การสร้างโปรแกรมการเรียนรู้คำศัพท์โดยยึดหลักตามหัวข้อคำศัพท์ สำหรับนักเรียนระดับมัธยมศึกษาปีที่ 1
A Design of Theme-Based Vocabulary Learning Program for Mathayomsuksa 1 Stuents

อภิสรา มณีกานนท์*

Aphitsara Maneeganont

จงรักษ์ เลี้ยงพานิชย์**

Chongrak Liangpanit

บทคัดย่อ

วัตถุประสงค์ของงานวิจัยนี้เพื่อสร้างโปรแกรมการเรียนรู้คำศัพท์โดยยึดหลักตามหัวข้อคำศัพท์สำหรับนักเรียนมัธยมศึกษาปีที่ 1 เพื่อหาประสิทธิภาพของโปรแกรมการเรียนรู้คำศัพท์โดยยึดหลักตามหัวข้อคำศัพท์ และเพื่อศึกษาทัศนคติของนักเรียนที่มีต่อโปรแกรมการเรียนรู้คำศัพท์กลุ่มตัวอย่างที่ใช้ในงานวิจัยนี้คือนักเรียนระดับชั้นมัธยมศึกษาปีที่ 1 โรงเรียนมัธยมบ้านพรานเหมือน จังหวัดอุดรธานี จำนวน 14 คน เครื่องมือที่ใช้ในการวิจัยประกอบด้วย แบบทดสอบก่อนเรียน แบบทดสอบหลังเรียน แบบสอบถาม และแบบสัมภาษณ์ ผลของการศึกษาวิจัยพบว่าโปรแกรมการเรียนรู้คำศัพท์โดยยึดหลักตามหัวข้อคำศัพท์มีค่าประสิทธิภาพ 80/89 มีประสิทธิผล 0.73 ซึ่งสูงกว่าเกณฑ์มาตรฐานที่ตั้งไว้ และผลคะแนนการทดสอบหลังเรียน มีค่าสูงกว่าผลคะแนนทดสอบก่อนเรียนอย่างมีนัยสำคัญทางสถิติที่ระดับ .001 ผลการวิจัยยังพบอีกว่าหัวข้อคำศัพท์ช่วยให้ผู้เรียนสามารถจำคำศัพท์และเข้าใจความหมายของคำศัพท์ได้ง่ายและดีขึ้นหัวข้อคำศัพท์ยังช่วยให้คำศัพท์มีความน่าสนใจมากขึ้นและทั้งยังกระตุ้นให้ผู้เรียนมีความกระตือรือร้นในการเรียนคำศัพท์ นอกจากนี้การเรียนผ่านคอมพิวเตอร์ช่วยให้ผู้เรียนมีความกระตือรือร้นในการเรียนคำศัพท์นอกเหนือจากการเรียนจากหนังสือเพียงอย่างเดียว และยังพบว่าผู้เรียนมีทัศนคติที่ดีต่อโปรแกรมการเรียนรู้คำศัพท์นี้ซึ่งได้ช่วยเสริมสร้างการเรียนรู้คำศัพท์ด้วยตนเองอีกด้วย

คำสำคัญ : หัวข้อคำศัพท์/ การเรียนรู้คำศัพท์/ การเรียนการสอนผ่านเว็บ

Abstract

The purposes of the study were to 1) design a theme-based vocabulary learning program (TVLP) for Mathayomsuksa 1 students; 2) determine its effectiveness and 3) study the students' attitudes towards the program. The participants in this study were comprised of fourteen

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* นักศึกษาปริญญาศิลปศาสตรมหาบัณฑิต สาขาวิชาภาษาอังกฤษ ภาควิชามนุษยศาสตร์และสังคมศาสตร์ มหาวิทยาลัยขอนแก่น

** อาจารย์ที่ปรึกษา ดร. ภาควิชามนุษยศาสตร์และสังคมศาสตร์ มหาวิทยาลัยขอนแก่น

Mathayomsuksa 1 students from Ban Pranmuan Secondary School in Udonthani Province and the research instruments included a pre and post vocabulary test, a questionnaire and an interview. The results of the study revealed that the effectiveness and efficiency of the constructed TVLP were 80/89 and 0.73 respectively, which were higher than the standard criteria. The pre and post-test scores were significantly different at the level .001. The results additionally showed that the theme-based instruction helped the students recognize the words and understand their meaning more easily. The results also demonstrated that learning through the web helped motivate the students in learning vocabulary instead of learning by only using the textbook. Furthermore, the participants had positive attitudes towards learning the TVLP which is able to assist their autonomous learning.

Keywords: Theme-based/ Vocabulary learning/ Web-based instruction

Introduction

At present, English is widely used worldwide as a major language to communicate (Kachruland and Nelson, 2006). English is used not only in the business and political community but also as the working language of international organizations. Moreover, English is used at conferences, in the international banking sector and for economic affairs and trade, such as advertising for global brands, in audio-visual products. In addition, tourism, international law, technology transfers and internet communication and education all use English as a primary language (Foley, 2005). Vocabulary, therefore, has become increasingly identified as vital to language use and the lack of a good vocabulary may lead to difficulties in language reception and production (Wei, 2007). According to research, scholars Hayes (1991); Kinzer and Leu (1995) have claimed that a strong knowledge of vocabulary is necessary for helping students

to understand the text and the vocabulary that is contained within. Akbari (2008) stated that communication breaks down when people do not use the right words. In fact, the main problem that most EFL students have is a limited vocabulary, especially in reading (Gunning, 2002). The inability to recognize words or not know their meaning may decrease reading comprehension skills (Nation, 2001). According to the preliminary study conducted via a survey of Mathayomsuksa 1 students on September, 2011, five teachers and thirty Mathayomsuksa 1 students from Ban Pranmuan Secondary School, Udonthani were asked to complete questionnaire in order to compile a list of problems they had when teaching and learning English. The findings of the survey showed that the main problem students' faced when learning English resulted from a lack of essential vocabulary. The study revealed that students did not know their proper level of vocabulary.

It also illustrated that students could not remember the words and did not know the meaning of the words. According to the survey, it is very crucial for teachers and students to pay more attention to vocabulary learning, especially Mathayomsuksa 1 students who are at the beginning of secondary school level. Therefore, students should have vocabulary knowledge at the appropriate level in addition to having good English skills.

One way to help students improve their vocabulary learning is to apply a vocabulary learning approach and construct an effective program (Ma and Kelly, 2006). A theme based approach is one method for learning new vocabulary (Cameron, 2001). The primary purpose of this approach is to help students recognize the words and understand the words better and more easily (Vilaca, 2009; Decarrico, 2001; Cameron, 2001). Web-Based Instruction (WBI) plays an important role in language learning in the classroom (Wheeler, 2002). Numerous studies have shown that computerized media and a multimedia environment can be helpful for learning foreign language vocabulary (Al-Seghayer, 2001; Groot, 2000; Hulstijn, 2000; Laufer & Hill, 2000; Brett, 1998; Duquette, Renie, & Laurier, 1998; Plass, Chun, Mayer, & Leutner, 1998; Davis & Lyman-Hager, 1997; Chun & Plass, 1996; Siribodhi, 1995; Lyman-Hager, Davis, Burnett, & Chennault, 1993).

Using computers for vocabulary learning provides a very effective way of applying many of the principles of good vocabulary learning, particularly with regards to repetitions and opportunities to retrieval (Nation, 2001). Computer technology is able to meet the needs of the learners, stimulate a good learning environment organize principles of teaching and learning vocabulary in context and via sequencing, Even more, computers are able to have an interesting format and presentation, monitor assessment and evaluation, and to promote autonomous learning(Nation, 2001). Therefore, one way to help Thai secondary students to improve their vocabulary learning is through the computerized program constructed as TVLP. To date, no such program has been particularly designed to aid the Mathayomsuksa 1 student learners to meet the demands of learners in the Thai context.

From the aforementioned research one can conclude that a theme based approach and web- based instruction are better ways to help students improve their vocabulary learning. This study was conducted in order to discover the effectiveness of a theme-based learning approach and web-based instruction in improving Mathayomsuksa 1 students' vocabulary learning.

Purposes of the Study

     1. To design a theme-based vocabulary learning program for Mathayomsuksa 1 students.

     2. To determine the effectiveness of a theme-based vocabulary learning program.

     3. To study the students' attitudes towards a theme-based vocabulary learning program.

Research Methodology

     1. Participants of the Study

     The participants included 14 Mathayomsuksa 1 students who were studying English E21101 at Ban Pranmuan Secondary School during the second semester of the academic year 2011. The students who had low English language proficiency were selected by using the purposive sampling method. Mathayomsuksa 1 students were chosen to be participants in this study because they were studying English at the beginning secondary school level. Thus, it would be advantageous for them to learn English vocabulary at this level.

     2. Research Procedure

     The vocabulary included in the TVLP was chosen from the wordlist that appeared in the English course book for Mathayomsuksa 1 students (The Ministry of education, 2008). The wordlist contained 749 words. Five English teachers at Ban Pranmuan Secondary School were asked to check the essential words from the wordlist at the Mathayomsuksa 1 level that their students should know, from 288 words were identified and checked by the teachers.

Then, fourteen Mathayomsuksa 1 students were also asked to check these wordlists in order to identify difficult words that they did not know. The findings showed that there were 391 unknown words. The overlapping words from both the teachers' list and the students' list were grouped into themes based on the Basic English Curriculum of the Ministry of Education 2008. There were approximately 40 overlapping words found from these two lists. Five themes were identified and presented in the TVLP as follows: food and beverage, places, school subjects and weather.

     The TVLP was available online through the following website: www.huso.kku.ac.th/sac/mysite/index.html. The TVLP consisted of 5 units containing 40 words to be studied. Each unit consisted of 8 words (Gains and Redman, 2007) that were presented in three activities and four vocabulary exercises. Each unit of the TVLP was intended to be studied for one week study. The students spent about one hour per unit studying the TVLP. There were a total of 5 hours spent studying 40 words during the semester. Before the students participated in the program, a pilot study of the TVLP was administered, which was then enhanced and tried out for its effectiveness with Mathayomsuksa 1 students who had never studied the TVLP before.

     3. Research Instruments

     The research instruments used in the present study were the pre- and post- vocabulary tests, the questionnaires, and the semi-structured interviews.

Table 1 Research Instruments and Research Questions

Instruments	Research Question
1. The pre vocabulary tests	RQ1
2. The post vocabulary tests	
3. Questionnaire 1	RQ1, 2
4. Questionnaire 2	
5. Semi-structured interview	RQ2

3.1 The pre- and post-vocabulary test

The vocabulary test was constructed from the 4 tests of 40 overlapping words including matching words, word association, word collocation, and gap filling that students had learned in the TVLP. The purpose of constructing the pre vocabulary test is to establish a baseline, and that of the post vocabulary test is to measure whether or not students have made progress in their vocabulary learning or not after learning the target words through the program.

The tests were used as pre- and post-test in order to evaluate the students' vocabulary learning. The test is claimed to analyze the ability to recognize the target words and understand their meanings (Beeckmans, Eyckmans, Janssens, Dufranne, & Van de Valde, 2007). The test consisted of the target words and pseudo words. It was constructed by giving 30 Mathayomsuksa 1 students the 40 words which were unknown by most participants. A pilot study was conducted with 30 Mathayomsuksa

1 students who were not the sample in this study at Ban Pranmuan Secondary School. They were asked to participate as volunteers in this study. When a test was administered, each participant was asked to complete the test. Participants were not allowed to use any dictionaries. The participants spent one hour taking the tests.

The reliability of the test was checked, using the Method of Coefficient Alpha of Cronbach. The reliability coefficient value calculated of the tests was 0.966 and the reliability coefficient value calculated from the post-test was 0.923. The reliability of the translation tests in the pilot work ranged from 0.955 to 0.968, which was higher, as shown in Table 2 These results show that the tests all have high reliability.

Table 2 Alpha Coefficients (α) for the Tests

Translation tests	Numbers of Participants	α
Pre-test	30	0.966
Post-test	30	0.923

3.2 Questionnaire

Two questionnaires used in this study. The first questionnaire was designed to find the effectiveness of the Theme- based Vocabulary Learning Program by, asking what students think about the TVLP. The data was generated to answer research question 1. The second questionnaire was designed to find the attitudes of the Mathayomsuksa 1 students on their vocabulary improvement after learning the target words through the Theme –based Vocabulary Learning Program. The data was generated to answer research question 2. The questionnaire consisted of three main parts. The first part asked about students' general information. The second part aimed at eliciting students' attitudes about their vocabulary learning development via the TVLP. To measure the students' attitudes, the Likert's scale was used. Likert's scale has five categories and each scale consists of a statement and the two parts: a declarative statement and a list of categorical responses, ranging from "strongly agree" to "strongly disagree". All scale categories were labeled. The questionnaires in the second and third parts contained 20 items. The Five -point rating scales used for the students' opinions are as follows:

5	=	Strongly Agree
4	=	Agree
3	=	Neutral
2	=	Disagree
1	=	Strongly Disagree

The reliability of both the first questionnaire and second questionnaire was checked, using the method of Coefficient Alpha of Cronbach. The reliability coefficient values calculated were 0.96 and 0.92 respectively.

3.3 The semi-structured interview

The purpose of the semi-structured interview was to find out the effectiveness of the Theme-based Vocabulary Learning Program by questioning the students' attitudes in depth on their vocabulary development after learning with the TVLP. The data was generated to answer research questions 2.

4. Data Collection

For the present study, there were four main stages of data collection. The first stage of data collection started in the second semester of the academic year 2011. In addition to the selection of words identified by the word list of a Mathayomsuksa 1 English course book,

and then the survey of students and teachers' vocabulary lists were also administered in order to find the overlapping words in the two groups. Next, the five English teachers were then asked to tick the overlapping words that they thought the M.1 students should know. Similarly, M.1 students were asked to tick the words that they thought they didn't know. The 288 words to be learned were chosen by 10 experienced M.1 English teachers and the 391 words to be learned were selected by the 14 participants mentioned earlier. Afterwards, the overlapping words obtained from both the teachers and students were compiled into one vocabulary list. The words were compared with the words in the word list of a Mathayomsuksa 1 English course. There were 40 words in common. These words were then grouped into theme based on the M.1 students' English course.

At the second stage of the study, the construction of the TVLP was conducted during the second semester of the academic year 2011. To teach the selected 40 vocabulary words, the Theme-based Vocabulary Learning Program was then designed based on a theoretical framework derived from vocabulary learning and teaching theories, and the implication of CALL (Computer Assisted Language Learning). The program first underwent three trials with M.1 students, Next, the program, was adjusted, and then was validated to ensure its quality. The final version of the TVLP was learned by the 14 participants in 6 weeks. The vocabulary pre-test and post-tests were then administered.

At the third stage, the participants, including the14 M.1students, took the pre-test during the first week of class in order to master their vocabulary learning before starting to learn with the TVLP. The participants spent one hour and thirty minutes taking the pre test and post tests. The dates and times for learning with the TVLP were scheduled and recorded. The participants spent about one hour per week learning each lesson of the TVLP in class. They were assigned to learn all 5 lessons, taking about ten hours. Before studying, they had read a student s' manual as a reference to use throughout their learning. Next, they typed their name and codes in to the computer in order to log in. Then, they were given the objectives of the TVLP. At the fourth stage, the questionnaires and interview sessions were administered. After they finished their learning with the TVLP, they took the post-test and answered questionnaires. Afterwards, semi-structured interviews, asking the participants about their vocabulary development while learning with the TVLP, were conducted in order to obtain more in depth and specific information.

The results of the pretest and posttest were used to study the vocabulary development of students. The results of the questionnaire were used to study students' attitudes on vocabulary development learning with the TVLP.

5. Data Analysis

The data was analyzed by calculating the mean ($\overline{X}$) and, standard deviation (S.D.), and by conducting, t-test and content analysis. The scores of pre-test and post-test of the samples were compared by using t-test. Content analysis was used to examine the data obtained from the interviews. The statistics used for analyzing the effectiveness of the TVLP included E1/E2 (the effectiveness) and E.I. (the effectiveness index).

Results

1. Research Question 1: What is the effectiveness of the theme-based vocabulary learning program for Mathayomsuksa 1 students?

The purpose of this research question was to determine the effectiveness of the designed TVLP and whether it helped to develop and improve Mathayomsuksa 1 students' vocabulary learning. Before the participants of the study used the TVLP, a pilot of the TVLP was administered via two sessions.

Table 3 The Effectiveness index of the TVLP

Test types	Number of students	E1 (Efficiency of Process)	E2 (Efficiency of Production)	Effectiveness index (0.5)
1. One to One Testing	3	68.13	71.67	0.51
2. Small Group Testing	6	76.15	79.58	0.64
3. Field Group Testing	14	80.93	89.11	0.73

Table 3 reports the effectiveness index of one to one testing at 0.51, the small group testing at 0.64, and the field group testing at 0.73. Thus, it can be concluded that after testing, the TVLP was effective. Consequently, it may also be interpreted that the TVLP could help students in vocabulary learning.

1.2 Pre- and Post- Vocabulary Test

The pre- and post- vocabulary tests were conducted in order to find out if the TVLP helped Mathayomsuksa 1 students learn vocabulary.

Table 4 The Statistical difference value of the pre-test and post-test

| | Paired Differences | | | | | t | df | Sig. (2-tailed) |
| | Mean | S.D. | Std. Error Mean | 95% Confidence Interval of the Difference | | | | |
				Lower	Upper			
Pair 1 pre-post	-10.92857	7.01059	1.87366	-14.97636	-6.88078	-5.833	13	.001

The data indicates that the scores of the pre-test and the post-test were significantly different at the .001 level. Therefore, one is able to interpret that the TVLP may help the participants improve their vocabulary learning.

1.3 The Results of the Interview

The interview was carried out with fourteen participants and its purpose was to ask the participants if the TVLP could improve their vocabulary learning. Each participant took about 10 minutes in the interview session. The findings revealed that most of the interviewees agreed that the TVLP could help them improve their vocabulary learning. Some examples of reports on participants' opinions are presented below:

"I improved my vocabulary after I used this program and I learned more vocabulary that I didn't previously know. The words became more interesting in themes and I can use the vocabulary in my daily life." (Participant A, January 15, 2012)

"I improved my vocabulary after I learned this program and I got a chance to learn English from a computer instead of learning from a book. I learned new words from the program and the themes helped me recognize the words and know their correct meaning." (Participants C, January 15, 2012)

It can be concluded that the TVLP is able to help Mathayomsuksa 1 students to improve their vocabulary learning as the students learned and recognized new words, developed their reading and pronunciation and knew how to use the words correctly and appropriately in their contexts. This conformed to the vocabulary learning goals stated by Nation (2001) which were to recognize words, understanding their meanings and use the words appropriately. Moreover, these findings are consistent with the previous research (Nikolova, 2002; Yun et

al, 2008; Meekaew, 2003; Worarut, 2008) that computer programs had a great effect on vocabulary learning.

2. Research Question 2: What are the students' attitudes toward the theme-based vocabulary learning program for Mathayomsuksa 1 students?

The results of the participants' attitudes toward the TVLP are presented in Table 5 below:

Table 5 The participants' attitudes towards the TVLP

Items	$\overline{X}$	S.D.	Interpretation
1. I like learning through the TVLP.	4.21	0.69	High
2. I enjoy learning vocabulary through the TVLP because it is fun and interesting.	4.00	0.96	High
3. I like the pictures and the animations in the TVLP.	3.93	0.62	High
4. I enjoy the sounds of the pronunciation in the TVLP.	4.07	1.07	High
5. I like the font size and color in the TVLP.	3.86	0.53	High
6. I enjoy doing activities and exercises of each unit.	4.35	0.63	High
7. I enjoy using the TVLP.	4.42	0.51	High
8. I feel fun and never feel bored while learning the TVLP.	4.42	0.75	High
9. I like when I receive the immediate feedback	4.57	0.64	Very High
10. I enjoy learning vocabulary by themes.	4.50	0.85	Very High

There were four items with a "Very High" and "High" rated level of the participants' attitudes toward the TVLP. These results can be interpreted as the participants having a positive attitude towards the TVLP. The item the participants liked the best was receiving immediate feedback with the mean score ($\overline{X}$) of 4.57. The second most-liked item was that the participants enjoying learning vocabulary by themes with the mean score ($\overline{X}$) of 4.50.

Next, the participants enjoyed using the TVLP with the mean score ($\overline{X}$) of 4.42. Finally, the participants had fun and never felt bored while learning the TVLP with the mean score ($\overline{X}$) of 4.42. It could Accordingly, it can be concluded that the TVLP helped the participants to learn vocabulary better. On the whole, they were satisfied with the TVLP.

2.1 The results of the interview

Most of the interviewees thought that the TVLP was very useful, fun and interesting in learning vocabulary. This shows that the participants' positive attitudes towards the TVLP. Some examples of participants' reports are presented below.

"I was really excited when my score was calculated and the program told me to keep on trying which made me want to learn more and more. I enjoyed learning with the program a lot." (Participant B, January 15, 2012)

"I like learning with this program because it's fun and interesting with animations and sounds. Learning vocabulary through TVLP is very new for me. It is better than learning vocabulary in the textbook." (Participant C, January 15, 2012)

Recommendation for further studies

The following recommendations might be useful for further research. The recommendations will be made to design of the TVLP based on the results of the pilot study and the suggestions made by learners.

Further studies should be undertaken to construct Web-Based Instruction on other English skills such as listening, reading, writing, speaking, pronunciation and grammar etc. Although the TVLP was designed for Mathayomsuksa 1 students, additional studies can be used with other larger groups of Secondary School level students. Moreover, further research on learning vocabulary should be collected from other kinds of materials such as newspapers, magazines, articles or other printed sources. The themes or topics should be enlarged and more frequently administered more in the next study in order to measure the depth of vocabulary learning in terms of recognizing the words, understanding the meaning of the words and use the words appropriately in other level of students.

Conclusion

This study was designed for a specific group of participants for pre-test and post-test purposes, Its aim was to determine the effectiveness of a theme-based vocabulary learning program for Mathayomsuksa 1 students and to study their attitudes towards the program afterwards. The research questions were: What is the effectiveness of a theme-based vocabulary learning program for Mathayomsuksa 1 students and what are the students' attitudes towards the program. Fourteen Mathayomsuksa 1 students, who were studying English 21101 in the second semester of the academic year of 2011 at Ban Pranmuan Secondary School, participated in the study. The students were selected by purposive sampling and those with a low English language proficiency based on their English grades from the academic year of 2010 were chosen.

The research instruments used in the study included a pre-post vocabulary test, theme-based vocabulary learning program (TVLP), questionnaires, and interviews. The TVLP was available online through the following website: www.huso.kku.ac.th/sac/mysite/index.html.

There were 5 units in the program, each classified with 5 themes. Each unit contained exercises such as matching words, word association, word collocation and gap filling. A vocabulary test was conducted both before and after studying with the program and a questionnaire was used to find out the students' attitudes towards the TVLP. An interview session with 14 students was administered in order to obtain more information about the students' attitudes towards the TVLP. A comparison of the two lists from the teachers and participants yielded approximately 40 overlapping words to be placed in the TVLP which were grouped under specific themes.

The TVLP was with a pilot study in order to find out its effectiveness and the effectiveness index. The fourteen participants learned via the TVLP for a period of 6 weeks and spent about 60 minutes in learning each unit. After finishing learning through the TVLP, the participants were required to answer a questionnaire and complete an interview. The results of this study revealed that the effectiveness and the effectiveness index figures of the TVLP were 80.93/89.11 and 0.73 respectively, which was higher than the standard criteria set and therefore indicate that the TVLP had a high effectiveness. After learning through the TVLP the participants obtained higher scores than before studying the TVLP and there were statistical differences between the pre-test and post-test scores at a level of .001. The findings also indicated that when vocabulary was grouped into themes, participants understood the meaning more easily, and the themes made vocabulary learning more interesting. The TVLP promoted autonomous learning as well.

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