

Examining Thai EFL Learners' Knowledge of Academic English Vocabulary

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Abstract

Limited knowledge of vocabulary is one of the main problems for ESL/EFL students in comprehending English texts (Gunning, 2002). Many Thai EFL learners also have such a problem, especially those at the tertiary level. Sungprakul (2016) measured the vocabulary size of Thai university students and found that the first-year students' vocabulary knowledge was around 5,800-5,900 words from the 10,000 most frequent word list. Adunyarittigun (2002) investigated factors affecting English language reading success of a Thai EFL college reader and found that inadequate knowledge of language structure and vocabulary was the main cause of the participant's failure in predicting the meaning of unknown words in context. In addition, Cobb and Horst (2001) reported that a lack of vocabulary knowledge can inhibit students' success in their academic programmes. Coxhead (2000) developed the Academic Word List or AWL and claimed that her academic word list covered 10% of the tokens in her 3,500,000 running word academic corpus and around 8.5% in an independent corpus. It can be assumed that knowing those academic words might be able to enhance students' reading ability; however, little research has been done on it. To find an effective way to improve Thai EFL university students' reading ability, this research was, therefore, conducted to examine their existing knowledge of academic English vocabulary.

Keywords: academic English vocabulary, Thai EFL learners, academic word list, receptive vocabulary, productive vocabulary

Introduction

Academic vocabulary is considered very important and useful for language learning especially learning English for Academic purposes (EAP) since it is commonly found in a wide range of academic texts of different fields of study. A number of research in academic writing reported the possibility of creating an academic vocabulary commonly used in academic writing (Campion & Elley, 1971; Praninskas, 1972; & Hwang, 1989 as cited in Nation, 2001).

Nation (2001) classified the vocabulary of academic texts into 4 groups: (1) general service or basic vocabulary or high-frequency words, (2) academic words; (3) technical words, and (4) low-frequency words. High-frequency words are the 2,000 most frequently occurring words of English. Michael West's General Service List is an instance of this group, which contains 2,000 word families composed of both function words (e.g., a, some, two) and content words (e.g., nouns, verbs, adjectives, and adverbs). The first 1,000 words cover about 77% of the running words in the academic texts whereas the other 1,000 words cover 5%. The second group, i.e. the academic words, contains 570 headwords that cover 9% of the running words in the text. Technical words are those closely related to specific subject area of the text. They cover only 5% of the running words in the text. As for the last category, i.e. low-frequency words, it covers more than 5% of the running words in the text. They include all the words that do not belong to the first three groups, such as technical words for other subject areas, proper nouns, and rarely used words. Coxhead (2000) developed the Academic Word List (AWL) containing a widely accepted account of 570 word families frequently mentioned in academic texts of different subjects. Its purpose was primarily to prepare second language learners for tertiary studies. She also claimed that her academic word list covered 10% of the tokens in her 3,500,000 running word academic corpus and around 8.5% in an independent corpus. Since 2000, there have been a number of studies conducted to investigate the importance of Coxhead's AWL in English language learning and teaching as well as its relevance in different fields of study (Matinez & Panza, 2009; Mozaffari & Moini, 2014).

Literature Review

Testing Academic Vocabulary

Academic vocabulary can be classified according to the scope of receptive and productive distinctions. Receptive vocabulary knowledge refers to the ability to understand a word when it is heard or seen while productive vocabulary knowledge is regarded as the knowledge needed to produce a word when writing or speaking (Zhou, 2010). This distinction resembles the one between the receptive skills of listening and reading and the productive skills of speaking and writing (Palmer, 1992; West, 1938; Crow, 1986 cited in Nation, 2001). Griffin (1992) reported that receptive learning is easier as than productive learning, and there are numerous

factors affecting learning e.g. proficiency, perceived goal and materials. Also, it is generally accepted that learners' receptive vocabulary size is much larger than their productive vocabulary size (Zhou, 2010).

Cummins (2000) claimed that academic proficiency transfers across languages. The students who have developed literacy in their first language (L1) tend to make remarkable progress in acquiring literacy in their second language (L2). This claim was supported by Bernhardt (2005) whose research showed a compensatory model of L2 reading that quantifies the importance of L1, L2 language knowledge, and some variables such as content, comprehension strategies, interest and motivation. In other words, she emphasized that it is not only the interdependence of L1 and L2 that affects L2 learning, but also the quantity and conditions of language transfer. Hellekejær (2009) investigated Norwegian undergraduate and graduate students' ability to read and understand the English texts on their reading lists and found that 32% of the 578 respondents had considerable difficulties in reading academic English texts even though it has been reported that the Norwegian students did very well in a comparative study of English proficiency in eight European countries. This problem seems to be worse in non-English-speaking countries such as Thailand, where English is taught as a foreign language. Thai students' English proficiency is considered unsatisfactory, particularly their reading ability (Pumirat, 1992). Adunyarittigun (2002) conducted a case study to investigate the factors affecting English language reading success. The participant was a Thai student who learned English as a foreign language from the fifth grade until the end of his bachelor's degree in Thailand. Questionnaires and reading passages were used as instruments in the study. The results revealed that the participant had a problem in predicting the meaning of unfamiliar words in context due to his inadequate knowledge of language structure and vocabulary. Besides, Tanghirunwat's (2003) study examining the reading difficulties of Thai engineers showed that the participants had difficulties with vocabulary, grammar and the content of technical texts when they read manuals and textbooks.

According to Gunning (2002), the lack of academic vocabulary is one of the main problems with vocabulary in reading. The present study, therefore, was conducted as an initial step to examine the existing knowledge of academic vocabulary of Thai students and the relationship of their knowledge with their success in academic study.

Research questions

1. How much receptive and productive academic English vocabulary do Thai EFL learners know?
2. Is there any relationship between Thai EFL learners' receptive academic vocabulary knowledge and their productive knowledge?
3. Is there any relationship between Thai EFL learners' academic vocabulary knowledge and their academic achievement?

Methodology

Subjects

The subjects who participated in this study were 53 undergraduate students, both males and females, studying in three faculties at King Mongkut's University of Technology Thonburi (KMUTT), namely, Engineering (30), Science (9) and Industrial Education (14). The majority (58.5%) were in their fourth year, 35.8% were third-year students and only 5.7% were in their second year of study. The reason why these students were selected as the subjects was due to their background of academic English vocabulary and experience in academic reading and writing from the required English courses taken at KMUTT. The subjects had different levels of academic performance, and their cumulative GPAs ranged from 1.71 to 3.99.

Academic Vocabulary Test

Based on Coxhead's AWL, a newly developed Academic Vocabulary test was used as a research tool for assessing the subjects' existing knowledge of academic vocabulary. It contains the selected headwords of the families in the sublists.

1. Test specification

The test is composed of two parts: receptive vocabulary and productive vocabulary. A total of 30 receptive academic words were selected from the 10 sublists of Coxhead's AWL, as shown in Table 1.

Table 1: The 30 receptive words selected from 10 sublists of Coxhead's AWL

Item no.	Sublist no.	Words
1-10	1-3	significant, function, response, evaluation, distinction, potential, investment, maintenance, consent, and circumstances
11-20	4-6	undertaken, dimensions, adequate, pursue, decline, challenge, transformation, subsidiary, flexibility, and rational
21-30	7-10	transmission, extract, comprise, inspection, restore, crucial, anticipated, supplementary, subordinate, and persistent

The first part of the test was designed to assess the subjects' receptive vocabulary. It is composed of 30 multiple choice test items. In each item, the stem is contextualized, i.e., there is a sentence in which a target word is underlined. To complete the test, the subjects were asked to select the alternative that is the meaning of the underlined word. For example:

Our security experts are able to provide a response to any security incident.

- a. a question you ask in order to get information*
- b. a competition or game in which people have to answer questions*
- c. something that is done as a reaction to something that has happened or been said*
- d. a polite or formal demand for something*

Table2: The selected perceptive words

Item no.	Sublist no.	Words	
1-2	1	available	estimate
3-4	2	resident	elements
5-6	3	published	criteria
7-8	4	goal	error
9-10	5	fundamental	network
11-12	6	capable	revealed
13-14	7	release	submitted
15-16	8	visual	accompany
17-18	9	controversy	device
19-20	10	ongoing	colleague

The second part containing 20 items concerns productive vocabulary assessment. Each item is a meaningful sentence with a target word that has only the first few letters. The subjects must fill in the letters to complete each word. The first few letters were provided to prevent the subjects from completing the sentence by filling in another word that may be grammatically and semantically correct. For example:

*If the information entered into any field is invalid, an **err**_____ message will be displayed at the foot of the page..*

2. Test quality

The quality of the test was measured in terms of its internal consistency or reliability and content validity. All the test items were listed according to their degrees of difficulty and discrimination (see Appendix 1).

The measure of its reliability is Cronbach's Alpha as the test is composed of items with different numbers of points given for different response alternatives. The reliability coefficient of the test is 0.82 which means it is very good for a classroom test. However, to become a standardized test for which the reliability coefficient should be 0.90 and above (Scorepak®, 2013), it needs improvement. To determine the subjects' performance on the Academic Vocabulary Test that reflects their academic vocabulary knowledge, the following criteria were set as shown in Table 3.

Table 3: Criteria for judging the subjects' performance on the Academic English Test

Criteria for the whole test	Criteria for each part
41-60 = Good	21-30 = Good
21-40 = Fair	11-20 = Fair
1-20 = Poor	1-10 = Poor

Findings

The data were collected and analyzed quantitatively. Descriptive statistics was used in analyzing the test results. Table 4 shows the Academic Vocabulary Test results with the means for the receptive vocabulary and productive vocabulary parts.

Table 4: Academic Vocabulary Test Results

	<i>k</i>	Minimum	Maximum	<i>M</i>	<i>SD</i>	Interpretation
Receptive vocabulary	30	8	28	15.83	5.07	Fair
Productive vocabulary	30	8.5	25.50	16.25	4.69	Fair
The whole test	60	18.50	50.50	32.08	8.47	Fair

The total score (*k*) of each part was 30. The mean of the receptive vocabulary score was 15.83 whereas that of the productive vocabulary score was 16.25. It shows that the subjects' knowledge of productive vocabulary is not very much different from their knowledge of receptive vocabulary. However, compared to the criteria set, the mean for the whole test (*Mean* = 32.08) demonstrates the subjects' reasonable knowledge on academic English vocabulary in terms of both receptive and productive skills.

Table 5: Correlations between the two parts of the test

	Receptive vocabulary	Productive vocabulary
Receptive vocabulary	1 53	.506** .000
Productive vocabulary	.506** .000 53	1 53

**. Correlation is significant at the 0.01 level (2-tailed).

Table 5 reveals the correlations between the two parts of the test, indicating that there was a significant agreement between the scores of the receptive vocabulary part and the productive one. However, the correlation coefficient at 0.50 demonstrated that there was a moderate positive relationship of the subjects' knowledge of receptive and productive academic English vocabulary.

Table 6: Subjects' first ten receptive words ranked according to their receptive test scores

Rank	Words	<i>M</i>	<i>SD</i>	AWL Sublist
1	response	0.79	0.41	1
2	restore	0.77	0.42	8
3	adequate	0.75	0.43	4
4	flexibility	0.73	0.44	6
5	dimensions	0.70	0.46	4
6	challenge	0.68	0.47	5
	investment	0.68	0.47	2
7	inspection	0.66	0.48	8
	persistent	0.66	0.48	
8	comprise	0.60	0.49	7

Table 6 demonstrates the first ten receptive words the subjects of this study knew very well. The findings show that these ten words were from different sublists of the AWL, meaning that the frequency of academic words presented in academic texts or corpus was not related to the subjects' knowledge of receptive academic words. In other words, they might acquire receptive academic words through other means such as classroom learning or learning experience rather than the extent they were exposed to them in the academic texts.

Table 7: Subjects' first ten productive words ranked according to their productive test scores

Rank	Words	<i>M</i>	<i>SD</i>	AWL Sublist
1	error	1.44	0.23	4
2	network	1.34	0.45	5
3	available	1.32	0.41	1
4	estimate	1.29	0.48	1
5	submitted	1.25	0.51	7
6	elements	1.16	0.61	2
7	fundamental	0.99	0.70	5
8	resident	0.95	0.64	2
9	device	0.79	0.74	9
10	revealed	0.78	0.75	6

Similar results were found in the subjects' productive test scores (see Table 7). The subjects' first ten most known productive words also belonged to different sublists. Thus, it can be concluded that their exposure to academic texts had no effect on their acquisition of productive academic vocabulary.

Table 8: Means of the test scores on receptive skills classified into three main groups of sublists.

Group	Sublists	<i>M</i>	<i>SD</i>
1	1-3	0.47	0.18
2	4-6	0.57	0.14
3	7-10	0.54	0.14

Table 8 compares the mean scores on receptive skills of the three main groups, with group 2 (Sublists 4-6) being the highest, followed by group 3 (Sublists 7-10) and group 1 (Sub-lists 1-3) respectively. With regard to Coxhead's (2000) description of the AWL, the sublists are categorized according to their frequency of appearance in a broad range of academic texts. Therefore, the subjects should have known the words in group 1 (Sublists 1-3) better than those of the other two groups as they were presented more frequently. However, the results show that their most recognized words are those in group 2.

Table 9: Means of the test scores on productive skills classified into three main groups of sublists

Group	Sublists	<i>M</i>	<i>SD</i>
1	1-3	1.01	0.29
2	4-6	0.97	0.35
3	7-10	0.38	0.29

As shown in Table 9, it seemed that the subjects knew the productive words in group 1 (Sublists 1-3) more than those in group 2 (Sublists 4-6) and group 3 (Sublists 7-10). Clearly, the subjects were more able to acquire the receptive words even though they were not frequently presented in academic texts. For productive words, they seemed to be more familiar with the more exposed ones as the subjects knew the word in the first group better than the other two groups.

Table 10: Correlations between the subjects' academic English vocabulary knowledge and their academic achievement

	Receptive vocabulary	Productive vocabulary
Academic English vocabulary knowledge	1 53	.481** .000
Academic achievement	.481** .000 53	1 53

**. Correlation is significant at the 0.01 level (2-tailed).

The correlation coefficients reported in Table 10 were statistically significant ($r = 0.48$), which was not quite strong. It can be interpreted that there was a moderate positive association between the subjects' academic English vocabulary knowledge and their academic achievement which means the high proficiency students may have more knowledge of academic English words than the low proficiency students.

Table 11: Subjects' performance classified by their fields of study

Field of study	N	Max	Min	<i>M</i>	<i>SD</i>
Engineering	30	50.50	18.5	34.85	9.18
Science	9	40.50	24	31.88	6.28
Industrial Education	14	34.50	19.50	26.28	4.60

Regarding the subjects' performance on the Academic Vocabulary test classified by their fields of study (Table 11), it shows that Engineering students performed the best on the test, implying that they tended to have better knowledge of academic English vocabulary than the other subjects majoring in Science and Industrial Education.

Table 12: Subjects' test scores classified by their year of study

Year of study	N	Max	Min	<i>M</i>	<i>SD</i>
Second	3	38	29	33.17	4.54
Third	19	48	19.50	29.97	8.72
Fourth	31	50.50	18.50	33.27	8.55

Considering the subjects' performance on the Academic English Test classified by their year of study, it is reported that the fourth-year students' scores were the highest, indicating that their knowledge of academic English vocabulary grew at a higher rate than that of the second- and third-year students. It seems that their vocabulary sizes expanded in relation to their years of study. However, it was surprising that the second-year students performed better than the third-year students who spent one year longer studying English at the university. It can be explained that out of the 19 third-year students, 14 of them were Industrial Education students who performed poorly on the test.

Discussion

Even though a number of studies in academic vocabulary (Waring, 1997; Laufer, 1998; & Zhou, 2010) reported that learners always scored higher on the receptive test than the productive test, in this study, Thai EFL students performed better on the productive test than the receptive test, but there was little difference on their scores on both tests. Their receptive vocabulary seemed to become progressively larger than their productive vocabulary. For productive vocabulary, the students knew more high-frequency words than low-frequency ones. Moreover, their knowledge of academic vocabulary was involved with their success in academic study. In addition, their vocabulary sizes increased in relation to their age, and learning experience.

Some pedagogical implications are drawn from the present study including the teaching of academic vocabulary, the development of EAP programs, EAP materials as well as academic vocabulary tests.

The AWL is a very useful resource for teaching academic vocabulary. The lists of academic vocabulary can help in planning and assessing learning (Nation, 2001). Also, second language learners need to know academic vocabulary to deal with academic discourse of different fields of study.

Therefore, teaching academic vocabulary should be explicit and mandatory, especially at the tertiary level. Teachers can select the academic texts that contain words from different families of the AWL, and plan some activities for their students to practice them both receptively and productively. Academic literacy programs for EFL students should be developed to provide them with optimum opportunities to practice academic vocabulary.

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Appendix 1: Item analysis

Item	Item difficulty index	Item discrimination index	Item	Item difficulty index	Item discrimination index
1	0.37	0.29	26	0.36	0.21
2	0.79	0.33	27	0.32	0.04
3	0.41	0.07	28	0.53	0.36
4	0.58	0.44	29	0.41	0.18
5	0.40	0.55	30	0.66	-0.11
6	0.26	0.07	31	0.79	0.18
7	0.55	0.33	32	0.81	-0.33
8	0.70	0.41	33	0.47	0.30
9	0.47	0.39	34	0.73	0.17
10	0.19	0.36	35	0.41	0.45
11	0.51	0.25	36	0.41	0.65
12	0.70	0.49	37	0.92	0.07
13	0.75	0.35	38	0.38	0.62
14	0.38	0.19	39	0.62	0.35
15	0.43	0.68	40	0.88	0.04
16	0.68	0.15	41	0.41	0.53
17	0.49	0.26	42	0.51	0.33
18	0.58	0.07	43	0.38	0.07
19	0.73	0.09	44	0.77	-0.02
20	0.41	-.01	45	0.06	0.39
21	0.53	0.23	46	0.15	0.30
22	0.55	0.53	47	0.49	0.28
23	0.60	0.07	48	0.06	0.34
24	0.66	0.23	49	0.47	0.26
25	0.77	0.28	50	0.19	0.45

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