

CHAPTER 4

RESULTS AND DISCUSSION

In Chapter 4, the results of the four research questions are presented first and it is followed by a summary of the findings of these research questions. The final part of the chapter is the discussion of the findings.

4.1 Results

RQ1: What are the relationships between learners' passive recognition (**PR**), active recall (**AR**) and free active written (**FAW**) vocabularies? Are these relationships similar or different in PSU and SCAU learning contexts?

In order to answer RQ1, three main procedures were implemented:

(1) A general picture of the vocabulary knowledge of all the subjects was illustrated. One-way ANOVA was used for the analysis of the **PR**, **AR** and **FAW** vocabulary knowledge of PSU and SCAU students.

(2) PR test was a vocabulary proficiency test, therefore, two parallel groups were found on the basis of their **PR** scores in PSU and SCAU learning contexts for the comparisons of vocabulary knowledge in all the four research questions.⁵

(3) Pearson Product Moment formula in SPSS 13.0 was used to determine the interrelationships among three types of vocabulary knowledge of the parallel groups in PSU and SCAU learning contexts.

(1) A general picture:

Figure 4.1 shows a very vivid picture of the three types of vocabulary knowledge in PSU and SCAU contexts. **PR** vocabulary size was obviously larger (3,021 word families for PSU students; 3,348 word families for SCAU students) than **AR** vocabulary size (1,118 word families for PSU students; 1,456 word families for SCAU students) and **AR** vocabulary size was obviously larger than **FAW** vocabulary size (86 word

⁵ The pre-test was not necessary due to the special design of using multiple tests to investigate learners' vocabulary knowledge in the present study. PR tests functioned similarly as a pre-test to determine vocabulary proficiency of the two parallel groups in PSU and SCAU learning contexts.

families for PSU students; 117 word families for SCAU students). These relationships were very similar in PSU and SCAU learning contexts.

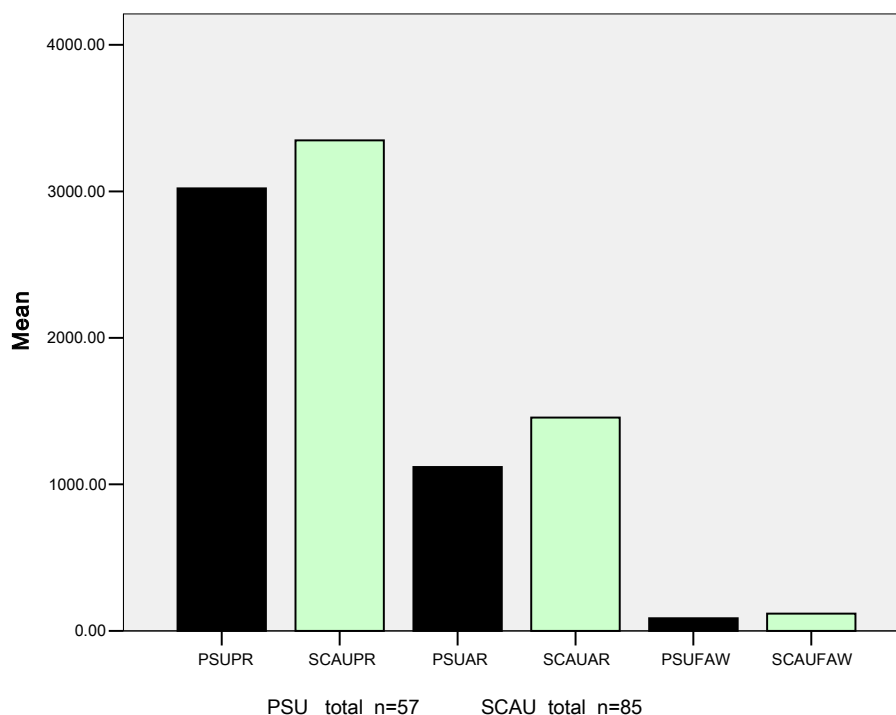


Figure 4.1 Means of three vocabulary scores of all the PSU and SCAU subjects

Table 4.1 outlines a general picture of the vocabulary knowledge of the two groups. The **PR** vocabulary sizes of both groups were above 3,000 word families (PSU: 3,021 word families; SCAU: 3,348 word families).

When compared with the passive and active vocabulary sizes of native speakers, it was found that the **PR** vocabulary sizes of PSU and SCAU students which were above 3,000 word families indicated a minimum for comprehension. With regard to **AR** vocabulary sizes, PSU students had 1,118 and SCAU students had 1,456 word families which indicated a big gap in the 2,000 to 3,000 word families level for productive use in speaking and writing for native speakers. An educated adult native speaker knows about 20,000 word families passive vocabulary (Goulden, Nation and Read, 1990). For adult EFL learners, the gap between their vocabulary size and that of native speakers is usually very large, with many adult EFL learners having a vocabulary size of much less than 5,000 word families in spite of having studied English for several years (Nation &

Warring, 1997). Even for an educated native speaker, between 3,000 to 5,000 word families is needed to provide a basis for comprehension and around 2,000 to 3,000 word families for productive use in speaking and writing (Hirsh and Nation, 1992).

Table 4.1 Means and standard deviations for the three types of vocabulary scores of all the PSU and SCAU subjects

	PSU (n=57)		SCAU (n=85)	
	Mean (Word Families)	(SD)	Mean (Word Families)	(SD)
PR	3,021	(555.9)	3,348	(395.1)
AR	1,118	(416.9)	1,456	(479.1)
FAW	86	(23.6)	117	(23.8)

One-way ANOVA was used for the analysis of the **PR**, **AR** and **FAW** vocabulary knowledge of PSU and SCAU students and it was found that **PR**, **AR** and **FAW** vocabulary sizes of PSU students and SCAU students were significantly different. The significant coefficients were .000**, two-tailed, $p < .001$. Sheffe was used to compare the significance of the differences between groups (PR, AR and FAW) of PSU students and SCAU students respectively and the mean differences were significant at the .001 level, all the significant coefficients were .000**.

(2) Parallel groups:

Table 4.2 illustrates the descriptive statistics of two parallel groups in PSU and SCAU learning contexts. Since the number of the students, the means, the standard deviations, the standard errors, and the numbers of the male and female students of the two groups are extremely identical, and the p-value (.997) of the t-test shows there is significant difference between these two groups, the two groups were identified as parallel groups for all the rest of the comparisons in the study.

Table 4.2 Descriptive statistics for the parallel groups of PSU and SCAU learners

Vocabulary knowledge	PSU ⁶ (n=40)			SCAU ⁷ (n=40)			t-test
	Mean	(SD)	(SE)	Mean	(SD)	(SE)	p-value
	(Word Families)			(Word Families)			
PR	3290.4	(383.8)	(60.7)	3290.0	(379.6)	(60.0)	.997

** significant at the 0.001 level (2-tailed).

* significant at the 0.05 level (2-tailed).

PSU male students n=9, female students n=31; SCAU male students n=11, female students n=29.

(3) Interrelationships:

In order to determine the interrelationships among the three types of vocabulary knowledge in PSU students and SCAU students, Pearson Product Moment formula in SPSS 13.0 was used and significant correlations were found (see Table 4.3) between **PR** vocabulary size and **AR** vocabulary size for PSU students (.662**) and for SCAU students (.557**).

Table 4.3 Correlations among the three types of vocabulary scores of PSU and SCAU parallel groups

	PR		AR		FAW	
	PSU	SCAU	PSU	SCAU	PSU	SCAU
PSU PR	1		.662(**)		.199	
SCAU PR		1		.557(**)		.405(*)
PSU AR	.662(**)		1		.251	
SCAU AR		.557(**)		1		.267
PSU FAW	.199		.251		1	
SCAU FAW		.405(**)		.267		1

** significant at the 0.01 level (2-tailed). * significant at the 0.05 level (2-tailed).

PSU students n=40; SCAU students n=40.

⁶ The PSU 2004 Academic year students' mean raw score of the English Entrance Exam is 42.7 out of 100. The 40 PSU Finance students' mean raw score of the English Entrance Exam is 43.1.

⁷ The SCAU 2004 Academic year students' mean score of the English Entrance Exam is 510 CEEB score (the standard used by College Entrance Examination Board in America). The 40 SCAU Finance students' mean score of the English Entrance Exam is 531.5 CEEB score.

The correlations, however, between **PR** vocabulary size and **FAW** vocabulary size were different in the two learning contexts with a significant positive correlation for SCAU students (.405**) and no significant correlation for PSU students (.199). There were positive correlations (but no significant differences) between **AR** vocabulary size and **FAW** vocabulary size for PSU students (.251) and for SCAU students (.267).

All in all, these correlations somewhat indicated that it would not be possible to predict with accuracy PSU students' performance in writing from their **PR** vocabulary knowledge or **AR** vocabulary knowledge. In other words, PSU students' **PR** vocabulary or **AR** vocabulary performance could not well predict their performance in writing. On the contrary, it was easier to predict SCAU students' performance in writing from their **PR** vocabulary knowledge.

RQ2: What are the differences between **AR** and **FAW** vocabulary scores of learners with the same **PR** vocabulary scores in PSU and SCAU learning contexts?

RQ2 investigated the differences that might exist between the **AR** and **FAW** vocabulary scores of learners with the same **PR** vocabulary scores. Therefore, three procedures were implemented:

(1) T-tests were used to compare the differences between **AR** and **FAW** scores of learners in the parallel groups across the learning contexts.

(2) T-tests were used to compare the differences between the scores of the 2,000 word frequency level in **PR** and **AR** tests across the learning contexts.

(3) One-way ANOVA was used to compare the difference among **PR**, **AR**, and **FAW** scores of learners in the parallel groups within the same learning context.

(1) Differences between AR and FAW scores:

T-tests were used to compare the differences between **AR** and **FAW** scores of learners in the parallel groups across the learning contexts. As shown in Table 4.4, significant differences were found between **AR** and **FAW** vocabulary knowledge in the parallel groups across the learning contexts with SCAU students having 244 more word families (1,451.4 minus 1,207.8) in **AR** test and 35 more word families (122 minus 87) in **FAW** test than PSU students (also see Figure 4.2). The **AR/PR** ratio and **FAW/PR** ratio also show that SCAU students performed slightly better in the **AR** and **FAW**

vocabulary knowledge when both groups in the two different learning contexts had the same **PR** vocabulary knowledge.

Table 4.4 Means and standard deviations for the vocabulary scores of the PSU and SCAU parallel groups

	PSU (n=40)		SCAU (n=40)		t-test p-value
	Mean (Word Families)	(SD)	Mean (Word Families)	(SD)	
AR	1,207.8	(430.6)	1,451.4	(466.8)	.018*
FAW	87	(24.6)	122	(24.3)	.000**
AR/PR ratio ⁸	36.7%		44.1%		
FAW/PR ratio ⁹	2.6%		3.7%		

** significant at the 0.001 level (2-tailed).

* significant at the 0.05 level (2-tailed).

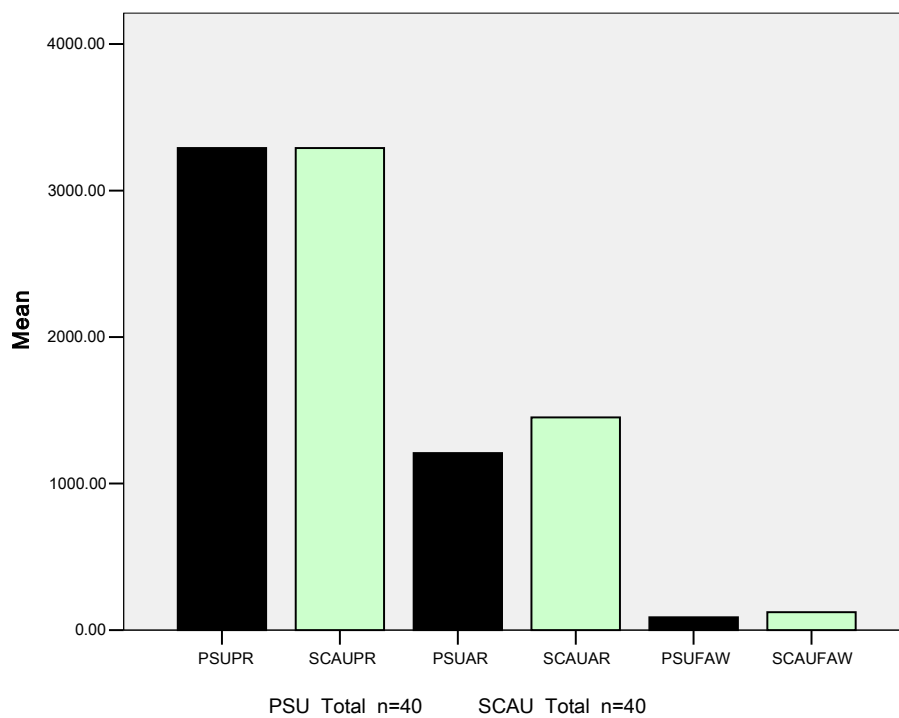


Figure 4.2 Means of three vocabulary scores of the PSU and SCAU parallel groups

⁸ **AR/PR** ratio: the percentage of the mean of the **AR** scores (PSU: 1207.8; SCAU: 1451.4) divided by the mean of the **PR** scores (PSU: 3290.4; SCAU: 3290).

⁹ **FAW/PR** ratio: the percentage of the mean of the **FAW** scores (PSU: 87; SCAU: 122) divided by the mean of the **PR** scores (PSU: 3290.4; SCAU: 3290).

(2) Differences at the 2,000 word frequency level:

T-tests were used to compare the differences between the scores of the 2,000 word frequency level in the **PR** and **AR** tests across the learning contexts (see Table 4.5). The main purpose of constructing this comparison was that it might be possible to find partial information about their vocabulary learning at their pre-university stage. It was found that at the 2,000 word level in the **PR** and **AR** tests, strongly significant differences existed between PSU and SCAU students (**PR**: $p=.000^{**}$; **AR**: $p=.000^{**}$). The **PR** and **AR** tests are both proficiency tests to determine the learners' vocabulary proficiency after about 8.5 years (for SCAU students) to 11.1 years (for PSU students) of the English learning. In terms of the requirement of the curriculum that the SCAU students had followed in their English instruction, most of the 2,000 words were taught as new words at their pre-university stage though in the FE courses, these words were also practiced passively and actively. According to the English Syllabus (1992) for Thai secondary school learners, 2,500 high-frequency words and phrases were required to learn. As PSU subjects came from various middle school backgrounds and the researcher is not a Thai teacher who is very familiar with the Thai learning situations and also due to the constraints of time, the researcher could only vaguely claim that the situation was similar for PSU subjects. Therefore, it might be possible that the SCAU students were better at their 2,000 level **PR** and **AR** vocabularies at the pre-university stage.

Table 4.5 Means of raw scores of PR and AR vocabularies at the 2,000 word frequency level for PSU and SCAU students

W o r d frequency level	PR					AR				
	PSU		SCAU		t-test	PSU		SCAU		t-test
	(mean)	(SD)	(mean)	(SD)	p-value	(mean)	(SD)	(mean)	(SD)	p-value
2000	26.7	(2.17)	28.6	(1.25)	.000**	12.5	(4.03)	16	(4.50)	.000**

PR: 30 items for the 2000 word frequency level; **AR**: 30 items for the 2000 word frequency level.

One point for each correct item. PSU n=40; SCAU n=40.

** significant at the 0.001 level (2-tailed); * significant at the 0.05 level (2-tailed).

(3) Difference among PR, AR, and FAW scores:

One-way ANOVA was used to compare the difference among **PR**, **AR**, and **FAW** scores of PSU and SCAU students and it was found that **PR**, **AR** and **FAW** vocabulary sizes of PSU students and SCAU students were significantly different. The significant coefficients were $p=.000^{**}$, two-tailed, $p<.001$. Sheffe was used to compare the significance of the differences between groups (**PR**, **AR** and **FAW**) of PSU students and SCAU students respectively and the mean differences were significant at the .001 level, all the significant coefficients were .000**.

RQ3: Do the relationships between active recall (**AR**) and free active written (**FAW**) vocabularies change with shifts in learners' passive vocabulary knowledge (**PR**)? Are these changes similar or different in PSU and SCAU learning contexts?

RQ3 investigated the changes that might occur in the relationships among the **AR** and **FAW** vocabulary knowledge as a result of the increased **PR** vocabulary knowledge. Therefore, two kinds of comparisons were implemented:

- (1) The comparisons of **AR** and **FAW** scores among low, middle and high groups within the same learning context (i.e., PSU students or SCAU students) using t-tests in each learning context. Due to the small sizes of the groups, t-tests were used instead of the one-way ANOVA.
- (2) The comparisons between groups with the same **PR** vocabularies (i.e. to compare between: the low groups of PSU and SCAU; the middle groups of PSU and SCAU; and the high groups of PSU and SCAU) in different learning contexts, using t-tests.

The researcher divided the learners of the two parallel groups into high and low proficiency groups based upon Hughes's (1989) technique of top 27% and bottom 27% of the total participants. The middle part of the participants became the middle group.

Table 4.6 Comparison of PR, AR and FAW scores between the low, middle and high groups of PSU and SCAU students

Vocabulary Scores	Low	Middle	High	T-tests between three groups in the same learning context	
	n=11	n=18	n=11	Low & Middle	Middle & High
	mean	mean	mean	p-value	p-value
PSU PR	2,854	3,273	3,756	.000**	.000**
PSU AR	1,003	1,106	1,579	.471	.003*
PSU FAW	81	84	99	.735	.080
SCAU PR	2,844	3,287	3,740	.000**	.000**
SCAU AR	1,174	1,382	1,841	.187	.002*
SCAU FAW	104	115	130	.247	.176

** significant at the 0.001 level (2-tailed). * significant at the 0.05 level (2-tailed). PSU total n=40; SCAU total n=40.

For the first kind of comparison, as shown in Table 4.6, the two dimensions of learners' vocabulary knowledge, **AR** and **FAW** vocabulary scores, increased at different rates with the shifts of the **PR** vocabulary knowledge. While the **PR** vocabulary sizes in both PSU students' and SCAU students' three groups increased significantly (PSU: Low and Middle, $p=.000^{**}$; Middle and High, $p=.000^{**}$; SCAU: Low and Middle, $p=.000^{**}$; Middle and High, $p=.000^{**}$), their **AR** vocabulary sizes also grew i.e. from 1,003 word families to 1,106 and then to 1,579 for PSU students; from 1,174 word families to 1,382 and then to 1,841 word families for SCAU students (also see Figure 4.3). Significant differences were found in the **AR** scores between the middle groups and the high groups ($p=.003^*$ for PSU students; $p=.002^*$ for SCAU students).

In contrast, their **FAW** vocabulary sizes (also see Figure 4.4) increased very little i.e. from 81 word families to 84 and then to 99 for PSU students; from 104 word families to 115 and then to 130 word families for SCAU students. No significant differences were found in the growth of **FAW** vocabulary knowledge between the low groups and the middle groups as well as between the middle groups and the high groups of PSU and SCAU students.

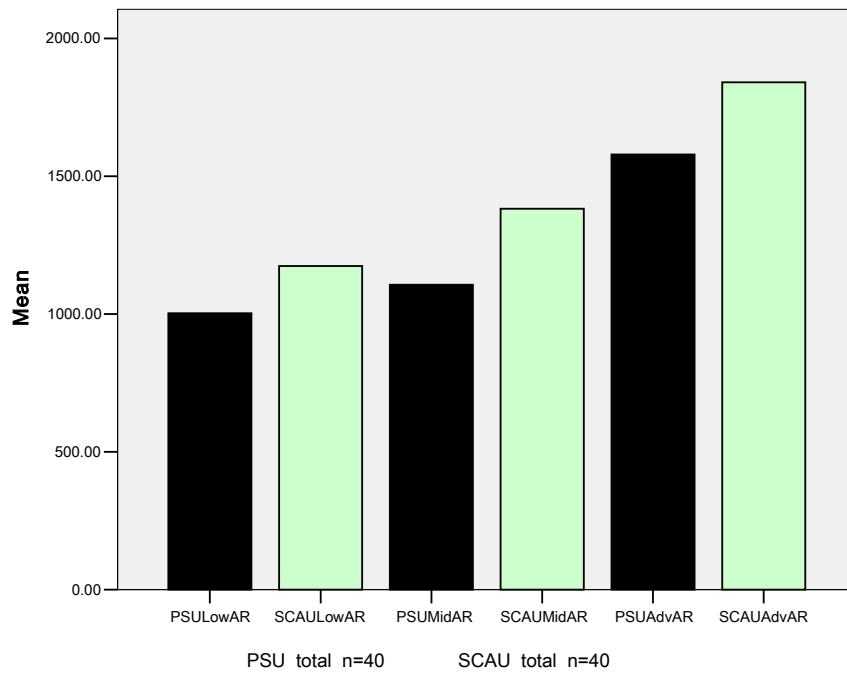


Figure 4.3 Comparison of AR scores between the low, middle and high groups of PSU and SCAU students

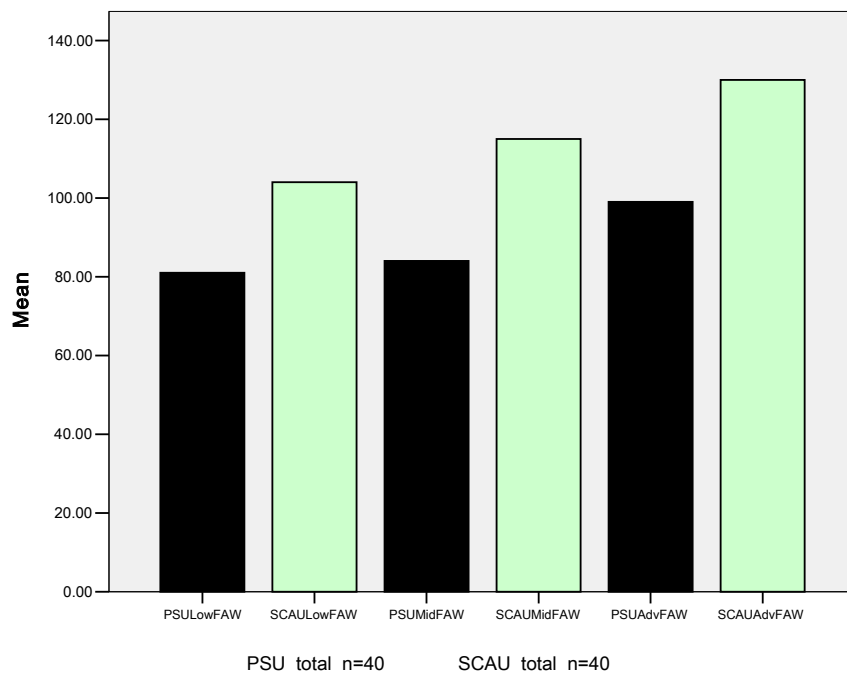


Figure 4.4 Comparison of FAW scores between the low, middle and high groups of PSU and SCAU students

Secondly, comparisons of groups with the same **PR** vocabularies in different learning contexts were made (see Table 4.7). T-tests revealed significant differences between PSU students' and SCAU students' middle groups in **AR** scores ($p=.025^*$) and between all the low, middle and high groups in **FAW** vocabulary knowledge of PSU and SCAU students (between low groups: $p=.007^*$; between middle groups: $p=.001^{**}$; between high groups: $p=.004^*$).

Regarding ratios, the **AR/PR** and **FAW/PR** vocabulary ratios of the low, middle and high groups of SCAU students are all higher than those of PSU students.

The figures in Table 4.7 show that SCAU students were better at their productive vocabulary knowledge especially in **FAW** vocabulary knowledge.

Due to the small sample sizes in the groups, the Mann-Whitney U tests for non-parametric tests were used to calculate the data using t-tests in Table 4.6 and Table 4.7. The results of the non-parametric tests confirmed the results of the parametric tests.

Table 4.7 Comparison of the test scores between the low, middle and high groups of PSU and SCAU students

	Low			Middle			High		
	PSU n=11	SCAU n=11	t-test p-value	PSU n= 18	SCAU n=18	t-test p-value	PSU n= 11	SCAU n=11	t-test p-value
AR	1,003	1,174	.372	1,106	1,382	.025*	1,579	1,841	.120
FAW	81	104	.007*	84	115	.001**	99	130	.004*
AR/PR ratio ¹⁰	35.1%	41.3%		33.8%	42.0%		42.0%	49.2%	
FAW/PR ratio ¹¹	2.8%	3.7%		2.57%	3.50%		2.63%	3.48%	

** significant at the 0.001 level (2-tailed).

* significant at the 0.05 level (2-tailed).

PSU total n=40; SCAU total n=40

¹⁰ **AR/PR** ratio: the percentage of the mean of the **AR** scores (PSU: low 1,003; middle 1,106; high 1,579; SCAU: low 1,174; middle 1,382; high 1,841) divided by the mean of the **PR** scores (PSU: low 2,854; middle 3,273; high 3,756; SCAU: low 2,844; middle 3,287; high 3,740);

¹¹ **FAW/PR** ratio: the percentage of the mean of the **FAW** scores (PSU: low 81; middle 84; high 99; SCAU: low 104; middle 115; high 130) divided by the mean of the **PR** scores (PSU: low 2,854; middle 3,273; high 3,756; SCAU: low 2,844; middle 3,287; high 3,740).

RQ4: What is the difference between the **FAW** vocabularies of PSU and SCAU learners?

To answer RQ4, **FAW** vocabulary data of the two parallel groups were analyzed quantitatively and qualitatively. The VocabProfile which has been proved to be a reliable and valid measure of lexical richness in writing (Laufer and Nation, 1995) was used in this study. In addition, the Text Lex Compare and the FreqList were also used to analyze the words used in **FAW** tests by PSU students and SCAU students. The words were analyzed by observing the following aspects: word frequency, text length, unique words used by PSU students and SCAU students, the influence of the culture and geographical position, and parts of speech.

1. Table 4.8 outlines the means of **FAW** vocabularies of the two parallel groups from PSU and SCAU analyzed by the VocabProfile.

Table 4.8 The means of FAW vocabularies of PSU and SCAU parallel groups

W o r d f r e q u e n c y l e v e l s	PSU (n=40)			SCAU (n=40)			t-test p-value
	<u>mean</u> (Word families)	<u>(SD)</u>	<u>tokens</u> (%)	<u>mean</u> (Word families)	<u>(SD)</u> (%)	<u>tokens</u> (%)	
1-1000	68.8	(20.4)	(88.16)	97.8	(16.06)	(89.5)	.000**
1001-2000	8.6	(3.0)	(5.44)	14.2	(15.2)	(5.23)	.027*
Academic	1.7	(1.4)	(1.07)	2.7	(1.9)	(1.07)	.01*
Off-list	7.4	(3.6)	(5.33)	6.8	(3.1)	(4.15)	.385
Total	87	(24.6)	(100)	122	(24.3)	(100)	.000**

** significant at the 0.001 level (2-tailed).

* significant at the 0.05 level (2-tailed).

Significant differences were found in all word levels except the Off-list words level. Particularly, there was a great significant difference at 1-1,000 word level between PSU students and SCAU students ($p=0.000^{**}$) with SCAU students having 29 word families more (97.8 word families minus 68.8 word families). On average, SCAU students have used 35 more word families than PSU students (122 word families minus 87 word families).

By analyzing the free active vocabulary of the learners' writing, the frequency levels of the words that students produced were revealed by the VocabProfile.

According to Table 4.8, in PSU students' **FAW**, 88.16% of the words belonged to the 1-1,000 word level, and 5.44% of the words belonged to the 1,001-2,000 word level. In SCAU students' **FAW**, 89.5% of the words belonged to the 1-1,000 word level, and 5.23% of the words belonged to the 1,001-2,000 word level. Therefore, in sum, 93.6% words in PSU students' writing and 94.73% words in SCAU students' writing belonged to the first 2,000 high frequency words.

2. The words used by parallel groups of PSU students and SCAU students were analyzed from the following 5 perspectives:

- (1) Text length;
- (2) Word frequency;
- (3) Unique words used by PSU students and SCAU students;
- (4) The influence of the culture and geographical positions;
- (5) Parts of speech.

(1) Text length:

The Text Lex Compare was used to compare the **FAW** vocabularies of the PSU and SCAU students. The average length of the texts (excluding the proper nouns) produced by SCAU students was 282 tokens while the average length of the texts produced by PSU students was 186 tokens. Apparently, SCAU students used greater elaboration to express themselves than did their PSU counterparts when they were all asked to write about the same topics.

(2) Word frequency

Word frequency lists of **FAW** vocabularies of PSU students and SCAU students are shown by the FreqList. The top 10 words in the word frequency lists of the PSU students and SCAU students were compared with those in a native speakers' word list from the British National Corpus (BNC)¹² (Ghadessy et al., 2001:56). Some similarities and differences between EFL learners' and native speakers' word frequency were found (see Table 4.9).

¹² BNC is an over 100 million words corpus of modern English which was completed in 1994 by Oxford University Press. The written part (90%) in BNC includes texts from newspapers, journals for all ages, academic books, university essays, popular fiction etc. published in Britain. The spoken part (10%) includes a large amount of formal and informal conversations from British people with various occupations.

Table 4.9 Comparison of word frequency lists of PSU and SCAU students and the BNC

<i>order</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>		<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>
PSU	Is	I	The	And		To	In	People	My	It	You
%	4.49	4.21	3.86	3.75		3.56	3.55	2.18	2.14	1.99	1.88
SCAU	The	I	And	Is	To		In	A	You	Of	It
%	5.19	4.39	3.06	2.66	2.66		2.14	2.02	1.78	1.54	1.36
BNC	The	Of	And	To		A	I	In	It	You	That
%	5.15	2.83	2.57	2.32		1.99	1.83	1.65	1.61	1.44	1.42

The percentage: the frequency of the word divided by the total tokens used by the group.

Total texts tokens of PSU students: 7,442 tokens (excluding proper nouns);

Total texts tokens of SCAU students: 11,288 tokens (excluding proper nouns).

PSU n=40; SCAU n=40

As shown in Table 4.9, “I” was favored by both groups and this was to a large extent because the topic was about the students themselves. In PSU students’ writing, “is” was the most frequently used word and “the” (3.86%) went to the third position. However, in SCAU students’ texts and the BNC “the” was listed as the first in the frequency lists which took up around 5.15% of all the running words even though articles do not exist in Chinese. It was very probably that the students might have benefited from the form-focused instruction at SCAU or at pre-university stage or it might be the washback of the exams they took because writing part is an indispensable part in every exam at SCAU. “A” (1.46% for PSU students) was not even among the top ten in PSU students’ texts while it showed up both in SCAU students’ texts and BNC. This shows that PSU students used less definite article “the” and the indefinite article “a” compared with SCAU students and native speakers. This was congruent with what was revealed by some researchers (Ubol, 1979; Sukammolsun, 1980; Lukannavannich, 1988; Torut, 1997; Lush, 2002; cited in Srichai, 2002; Serebenjapol 2004). It was found in the study of Lush (2002) that Thai students face five major problems in writing in English: the misuse of the definite and indefinite articles, singular and plural nouns, tense usages, subject-verb agreement and prepositions. In addition, the study of Srichai (2002) also revealed that errors in the definite and indefinite articles occurred most frequently when they were misused and omitted in PSU students’ writings. Serebenjapol (2004) also found the most frequent local errors occur in the use of articles whereas the most frequent global errors occur in the use of

subordinators. Results indicate that errors can be traced to various causes depending on interpretation and linguistic background. Probable causes can be writer carelessness, incomplete application of grammar rules, and linguistic differences between English and Thai. Torut (1997, cited in Srichai, 2002) found that the main reason for determiner errors in their studies was the absence of an article in Thai. However, it might also be that the teaching and learning at PSU or pre-university stage were more output-focused which emphasized the fluency rather than the accuracy.

(3) Unique words used by PSU students and SCAU students:

Vocabulary that was unique to each of the parallel groups of PSU students and SCAU students--- that is, words that were used by one group but not by the other--- were revealed in the form of types by the Text Lex Compare. The unique vocabularies were analyzed using the VocabProfile, and unique words were classified into word families. Table 4.10 illustrates the results from the VocabProfile:

Table 4.10 Mutually exclusive vocabulary of the PSU and SCAU students

W o r d f r e q u e n c y levels	PSU students used but SCAU students did not use	SCAU students used but PSU students did not use
	(PSU n=40) (word family)	(SCAU n=40) (word family)
1-1000	134	337
1001-2000	66	102
Academic	21	48
Off-list	81	107
Total	302	594
Average per text	7.55	14.85

As shown in Table 4.10 at all word levels, SCAU students used a greater variety of vocabulary. On the whole, PSU students have used 302 word families (7.55 word families per text) that SCAU students have not used while SCAU students have used 594 word families that PSU students have not used (14.85 word families per text).

(4) The influence of the culture and geographical positions:

Some vocabulary that the two parallel groups used was likely influenced by their respective cultures as well as geographical positions in each country (see Table 4.11).

Table 4.11 The vocabulary that was influenced by the culture and geographical position in the texts of PSU and SCAU students

<i>Word frequency levels</i>	<i>Words used by PSU students</i>	<i>Words used by SCAU students</i>
<i>1-1,000</i>	April, coast, cold, sea, temple, religion, south.	August, February, January, October, spring, snow, red.
<i>1,001-2,000</i>	float, flood, island, pray, weather, worship.	autumn, tea.
<i>Academic Vocabulary</i>	—	—
<i>Off-list</i>	beach, Buddha, Buddhism, Buddhist, candle, charity, coral, disaster, merit, monk, spicy, seafood, reef, underwater, waterfall.	Lunar, moon-cake, lantern, firecrackers, firework, dumplings, pingpong.

In PSU students' writing, the students used many words which were unique to Thai culture. PSU students talked about Thai New Year in "April", traditional festivals, their local foods and tourist attractions. Words such as "pray", "merit", "monk" "Buddha", "Buddhism" and "Buddhist" were used in reference to religion-related customs which are popular in Thailand. Words such as "sea, beach, coast, island, waterfall, seafood, underwater, coral and reef" were influenced by geographical position: Southern Thailand. They used "flood" and "disaster" to describe the Tsunami which occurred in Southern Thailand in December, 2004.

Similarly, SCAU students also used unique vocabulary. For example, "red" "lanterns", "firecrackers", "fireworks" and "dumplings" are very popular at Chinese New Year while "moon-cake" and "tea" are popular in the Mid-autumn Festival according to the "Lunar" calendar. Thai students would not talk about "spring" or

“snow” because there is no spring or snow in Thailand. “Pingpong” is the Chinese pronunciation to refer to the table tennis.

(5) Parts of speech:

Lastly, words were classified according to parts of speech.

(5.1) Tables 4.12, and 4.13 show how conjunctions, prepositions and pronouns were used by PSU students and SCAU students.

Table 4.12 The conjunctions, prepositions and pronouns used by PSU and SCAU students

<i>Part of speech</i>	<i>PSU students (frequency) n=40</i>	<i>SCAU students (frequency) n=40</i>
<i>Conjunctions</i>	and(279), that(71), when(40), because(29), or(28), but(19), if (18), so(17), who(16), as(14), why (8), what(4), where (3), how(1), until(1). The following was used only by PSU students: Whenever(1).	and(345), that(59), when(33), because (57), or(27), but(60), if (44), so(95), who(8), as(61), what(35), where(3), why (5), how(13), until (2). The following was used only by SCAU students: which(49), though(10), while(7), whether(4), however(3), since(3), although(3), unless(1), whatever(1), unless(1), neither(1).
<i>Prepositions</i>	to(256), in(264), of(97), for(61), with(38), about (28), on(24), at(22), than(14), from(13), by (16), around(9), after(6), into(5), up(3), along(2), before(1). The following was used only by PSU students: past(1).	to(300), in(241), of(174), for(90), with (65), about(53), on(63), at(32), than(6), from(25), by(14), around(13), after(10), into(5), up(14), along(2), before(7). The following was used only by SCAU students: during(12), without(7), besides(7), between(4), except(4), through(2), among(2).
<i>Pronouns</i>	I(313), my(159),	I(495), my(130), it(153), you(201), me

	<p>it(148), you(139), me (51), they(37), there (24), this(19), them(17), other(13), such(12), she (4), their(3), myself(2), something(2), our(1), yours(1).</p> <p>The following was used only by PSU students: each(13), someone(3), any(2), anything(2), its (2), him(2), whoever(1), these(1).</p>	<p>(72), they(37), there(52),this(35), them (20), other(27), such(19), she(6), their (21), myself(9), something(16), our(61), yours(15).</p> <p>The following was used only by SCAU students: We(115), all(55), some(51),your(43), us (13), these(9), everyone(8), others(7), her(6), yourselves(5), his(5), nothing(5), he(5),ourselves(4), both(4), themselves (3), his(3), everything(2), mine(1),none (1),nobody(1).</p>
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Total texts tokens of PSU students: 7,442 tokens (excluding proper nouns);

Total texts tokens of SCAU students: 11,288 tokens(excluding proper nouns).

Table 4.13 Frequency of conjunctions, prepositions and pronouns used by PSU and SCAU students

Frequency	Conjunctions		Prepositions		Pronouns	
	PSU	SCAU	PSU	SCAU	PSU	SCAU
Average frequency per text	13.25	23.25	21.5	28.8	24.2	38.8
Average frequency per 100 tokens	7.1	8.2	11.6	10.2	13	13.8
Total frequency	530	930	861	1152	968	1550

PSU students n=40; SCAU students n=40.

On average, the SCAU students used a greater variety of conjunctions, prepositions and pronouns than did the PSU students (see Table 4.12 Table 4.13). However, the two groups had similar average frequencies per 100 tokens in each classification (see Table 4.13). The use of conjunctions, prepositions and pronouns show some cohesive features (Halliday, 1967, 1973; Halliday & Hasan, 1976; Master, 1986. cited in Biesenbach-Lucas et al., 2000). Conjunctions are clause subordinators used to connect ideas while many prepositions are phrase subordinators. The similarity in average frequencies of conjunctions, prepositions and pronouns per 100 tokens in students' writing to a certain extent reflects that PSU students' and SCAU students' texts were similarly cohesive.

However, when some high frequency conjunctions were analyzed, differences emerged: Firstly, the conjunction, “which”, appearing 1.2 times on average in SCAU students’ writing, did not appear in PSU students’ texts. Therefore, it seemed PSU students had not mastered the relative clause introduced by “which”. Secondly, SCAU students used more semantically similar words such as “if” and “whether”; “but” and “although, though, however”, and “what” and “whatever”. However, PSU students used only “if”, “but”, and “what”.

(5.2) Tables 4.14 and 4.15 show how PSU and SCAU students used adjectives. According to appraisal theory proposed by Martin and White (1996 and 1998, cited in Laohawiriyanon, 1998), an attitudinal lexis carries positive or negative meaning. Also, the degree of the attitude a word conveys can be classified as high, medium or low. The adjectives were analyzed according to one relevant aspect: positive or negative.

Table 4.14 The use of adjectives by PSU and SCAU students

<i>PSU students (n=40)</i>		<i>SCAU students (n=40)</i>	
<i>Positive (frequency)</i>	<i>Negative (frequency)</i>	<i>Positive (frequency)</i>	<i>Negative (frequency)</i>
many(53), beautiful(53), good(44), new(31), popular(27), biggest(24), kind(19), delicious(18), happy(12), funny(8), free(8), big(7), friendly(7), fresh(6), nice(6), best(5), easy(5), interesting(4), lovely(4), favorite(3), wonderful(3), attractive(3), fantastic(1), comfortable(2), easier(2), intelligent(2), better(2), full(2), pretty(2), fascinated(2), younger(1), politest(1), smart(1), perfect(1), excited(1), healthy(1), exciting(1), cute(1), large(1), traditional(1), helpful(1), neat(1), high(1), enjoyable(1).	bad(7), lazy(1), dangerous(1), unhappy(1), serious(1).	many(88), great(54), good(52), new(43), biggest(36), beautiful(26), popular(24), best(23), better(15), full(14), wonderful(14), big(13), happy(13), delicious(12), favorite(8), large(8), interesting(6), healthy(6), high(5), exciting(4), interested(4), sure(3), enough(3), friendly(3), happiest(2), attractive(2), excited(2), sweet(2), meaningful(2), largest(2), unique(2), enormous(1), bright(1), tremendous(1), successful(1), charming(1), romantic(1), precious(1), pretty(1), warm(1), amusing(1), helpful(1), excellent(1), eager(1), easy(1), smarter(1), neat(1), perfect(1), smooth(1), useful(1), curious(1).	busy(20), difficult(3), boring(4), bad(3), unhappy(3), fat(3), lazy(3), sorry(2), tired(1), angry(1), sad(1), anxious(1), worse(1).

Total texts tokens of PSU students: 7,442 tokens (excluding proper nouns);

Total texts tokens of SCAU students: 11,288 tokens (excluding proper nouns).

Table 4.15 The frequency of the use of adjectives by PSU and SCAU students

Frequency (times)	Adjectives	
	PSU (n=40)	SCAU (n=40)
Average frequency per text	9.75	14.0
Average frequency per 100 tokens	5.2	5.0
Total frequency	390	559
Adjectives with positive meaning (%)	97%	92%

It was found that PSU students and SCAU students used many adjectives with positive meaning (97% for PSU students and 92% for SCAU students) which showed the positive sides of their country, life and hobbies. Though there was difference in the average frequency per text, there was no great difference in the average frequency per 100 tokens in PSU and SCAU students' texts.

4.2 A summary of the findings of the four research questions

RQ1:

What are the relationships between learners' passive recognition (**PR**), active recall (**AR**) and free active written (**FAW**) vocabularies? Are these relationships similar or different in PSU and SCAU learning contexts?

1. For all the subjects, it was found that **PR** vocabulary knowledge in both groups was about 3,000 word families with PSU students having 3,021 word families and SCAU students 3,348 word families; **AR** vocabulary knowledge was a little more than 1,000 word families with PSU students having 1,118 word families and SCAU students 1,456 word families; the average **FAW** vocabulary sizes were 86 word families for PSU students and 117 word families for SCAU students.

2. Two parallel groups with the mean of 3290 word families **PR** vocabulary size (PSU n=40; SCAU n=40) were identified for all the comparisons in the study.

As for the interrelationships among **PR**, **AR** and **FAW** vocabulary knowledge of PSU and SCAU students, Pearson Product Moment formula in SPSS 13.0 was used and significant correlations were found between **PR** and **AR** vocabularies of PSU students

(.662**) and SCAU students (.557**). The correlations between **PR** and **FAW** vocabulary knowledge were different in the two learning contexts with significant correlation for SCAU students (.405**) and no significant correlation for PSU students. There was no significant correlation between **AR** vocabulary size and **FAW** vocabulary size for SCAU students and for PSU students.

RQ2:

What are the differences between active recall (**AR**) and free active written (**FAW**) vocabulary scores of PSU and SCAU learners with the same passive recognition (**PR**) vocabulary scores?

1. T-tests were used to compare the differences between **AR** and **FAW** scores of learners in the parallel groups across the learning contexts. Significant differences were found between **AR** and **FAW** vocabulary knowledge in the parallel groups across the learning contexts with SCAU students having 244 more word families in **AR** test and 35 more word families in **FAW** test than PSU students. The data show that SCAU students performed better in the **AR** and **FAW** vocabulary knowledge when both groups in the two different learning contexts had the same **PR** vocabulary knowledge.

2. T-tests were used to compare the differences between the scores at the 2,000 word level in **PR** and **AR** tests across the learning contexts. It was found that at the 2,000 word level, in the **PR** and **AR** tests, strongly significant differences existed between PSU and SCAU students ($p=.000^{**}$). The coefficients might indicate that the SCAU students were better at their 2,000 level passive and active vocabularies at the pre-university stage.

3. One-way ANOVA was used to compare the difference among **PR**, **AR**, and **FAW** scores of PSU and SCAU students and it was found that **PR**, **AR** and **FAW** vocabulary sizes of PSU students and SCAU students were significantly different.

RQ3:

Do the relationships between active recall (**AR**) and free active written (**FAW**) vocabularies change with shifts in learners' passive vocabulary knowledge (**PR**)? Are these changes similar or different in PSU and SCAU learning contexts?

1. **AR** and **FAW** vocabulary knowledge increased at different rates with the shifts of the **PR** vocabulary knowledge, which were similar in both PSU and SCAU learning contexts.

Within the same learning context (in the PSU or the SCAU learning context), while the **PR** vocabulary sizes in both PSU students' and SCAU students' three groups increased significantly (PSU: Low and Middle, $p=.000^{**}$; Middle and High, $p=.000^{**}$; SCAU: Low and Middle, $p=.000^{**}$; Middle and High, $p=.000^{**}$), their **AR** vocabulary sizes also grew. Significant differences were found in the **AR** scores between the middle groups and the high groups ($p=.003^*$ for PSU students; $p=.002^*$ for SCAU students).

In contrast, **FAW** vocabulary knowledge increased very little. No significant differences were found in the growth of **FAW** vocabulary knowledge between the low groups and the middle groups as well as between the middle groups and the high groups of PSU and SCAU students.

2. Compared across different learning contexts, t-tests revealed significant differences between PSU students' and SCAU students' middle groups in **AR** scores ($p=.025^*$) and between all low, middle and high groups in **FAW** vocabulary knowledge of PSU and SCAU students (between low groups: $p=.007^*$; between middle groups: $p=.001^{**}$; between high groups: $p=.004^*$). The **AR/PR** and **FAW/PR** vocabulary ratios of the low, middle and high groups of SCAU students are all higher than those of PSU students. These results show that SCAU students were better at their productive vocabulary knowledge especially in **FAW** vocabulary knowledge.

RQ4:

What is the difference between the free active written (**FAW**) vocabularies of PSU and SCAU learners?

Through quantitative analysis of the **FAW** vocabulary knowledge of the PSU and SCAU students, significant differences were found in all word levels except the Off-list words level. Particularly, there was a great significant difference at 1-1,000 word level between PSU students and SCAU students ($p=0.000^{**}$) with SCAU students having 29 word families more. On average, SCAU students have used 35 more word families than PSU students.

From a qualitative perspective, the **FAW** vocabulary knowledge of the PSU and SCAU students' parallel groups were analyzed in terms of text length, word frequency, unique words used by PSU students and SCAU students, the influence of the culture and geographical position, and parts of speech. The findings are as follows:

- (1) The average length of the texts produced by the two high groups was 282 tokens for SCAU students and 186 tokens for PSU students (excluding proper nouns).
- (2) Word frequency analysis showed on the whole, SCAU students used a greater variety of vocabulary. PSU students used less definite article "the" and the indefinite article "a" compared with SCAU students and native speakers.
- (3) PSU students used 302 word families (7.55 word families per text) that SCAU students did not use while SCAU students have 594 word families that PSU students did not use (14.85 word families per text).
- (4) A number of unique words were influenced by the culture and geographical positions in both learning contexts.
- (5) As for parts of speech, on average, SCAU students used a greater variety of conjunctions, propositions and pronouns. The conjunction, "which", appearing 1.2 times on average in SCAU students' writing, did not appear in PSU students' texts. Therefore, it seemed PSU students had not mastered the relative clause introduced by "which". SCAU students used more semantically similar conjunctions. However, the average frequencies per 100 tokens in the texts of the two groups were similar. Regarding adjectives, it was found that 92-97% of the adjectives that were used by PSU and SCAU students had a positive meaning.

4.3 Discussion

This comparative study has shown that SCAU students utilized a larger **AR** and **FAW** vocabulary than did PSU students. Both PSU and SCAU students showed low productive vocabulary knowledge.

PR and **AR** tests are both proficiency tests to determine the learners' vocabulary proficiency after about 8.5 years (for SCAU students) to 11.1 years (for PSU students) of the English learning. However, due to the following reasons, the discussions will focus on the university FE courses.

1. This study has not followed a longitudinal design and the subjects came from various middle school backgrounds. Due to the constraints of this study, it was impossible to discuss at length about their pre-university stage English instruction. It might be that the SCAU students were better at their 2,000 level **PR** and **AR** vocabularies at the pre-university stage than PSU students because the 2,000 high-frequency words were taught as new words at the pre-university stage. However, in the FE courses these words were also practiced passively and actively since these words are high-frequency words.

2. The present study focuses on vocabulary size. In terms of the vocabulary size, the university stage is the most important stage according to the requirements of the curriculum for SCAU students (2000 words for pre-university stage and 4,200-6,000 words for the university stage). For PSU students, according to the English syllabus (1992), 2500 high-frequency words and phrases were required to learn at pre-university stage. Once the 2,000 high-frequency words and basic grammar are learned, it is an important stage for the rapid growth in vocabulary size.

A relevant discussion of the findings of the study should address the language courses taken by the PSU students and the SCAU students, including issues of class size, testing style, motivation, instruction time, quantity of new vocabulary, quantity and variety of the reading texts, and vocabulary glossing.

Nation (2001) put forward an idea that a balanced language course should consist of four major strands:

- (1) Firstly, there is learning from comprehensible meaning-focused input.

Learning from meaning-focused input can best occur if learners are familiar with at least 95% of the running words in the input they are focusing on.

- (2) The second strand is form-focused instruction which refers to deliberate teaching and learning of language items. Vocabulary is just one of the perspectives (Long, 1998; Ellis, 1990; cited in Nation, 2001).
- (3) The third strand is meaning-focused output.
- (4) The fourth strand is fluency development in which learners become more adept at using items they already know.

In a balanced language course, the four strands receive roughly the same amount of attention with about 25% of the learning time in and outside of class for each strand. Nation argues that vocabulary teaching and learning fit into all four strands. If the strands are not equally represented, then the design of the course needs to be reviewed.

Therefore, in terms of vocabulary teaching and learning, both Thai and Chinese FE courses are reviewed. There were detailed teaching plans for FE courses at PSU, and according to the teaching plans, PSU students spent different amount of time on the 4 strands: 37% on Strand (1), 22% on Stand (2), 39% on Strand (3) and 2% for Strand (4). Comparatively speaking, Thai FE courses spent more time on Strands (1) and (3) but less time on (2) and (4). Chinese FE courses dedicated much more time to Strands (1) and (2) but less time to the other two strands from a rough calculation based upon the SCAU students teaching plans (The minutes for each activity were not specified). The following might be the reasons:

The textbooks used by PSU students were published by Cambridge University Press and written by native speakers, Richards et al. Richards was an experienced English teacher and very famous for his English teaching methodology. According to the design of the textbook, PSU students would learn vocabulary productively through a variety of enjoyable activities and through individual practice in which learners would apply the language they have learned. This was largely a result of the integrated, multi-skills syllabus the authors followed to compile the textbooks. They linked topics, communicative functions, and grammar together in order to build a link between grammatical form and communicative functions. For example, competence is always presented communicatively with controlled accuracy-based activities leading to fluency-based communicative activities. The textbook teaches students how to use

English related to school, social life, work and leisure. The underlying philosophy is that learning a second or foreign language is more rewarding, meaningful and effective when language is used for authentic communication (Richards et al., 1998). This relates to the meaning-focused output, Strand (3). Thai teachers adopted and adapted the textbooks to the FE courses adding supplementary reading materials and productive activities. This accounts for Strand (1) of the course design being given the second largest amount of attention (37%).

In contrast, SCAU students read more and longer texts of varying styles. The main textbook alone, in the SCAU students learning context, contained 13,756 words and 15,327 words for the first and second year courses respectively. This demonstrates the large amount of reading (Strand (1)) in the SCAU student's curriculum. This comparative deficit in reading texts in the PSU student's curriculum would not necessarily result in PSU students performing more poorly with high frequency vocabulary in speaking or writing. Compared with SCAU students, PSU students had more time in class for the active use of vocabulary in speaking and writing. Though the textbook authors claimed they had followed an eclectic methodology to compile the textbook, SCAU students learned vocabulary mainly through intensive reading. The teacher would teach the vocabulary in the reading texts in class. This was form-focused study, Strand (2). The active use of vocabulary is neglected due to the large class size, and a large amount of new language points to be explained in class by the teacher (because there were about 1,500 new words to be learned within one year). Moreover, there was a negative washback of about 85% objective parts in the tests.

The following discussions are on class size, testing style, motivation, instruction time, the quantity of new vocabulary, the quantity and varieties of the reading texts, and vocabulary glossing.

(1). As for class size, PSU students seemed to have had an advantage: about 33 students in one PSU students' class while there were about 64 in one SCAU students' class. The larger SCAU student's class made it less feasible to devote much time to the active use of vocabulary by speaking and writing in class. Most of the SCAU students' oral and written tasks were checked by themselves with reference to the answer key in the self-study books, or were checked by the computer programs because of the limited time in class and the limited energy of the teachers. Each teacher was responsible for 12

or more teaching hours which meant a teacher would have more than 180 FE students in one semester. Without any particular reason, a teacher was responsible for classes for two years until the four-semester FE courses ended. Therefore, though the SCAU student's class size was large, the teacher came to know the students well.

By comparison, PSU students are required to study FE only two semesters. An FE teacher is not necessarily assigned to the same class both semesters. Therefore, though class sizes at PSU are smaller than class sizes at SCAU, the teachers at PSU do not necessarily get to know their students well.

(2). As for testing style, PSU students again seemed to have been given an advantage. Tests for PSU students contained more subjective parts than did tests for SCAU students. In an analysis of the mid-term and final exams of FE course at PSU, it was found that 52% of the total scoring of the tests came from subjective parts of the tests. Subjective items are those in which the students must produce at least one English word in writing. According to the washback theory of testing, subjective testing styles have a washback effect which facilitates students' active use of vocabulary in speaking and writing. It might be that the washback effect from the tests at PSU was not a powerful influence on the students.

In China, normally, about 85% of the scores in the mid-term, final exams and the National College Tests are for objective items in the form of multiple choice questions and about 15% of the marks are for testing writing which is the subjective. Sometimes, 10% of an exam's score is for compound dictation.¹³ Therefore, the highest percentage of the subjective part is 25%. The idea of adding more subjective items to the National Exam is being discussed heatedly in China. Those who favor such a change want to take advantage of the positive washback of the National College Tests. This discussion has alerted teachers and students to the need to balance passive and active use of English.

(3). Most of the SCAU students had stronger instrumental motivation than did PSU students. As university EFL learners, instrumental motivation is stronger than integrative motivation due to the learning context.

¹³ In the first part of the compound dictation, students are required to fill in the blanks with the words or phrases they have heard; in the second part of the dictation, students are required to summarize and write the main ideas of what they have heard.

For PSU undergraduates, there are the loose guidelines of the Ministry of University Affairs (2001) without specifying words or quantities of words to learn. On the other hand, SCAU undergraduates follow the National Curriculum for Chinese College English (1999) more rigidly. The National Curriculum has stipulated the words to be taught as passive recognition vocabulary or active vocabulary and the word list of passive vocabulary is offered in the syllabus. For instance, 4,200 words (for passive recognition, and among them 2,500 words were for active use), namely the Band 4 requirement are for the lower proficient non-English majors. SCAU followed this requirement. 6,000 words (for passive recognition), namely the Band 6 requirement are for the higher proficient non-English majors. This vocabulary list is the standard on which the materials design and testing depend.

After the two-year FE study, all SCAU students would take the National College Test: Band 4 or Band 6 Test according to the requirement they followed. If they do not pass the test for the first time, they may try again repeatedly, as the National College Tests are held every half year. Moreover, if one student has already passed the Band 4 Test, he or she might study on his or her own or take part in some extra English courses in order to pass the Band 6 Test. As the certificates of CET4 and CET6 are very useful when one hunts for a job, most of the SCAU students were highly motivated to study English. Hence, SCAU students tend to be very concerned about their vocabulary knowledge whether it meets the requirements or not.

In contrast, there is no National Exam in Thailand. PSU students are motivated to learn only what is necessary to pass their midterm and final exams. While this is instrumental motivation, it is weaker than the instrumental motivation in SCAU students since the National Exam in China has so much bearing on the students' futures.

In addition, especially at SCAU, if a student does not pass the CET4, they do not graduate. Though this policy has been criticized by many people, it still carries on until today because it has really helped the students improve their overall English proficiency. An important evidence is that the passing rate of CET4 has increased dramatically and continuously since the policy was implemented in 2001. From 1993 to 2000, the passing rate of CET4 immediately after the four-semester FE courses had been between 30-50%, but from 2001 a new phase began that the passing rate of CET4

increased to nearly 60% and is still increasing. Therefore, most of SCAU students' motivation was exam-oriented resulting in very strong instrumental motivation.

The advantages and disadvantages of the Chinese FE course teaching and testing system have been studied by researchers. Because of the advantages of the National College Tests, they have been carried out every year since 1984 with continuous reforms. However, it is also true that young students in China are under much more pressure than Thai students where foreign language learning is concerned.

(4). In terms of the instruction time, SCAU students received more than PSU students. PSU students had three teaching hours per week and one year FE courses while SCAU students had four teaching hours per week and two years FE courses.

(5). From the key word list of the main textbooks, it seemed PSU students were required to learn 781 words in one year while SCAU students were required to learn 1,596 words in the first year.

(6). In terms of the quantity and varieties of the reading texts, SCAU students read longer texts in more genres including general texts, academic texts, literature works, narration, expository, and argumentation in their main textbooks than did PSU students.

(7). With regard to glossing, most studies have found that glossing has a positive effect on vocabulary learning (Hulstijn, 1992; Hulstijn, Hotlander and Greidanus, 1996; Jacobs, Dofong, 1994; Myong, 1995; Watanabe, 1997 cited in Nation 2001). Nation (2001) admits that it has certain attractions. Firstly, it allows texts to be used that may be too difficult for learners to read without glosses. Secondly, glossing provides accurate meanings for words that might not be guessed correctly; this should enhance vocabulary learning and comprehension. Thirdly, glossing provides minimal interruption of the reading process. Dictionary use is much more time-consuming. Fourthly, glossing draws attention to words and thus may encourage word learning.

In the PSU students' textbook, key vocabulary and expressions for each unit are listed at the back of students' book but without any glossing. This is not an effective way for the students to review vocabulary they have learned, nor does it facilitate internalization of vocabulary knowledge. For SCAU students, key words and expressions are listed immediately after the main reading texts with pronunciations and both L1 and L2 glossing. Also, for some important words sample sentences are also

given with L1 translation. Thus, a minimal context is offered for some important words. SCAU students learned English vocabulary with much help from their L1.

Limited exposure and lack of practice hinders the successful passage of words from receptive to productive vocabulary (Laufer & Paribakht, 1998). The “practice” explanation by DeKerser and Sokalski (1996; cited in Nation 2001) argues that in normal language learning conditions, receptive use generally gets more practice than productive use. In other words, in normal language learning conditions, more time is spent on input practice than on output practice. This may be an important factor in accounting for differences in receptive and productive vocabulary size. Compared with SCAU students, PSU students did not lack output practice according to the percentages of the 4 strands (39% of the time was for meaning-focused output; 37% meaning-focused input; 22% for form-focused instruction; 2% for fluency development). However, for SCAU students, the stronger instrumental motivation, the more English instruction time, the more new vocabulary required to learn, and the more different varieties of reading texts resulted in SCAU students’ slightly higher vocabulary output. SCAU students still lacked output practice in using their vocabulary productively and fluently.