Using English Vocabulary Supplementary Materials to Enhance Vocabulary Learning Proficiency of Technical and Business Students in Higher Education

Anuyahong[4], Bundit
College of General Education and Languages
Thai-Nichi Institute of Technology

Abstract

The purposes of this research were 1) to construct and test efficiency of EFL supplementary materials to enhance vocabulary techniques of undergraduate students, 2) to compare the students' English vocabulary learning achievement before and after using EFL supplementary vocabulary materials constructed, 3) to compare undergraduate students' English vocabulary learning achievement on pre-learning and post-learning according to students' genders, 4) to compare undergraduate students' English vocabulary learning achievement on pre-learning and post-learning according to students' majors and 5) to survey the students' satisfaction towards the EFL supplementary vocabulary materials in 8 units.

The subject consisted of 60 undergraduate students of Thai-Nichi Institute of Technology during second semester of 2011 academic year. The instruments used for this experiment were 8 units of the EFL supplementary vocabulary lessons, the English vocabulary learning achievement test, and a questionnaire was used for surveying the subjects' satisfaction on the efficiency of the constructed materials.

The results of the study were 1) the efficiency of the materials was 80.14 for the English vocabulary learning formative tests and 82.94 for the posttest. Therefore, the EFL supplementary vocabulary materials constructed were highly effective, 2) the students' English vocabulary learning achievement after using the eight EFL supplementary vocabulary lessons was significantly higher than that before using the eight EFL supplementary vocabulary lessons constructed at 0.05 level, 3) there were no significant differences between male and female students on pretest and on posttest proficiency, 4) students with different majors showed statistically significant differences at .05 level on posttest but no significant differences on pretest, and 5) students' satisfaction towards the eight English reading lessons was highly positive

Keywords: English Vocabulary Supplementary Materials**,** English Vocabulary Learning Proficiency

1. Introduction

Recently, Instructional curriculum of foreign language is based on National Education Act of B.E.2542 section 22 as it stipulated that Education shall be based on the principle that all learners are

---

[4] College of General Educa　on and Languages, Thai-Nichi Ins　tute of Technology

capable of learning and self-development, and are regarded as being most important. The teaching-learning process shall aim at enabling the learners to develop themselves at their own pace and to the best of their potentiality (Ministry of Education 1999: 14).

One important objective of studies into language learning strategies is often to determine effective ways of learning a new language (O'Malley and Chamot, 1990). The field of vocabulary learning strategies is no exception as the effectiveness of strategies for learning new words has been under scrutiny for several decades now (Brown and Perry, 1991; Ellis and Beaton, 1993, and Fan, 2003).

Learning a second language involves the manipulation of four main skills; speaking, writing, listening and reading, which lead to effective communication. One crucial factor is the amount of vocabulary one possesses as vocabulary forms the biggest part of the meaning of any language (McCarthy, 1988). Vocabulary, however, is the biggest problem for most learners. In view of this, vocabulary acquisition is currently receiving attention in second language pedagogy and research. But it is still a contentious issue how learners acquire vocabulary effectively and efficiently or how it can best be taught.

Moreover, vocabulary is central to language and is of great significance to language learners. Words are the building blocks of a language since they label objects, actions, ideas without which people cannot convey the intended meaning. The prominent role of vocabulary knowledge in second or foreign language learning has been recently recognized by theorists and researchers in the field. Accordingly, numerous types of approaches, techniques, exercises and practice have been introduced into the field to teach vocabulary (Hatch & Brown, 1995).

Vocabulary learning strategies are one part of language learning strategies which in turn are part of general learning strategies (Nation, 2001). Language learning strategies encourage greater overall self-direction for learners. Self-directed learners are independent learners who are capable of assuming responsibility for their own learning and gradually gaining confidence, involvement and proficiency (Oxford, 1990). It has been suggested that one way to accelerate the learning of a second or a foreign language is to teach learners how to learn more efficiently and effectively. To this end, teachers are recommended to train their students in different learning strategies. Learning strategies instruction can help "EFL learners become better learners. In addition, skill in using learning strategies assists students in becoming independent, confident learners (Chamot, 2001: 31).

Thai-Nichi Institute of Technology has been operated under the philosophy of "disseminating knowledge and building economic base". One of the TNI objectives is to generate human resources who have abilities in technological advancement and industrial management. Moreover, TNI concept of program administration is to focus on the students' language skills- the students will be able to communicate in Japanese and English. In order to achieve in the TNI objectives, TNI has provided English courses for students from all faculties to enrol (TNI Student Handbook: 2011: 24).

Teaching-learning English language of TNI students has problem in vocabulary learning and they also lack of motivation in learning because instructional contents are not interesting. Thus, instructional management must depend on learner's interesting and ability that make motivation in learning of the learners.

In conclusion, the researcher created EFL supplementary vocabulary materials which passed checking from experts for study improvement in vocabulary learning of TNI students in

second semester, 2011 academic year and the results derived from research will be guideline in improvement and development instruction and instructional materials next occasions.

2. Objectives

1) To construct and test efficiency of EFL supplementary materials to enhance vocabulary techniques of undergraduate students

2) To compare the students' English vocabulary learning achievement before and after using EFL supplementary vocabulary materials constructed

3) To compare undergraduate students' English vocabulary learning achievement on pre-learning and post-learning according to students' genders

4) To compare undergraduate students' English vocabulary learning achievement on pre-learning and post-learning according to students' majors and

5) To survey the students' satisfaction towards the EFL supplementary vocabulary materials in 8 units.

3. Research Design

The data was gathered and analyzed as follows.

3.1 Populations and samples

The populations in this study were first year undergraduate students at Thai-Nichi Institute of Technology, Bangkok, in second semester of 2011 academic year. There were 1,250 students from 3 faculties which are Faculty of Business Administration, Faculty of Information Technology, and Faculty of Engineering.

The samples in this study consisted of 60 undergraduate TNI students, and were derived from a simple random sampling technique.

3.2 Contents Used in Experiment

The topics consisted of *Prefixes, Suffixes, Definitions, Compound words, Synonyms, restatements, Comparisons, and roots* which were chosen based on a survey of students' needs questionnaire.

3.3 Duration in experiment

The experiment ran for 8 weeks (2 hour per week)

3.4 Variables

Variables in this study were as follows:

1. The English vocabulary learning ability of undergraduate students before and after the class.

2. The satisfaction of first year TNI students with EFL supplementary vocabulary learning materials.

3.5 Research Instruments

1. Eight lessons of EFL supplementary vocabulary learning materials.

2. A 1-hour English vocabulary learning proficiency test (30 items: 30 scores).

3. A questionnaire constructed by the researcher assessing satisfaction with EFL supplementary vocabulary learning materials.

3.6 Construction and Development of Research Instruments

The researcher constructed the EFL supplementary vocabulary learning materials and the proficiency tests in the following way:

First, the researcher studied the objectives of EFL supplementary vocabulary learning materials, and focused on English vocabulary learning skills and strategies.

Second, the researcher derived eight topics from the survey of needs questionnaire and interviewed the participants regarding topics required for first year undergraduate students. The topics were as follows:

Rank	Topic	Mean	S.D	Meaning
1	Prefixes	4.55	0.55	Very high needs
2	Suffixes	4.52	0.69	Very high needs
3	Definitions	4.51	0.60	Very high needs
4	Compound words	4.48	0.82	High needs
5	Synonyms	4.35	0.71	High needs
6	restatements	4.32	0.84	High needs
7	Comparisons	4.29	0.70	High needs
8	roots	4.21	0.73	High needs

Third, these eight topics were modified to suit first year undergraduate students by giving the students vocabulary guidelines and meanings, simplifying structures of language, finding pictures, and applying the contents to English vocabulary learning materials. Then, the table of contents specification was designed by determining the objectives, contents, topics, vocabulary learning skills, vocabulary learning activities, and evaluation.

Last, the constructed table was examined for IOC by experts and lesson plans were written for all 8 lessons. Each lesson plan was composed of learning objectives, topics and contents, and vocabulary learning activities consisting of presentation, practice, and production stages.

Presentation stage included presenting pictures and answering the questions in order to lead the students to lessons and matching vocabulary with pictures.

Practice stage was categorized into 5 groups: True/False; Yes/No Question; Information gap; Matching; and Sequencing events.

Production stage was divided into several types: semantic maps, information tables, and concept mapping.

The lesson test consisted of a multiple choice test, sequencing events, information gap, and question answering.

Proficiency test

Students were given pre- and post-class proficiency tests. The tests had the same format and consisted of 30 items (30 scores). The duration of each test was 60 minutes. The researcher used the textbook, journal articles and related research as an outline to create the test. The researcher also, created a table of specifications including vocabulary learning strategies and goals for each lesson, and then created one set of proficiency tests following this table of test specifications. The researcher derived the difficulty and discrimination of the tests (P-R value) from standard criteria consisting of 30 items. Five experts examined, corrected and improved the accuracy, validity and reliability of the language and contents of the test. The test had a difficulty

level between 0.20-0.80 and a rank of discrimination at 0.20 or over. The calculation of the test reliability was used K-R 20 by Kuder-Richardson (Cited Boonriang Khajonsil 2000: 165). Then, the proficiency test was used to sampling of the research.

The Satisfaction Questionnaire

The researcher created a questionnaire to investigate student satisfaction with this type of the EFL supplementary vocabulary learning materials. The questionnaire was constructed using both closed-end and opened-end questions based on Best (1981: 168-183). The answer to each question was separated into five rating scales as demonstrated by Likert. The rating scales in the questionnaire were
 5 refers to strongly agree
 4 refers to agree
 3 refers to moderate
 2 refers to disagree
 1 refers to strongly disagree

There were four components of satisfaction which were content, instructional design, teaching-learning activities and evaluation. The data from the experts was applied with the following formula:

$$IOC = \frac{\Sigma R}{N}$$

IOC replaces Index of item-Objective Congruence
R replaces Experts' opinions
N replaces Number of experts

Questions rated less than 0.5 by the experts were considered and improved. The data obtained from a small group experiment was analyzed to find reliability by using α-Coefficient formula stated by Cronbach (1974: 161). Coefficient of reliability was 0.81.

Data Collection

The process of try out
There were three phases of the data collection process on EFL supplementary vocabulary learning materials for undergraduate students at Thai-Nichi Institute of Technology, Bangkok.

Phase 1
To apply with one TNI student who was not included in sample in second semester, 2011 academic year. The student had to study EFL supplementary vocabulary learning materials and did the 30 multiple choice test items after that. In this phase, the researcher enabled to investigate behavior, listen to the student's point of view as well as question about the problems during tryout both 8 units and the ability test.

The result found that the student who involved in tryout process of EFL supplementary vocabulary learning materials for undergraduate students, Thai-Nichi Institute of Technology, Bangkok got 64 scores out of 80 from 8 lesson tests which was equal to 80.00%. For the posttest, the student got 25 scores out of 30 which equal to 83.33%. Hence, the effectiveness of EFL supplementary vocabulary learning materials for undergraduate students was equivalent to 80.00/83.33. The highest scores were from lesson 3 *Definitions* (90%). On the other hand, the lowest scores were from lesson 7 *Comparisons* (70 %).

Phase 2

To apply with a small group of 9 students, the students had to study EFL supplementary vocabulary learning materials and did the 30 multiple choice test items after that. In this phase, the researcher recorded the problems and suggestions in order to improve lessons to be more effective. The students had to do ability posttest which was the same set of ability pretest. The scores derived from each lesson and scores from ability posttest were calculated as 79.16/79.62. It was found that these nine students were able to get 570 scores out of 720 (79.16 %) from lesson tests. For the posttest, the students got 215 scores out of 270 which equal to 79.62%. Hence, the effectiveness of EFL supplementary vocabulary learning materials for undergraduate students was equivalent to 79.16/79.62. The highest scores were from lesson 3 *Definitions* (85%). On the other hand, the lowest scores were from lesson 5 *Synonyms* (75 %).

Phase 3

To apply with sampling of 60 students, the students had to study the EFL supplementary vocabulary learning materials and did the 30 multiple choice test items after that. In this phase, the students had to do ability posttest which was the same set of ability pretest. The time duration was 60 minutes. The researcher, then, analyzed the scores to find out the lesson effectiveness. The scores derived from each lesson and scores from ability posttest were calculated as **80.14/82.94.** It was found that these 60 students were able to get 3,847 scores out of 4,800 (80.14 %) from lesson tests. For the posttest, the students got 1,493 scores out of 1,800 which equal to 82.94%. Hence, the effectiveness of the EFL supplementary vocabulary learning materials for undergraduate students was equivalent to **80.14/82.94**. The highest scores were from lesson 2 *Suffixes* (88.00%). On the other hand, the lowest scores were from lesson 6 *restatements* (77 %).

Statistic Used in Data Analysis

1. The lesson effectiveness was determined by using E1/E2 formula followed 80/80 criteria.
2. The comparison between the pretest and posttest was done using t-test, which was calculated by SPSS/PC for Windows XP.
3. The F-test was used to measure the students' English reading achievement on pre-reading and post-reading according to students' majors.
4. The data from the questionnaire were rated to find the mean and standard deviation and then translated based on criteria developed by Best (1981) as follows:

$1.00 \leq \bar{x} < 1.50$ indicates the lowest satisfaction

$1.50 \leq \bar{x} < 2.50$ indicates low satisfaction

$2.50 \leq \bar{x} < 3.50$ indicates moderate satisfaction

$3.50 \leq \bar{x} < 4.50$ indicates high satisfaction

$4.50 \leq \bar{x} \leq 5.00$ indicates the highest satisfaction

4. Results

Results of the data analysis

Phase 1: Tests were given to all 60 students after each of the eight units. The statistics used in the data analysis consisted of mean ($\bar{x}$), standard deviation (S.D), percentage and rank order of scores in each unit. The lesson tests got a mean score over 75% for each unit. The highest scores came from lesson 2 *Suffixes* (88.00%), the lowest from lesson 6 *restatements* (77 %).

Phase 2: The comparison of the before and after tests for the 60 students were as follows:

Test	Number of students	Total score	($\bar{x}$)	S.D	$\overline{(D)}$	t	Sig
Pretest	60	30	8.93	3.72			
					13.82	47.295*	0.000
Posttest	60	30	22.75	5.62			

Statistical significance at 0.05 level

The post-test scores were higher than the pretest scores by 0.05 (Sig = 0.000 < 0.05). The mean score of the posttest was 22.75, higher than the pretest (8.93 out of 30). The difference between the pre-test and post-test scores was 13.82, and for the t-test it was 47.295. Results indicated that students reading ability was improved by the course, affirming hypothesis 2.

Phase 3: The comparison of the before and after test according to gender; male and female.

Test	Gender	n	Mean	S.D	t	Sig
pretest	male	33	8.92	3.55	-.171	0.824
	female	27	8.95	3.89		
posttest	male	33	21.87	5.49	0.257	0.107
	female	27	23.63	5.75		

Statistical significance at 0.05 level

There were no significant differences between male and female students on pretest and posttest proficiency, affirming hypothesis 3.

Phrase 4: The comparison of the before and after test according to majors

Test	groups	SS	df	MS	F	sig
pretest	Between groups	26.235	3	7.362	1.954	.183
	Within groups	531.870	57	4.310		
	Total	372.192	60			
posttest	Between groups	642.444	3	332.621	40.122	.000*
	Within groups	350.400	57			
	Total	883.733	60	7.931		

Statistical significance at 0.05 level

The students with different majors showed statistically significant differences on posttest at .05 level but not significant differences on pretest, affirming hypothesis 4.

Phase 5: The results of the student satisfaction questionnaire were as follows:
The mean scores of all eight units was 4.69 (S.D. =0.59). The highest mean score was on unit 1 ($\bar{x}$ = 4.74, S.D. =0.62). The second highest mean score was on unit 4 ($\bar{x}$ = 4.69, S.D. =0.59). The lowest mean score was on unit 7 ($\bar{x}$ = 4.43, S.D. =0.97). The overall mean score of eight units was 4.69 (S.D.= 0.59). The results indicate high student satisfaction with the EFL supplementary vocabulary learning materials, affirming hypothesis 5.

5. Discussion

The results of the study indicate:

    1. The efficiency of the EFL supplementary vocabulary learning materials was higher than the determined criteria. This may be on account of following:

1.1 The undergraduate students were taught to analyze critically, and students learnt how to acquire vocabulary on their own, noting that it is "not possible for students to learn all the vocabulary they need in the classroom" Sokmen (1997: 225). Moreover, EFL supplementary vocabulary learning materials helped learners develop their own vocabulary learning strategies as "a powerful approach", which can be based on sensitization to the systems of vocabulary, encouragement of sound dictionary skills and reflection on effective learning techniques. In view of the importance of these strategies, it is useful to find out what vocabulary learning strategies are and examine how they help to build up one's vocabulary, and what strategies the textbooks should introduce to learners Cunningsworth (1995: 38).

1.2 The teaching-learning activity in each unit was constructed according to an English vocabulary learning theory developed by Brown and Payne (1994). They identified five steps in the process of learning vocabulary in a foreign language: (a) having sources for encountering new words, (b) getting a clear image, either visual or auditory or both, of the forms of the new words, (c) learning the meaning of the words, (d) making a strong memory connection between the forms and the meanings of the words, and (e) using the words. Furthermore, researcher started learners with easy activities, progressing to more difficult activities for presentation, and asking question in practice stage to check the students' understanding. In the production stage, the researcher created semantic maps and information charts to help the learners fill in information in the correct way. Consequently, the learners used vocabulary learning strategies to assist in learning comprehension (Schmitt, 2000; Oxford and Scarcella, 1994)

1.3 The course was designed in accordance with experts' views on objective learning, presentation, practice, and production stage. The learners were able to use a vocabulary learning strategy because comprehending textual discourse structures is an important aspect of vocabulary learning abilities (Schmitt, 2007; Coady, 1997).

    2. The students' vocabulary learning ability improved at the 0.05 level. This may be accounted for by the learners' satisfaction with, and interest in the required vocabulary learning strategies. Vocabulary learning strategies helped learners acquire the strategies necessary to learn words on their own (Schmitt, 2000). Moreover, Oxford and Scarcella (1994) advocated that the provision of systematic vocabulary instruction to let learner master specific strategies to acquire words even outside their classes.

    3. Survey results indicated students were highly satisfied with the course. This seemed to be because they understood and applied vocabulary learning strategies. Results also confirmed statements of the educational theorists, O'Malley & Chamot (1990), who reported that skilled learners tend to keep the meaning of the words in mind, guess the meaning of words, and read with confidence. Moreover, positive thinking created more proficient learners to use a greater variety and often a greater number of vocabulary learning strategies (Wesche & Paribakht, 1996);Oxford &Scarcella, 1994).

6. Conclusion

According to the study and data analysis, the results of this study were as follows.

1. The efficiency of the EFL supplementary vocabulary learning materials for undergraduate students in this experiment was **80.14/82.94** which was higher than determined criteria (80/80). It was demonstrated that the EFL supplementary vocabulary learning materials for this group of L2 learners was very effective, confirming hypothesis 1.

2. Ability in English vocabulary learning after learning by this method of instruction was improved at statistical significance at 0.05 level, confirming hypothesis 2.

3. There were no significant differences between male and female students on pretest and posttest proficiency, affirming hypothesis 3.

4. The students with different majors showed statistically significant differences on posttest at .05 level but not significant differences on pretest, affirming hypothesis 4.

5. These L2 learners indicated high satisfaction with the EFL supplementary vocabulary learning materials, confirming hypothesis 5.

7. Acknowledgements

References

Best, Johnson W. (1981). *Research in Education.* 5th ed. New Jersey: Prentice-Hall Inc.

Brown, T. S. &. Perry, F. L. Jr (1991). A comparison of three learning strategies for ESL vocabulary acquisition. *TESOL Quarterly*, 25 (1), 17-32

Brown, C. & Payne, M. E. (1994). *Five essential steps of processes in vocabulary Learning*. Paper presented at the TESOL Convention, Baltimore, Md.

Chamot, A. U. (2001). The role of learning strategies in second language acquisition. In M. P. Breen (Ed.), *Learner contributions to language learning* (pp.24-44).Essex: Pearson Education.

Coady, J. (1997). L2 vocabulary acquisition: A synthesis of research. In J. Coady & Th. Huckin (Eds.), *Second language vocabulary acquisition: A rationale for pedagogy* (pp.273-91). Cambridge: Cambridge University Press.

Cronbach, Lee Joseph. (1974). *The Dependability of Behavioral Measurement Theory of Generalizability for Scores and Profile*. New York: Wiley Press.

Cunningsworth, A. (1995). *Choosing your coursebook.* Oxford: Heinemann. Ellis, N. & Beaton, A. (1993). Factors affecting the learning of foreign language vocabulary: Imagery keyword mediators and phonological short-term memory. *The Quarterly journal of Experimental Psychology, 46A* (3), 533-558.

Fan, M. Y. (2003). Frequency of use, perceived usefulness, and actual usefulness of vocabulary learning strategies: A study of Hong Kong learners. *The Modern Language Journal*, 87 (2), 222-241.

Hatch, E., & Brown, C. (1995). *Vocabulary, semantics, and language education,* Cambridge:Cambridge University Press.

Khajonsil, Boonriang. (2000). Educational Research Methodology. Fifth Edition. Bangkok: P.N. Publishing.

McCarthy (1988). *Vocabulary and Language Teaching*. NewYork: Longman

Nation, P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press

Office of the National Education Commission (1999). *National Education Act B.E. 2542*, Office of the Prime Minister ,Kingdom of Thailand.

O'Malley, M. & Chamot, A. (1990). *Learning strategies in second language acquisition*. New York: Cambridge University Press.

Oxford, R. (1990). *Language learning strategies: What every teacher should know.* New York: Newbury House.

Oxford, R. & Scarcella, R.C. (1994). Second language vocabulary learning among adults: state of the art in vocabulary instruction. *System*, 22(2), 231-243.

Schmitt, N. (2007a). Vocabulary learning strategies. In McCarthy, M. & N. Schmitt (Eds). *Vocabulary: Description, acquisition, and pedagogy*. Cambridge University Press.

Schmitt, N. (2000). *Vocabulary in language teaching*. New York: Cambridge University Press

Sokmen, A. (1997). Current trends in teaching second language vocabulary. In N. Schmitt & M. McCarthy (eds.), *Vocabulary: Description, acquisition and pedagogy*. (pp.237-257). Cambridge: Cambridge University Press.

Thai-Nichi Institute of Technology (2011). *TNI student handbook*, Bangkok.

Wesche, M. & Paribakht, T. S. (1996). Assessing second language vocabulary knowledge: Depth versus breadth. Canadian Modern Language Revierw, *53* (1), 13-40.