing CEVLP. It confirmed that the students thought CEVLP could increase their vocabulary skill ($\overline{X}$ = 4.60). They stated that CEVLP was very useful for their learning ($\overline{X}$ = 4.87). They thought that CEVLP could make learning language enjoyable ($\overline{X}$ = 4.47). They also mentioned that they wanted to learn by using a program like CEVLP again and they thought that CEVLP gave them a useful learning experience ($\overline{X}$ = 4.07 and $\overline{X}$ = 4.73). Moreover, the students disagreed that CEVLP could not motivate their learning ($\overline{X}$ = 1.47). Also, they did not think that CEVLP was not useful in their learning ($\overline{X}$ = 1.27).

From the results above, it was clear that the students had positive opinions toward CEVLP. It could be noticed that they felt good toward CEVLP usage. They thought that the content in the CEVLP was interesting to learn, and the program was useful for their learning. The result of the semi-structured interview also supported the result of the questionnaire since the students were satisfied with learning through CEVLP and they had positive opinions toward CEVLP. Most of the students stated that CEVLP was interesting and convenient to use. They were satisfied with CEVLP because the program could improve and enhance their vocabulary skills. Even though a few students were confused when using the program and learned slowly, the majority of the students had no problems in using CEVLP.

To summarize, it could assume that CEVLP was an effective instructional tool for vocabulary learning because it could motivate students to learn and make them feel more interested in the lessons. It also provided more interesting content and ways of learning for the students through its interactive features. Therefore, CEVLP should be an alternative tool to help language learners to be more successful in learning vocabulary.

Recommendation

It could be said that CEVLP can help the students learn vocabulary successfully. The students in the experimental group performed better than those in the control group in their post-test scores. The result goes along the same line with that of Bualuang, Sinprajakphol, and Chanphrom (2012) whose study showed the good result of learning through a CALL program. The experimental group also had a positive opinion in learning through CEVLP. Therefore, it can be concluded that CEVLP is a useful tool for teachers because it allows the learners to select the lessons in the way they want. This could be supported by the Constructivism theory because this theory states that the learners should not be controlled but should be provided with the opportunity to learn and understand things in their own ways in order to be successful in their learning. However, in order to better the research study for the future, the researcher should examine the use of computer program for language learning in different ways. For example, learning in a group might be compared with learning individually. Moreover, the researcher should focus on the students' retention after learning vocabulary through CALL. The time interval between learning and testing should be separated. For example, the test might be provided for the students after they complete their lessons in 2 weeks. This method can check that the students are able to retain vocabulary or not after a period of time.

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