CHAPTER 4

FINDINGS

This chapter presents the research findings. The main findings will be presented in the following areas:

4.1 Levels of Vocabulary Acquisition and Retention

4.2 The Relationship between Look up Behavior of the Students and Levels of Vocabulary Acquisition and Retention

4.3 The Students' Attitudes towards the Provision of Lexical Information in the CALL Reading Package

4.1 Levels of Vocabulary Acquisition and Retention

Research question 1: To what extent do intermediate EFL students acquire and retain vocabulary knowledge after using the CALL reading package?

To answer the first research question, the percentages and means of number of words that were acquired immediately after the reading treatment and those that were retained two weeks after the treatment for each reading text and the total number of the three reading texts will be presented in three sections:

4.1.1 The Levels of Vocabulary Acquisition

4.1.2 The Levels of Vocabulary Retention

4.1.3 The Relationship between Vocabulary Acquisition and Vocabulary Retention Levels

4.1.1 The Levels of Vocabulary Acquisition

In order to find out the extent the subjects remembered words after looking them up during each reading task, the percentages of the number of words acquired immediately after the reading treatment were calculated. Table 4.1 shows the means and percentages of the number of words acquired immediately after the reading treatment.

Table 4.1 The Levels of Vocabulary Acquisition

No. of students	Reading texts	No. of tested words	No. of words acquired (Mean)	Percentages of words acquired immediately after the reading treatment
N = 73	Text 1	14	6.92	49.43%
	Text 2	17	11.26	66.24%
	Text 3	18	12.82	71.22%
	Total	49	31.00	63.27%

According to the data in Table 4.1, 63.27% of all the words tested were remembered immediately after the reading treatment. In reading text 1, 49.43% of the tested words were remembered whereas 66.24% were acquired from reading text 2, and 71.22% of the tested words were acquired from reading text 3.

4.1.2 The Levels of Vocabulary Retention

Table 4.2 shows the students' levels of vocabulary retention. The percentages of number of retained words on delayed vocabulary tests are presented.

Table 4.2 The Levels of Vocabulary Retention

No. of students	Reading texts	No. of tested words	No. of words retained (Mean)	Percentages of words retained 2 weeks after the reading treatment
N = 73	Text 1	14	2.59	18.50%
	Text 2	17	3.85	22.65%
	Text 3	18	3.26	18.11%
	Total	49	9.70	19.80%

With respect to the data in Table 4.2, 19.80% of all the words tested were retained two weeks after the reading treatment. 18.50% of the tested words were retained from reading text 1 while 22.65% were retained from reading text 2. 18.11% of the tested words were retained from reading text 3.

4.1.3 The Relationship between Vocabulary Acquisition and Retention Levels

To examine if there were statistically significant differences between the immediate test scores and the delayed test scores among intermediate EFL Thai students, the paired samples t-test was utilized. Table 4.3 demonstrates differences between vocabulary acquisition and retention.

Table 4.3 Differences between Vocabulary Acquisition and Retention Levels

Reading texts	Immediate test scores		Delayed test scores		Mean difference	t	Sig. (2-tailed)
	Mean	SD	Mean	SD			
Text 1	6.92	2.79	2.59	1.61	4.33	17.541	.000**
Text 2	11.26	3.89	3.85	2.53	7.41	18.095	.000**
Text 3	12.82	4.63	3.26	5.55	9.56	20.232	.000**
Total	31.00	9.17	9.70	5.55	21.30	26.158	.000**

**Significant at 0.01 level.

In Table 4.3, differences between the means of vocabulary acquisition and the means of vocabulary retention in each reading text and in the total of the three reading texts are indicated respectively (Mean = 4.33, 7.41, 9.56, and 21.30). Immediate test scores when compared with delayed test scores two weeks later were significantly different when looking at each individual reading text and when looking at all cases ($t = 17.541$, 18.095, 20.232, and 26.158 respectively, $p < 0.01$).

In sum, the findings of the first research question investigating the extent of intermediate EFL students' vocabulary knowledge after using the CALL reading package show that about sixty-three percent of all the words tested were acquired immediately after the treatment when word meanings were provided during the reading comprehension process. In addition, about twenty percent of all the words tested were retained two weeks after the treatment. The current study found that the students' vocabulary acquisition level is significantly higher than their vocabulary retention level. That is, the students retained significantly fewer words two weeks after the treatment. Therefore, a trend of word loss can also be identified.

4.2 The Relationship between Look up Behavior and Levels of Vocabulary Acquisition and Retention

Research question 2: What is the relationship between students' look up behavior and their levels of word acquisition and retention?

In this study, the investigator explored the influence of the provision of lexical information for word learning on vocabulary acquisition and retention and considered it beneficial to explore look up behavior of the students and the relationship between their look up behavior and levels of word acquisition and retention. To investigate the relationship between students' look up behavior and the number of words acquired immediately after the reading treatment and retained two weeks after the treatment, data recorded in the log files were analyzed and presented in three sections:

4.2.1 The Relationship between the Number of Words Looked up and the Vocabulary Acquisition and Retention Scores

4.2.2 The Relationship between the Frequency of Looking ups and the Vocabulary Acquisition and Retention Scores

4.2.2.1 Frequency of Looking ups

4.2.3 The Comparison of Levels of Vocabulary Acquisition with Retention of Different Look up Types

4.2.3.1 Distribution of Look up Types

4.2.3.2 The Comparison of Levels of Vocabulary Acquisition with Retention of L1 Type

4.2.3.3 The Comparison of Levels of Vocabulary Acquisition with Retention of L1+ Type

4.2.3.4 The Comparison of Vocabulary Acquisition between L1 and L1+ Types

4.2.3.5 The Comparison of Vocabulary Retention between L1 and L1+ Types

4.2.1 The Relationship between the Number of Words Looked up and the Vocabulary Acquisition and Retention Scores

To see whether there was a relationship between look up behavior and vocabulary acquisition and retention scores, a Pearson correlation coefficient between the number of words looked up and the vocabulary acquisition and retention scores for each reading text and for the three reading texts were applied to the data recorded in the log files. Table 4.4 shows the relationship between the number of words looked up and vocabulary acquisition and retention scores.

Table 4.4 Correlation between the Number of Words Looked up and Vocabulary Acquisition and Retention Scores

Reading texts	No. of tested words	No. of words looked up (Mean)	Immediate tests (acquisition)		Delayed tests (retention)	
			Scores (Mean)	Correlation (r)	Scores (Mean)	Correlation (r)
Text 1	14	12.96	6.92	.219	2.59	.130
Text 2	17	16.45	11.26	.233*	3.85	.131
Text 3	18	17.26	12.82	.301**	3.26	.230
Total	49	46.67	31.00	.397**	9.70	.262*

**Significant at 0.01 level.

*Significant at 0.05 level.

As is apparent from Table 4.4, there was a positive relationship between the number of words looked up and the total scores on the three immediate tests despite a weak correlation ($r = .397$, $p < .01$). In the same way, there was a weak correlation, though positive relationship between the total number of words looked up and the total scores of the three delayed tests ($r = .262$, $p < .05$). Unlike in reading text 1, there was a significant relationship but a weak correlation between the number of

words looked up and the scores on immediate vocabulary tests in reading texts 2 and 3(Text 1, r = .219, Text 2, r = .233, $p < 0.05$; Text 3, r = .301, $p < 0.01$). However, the relationship between the number of words looked up and scores on delayed vocabulary tests for each reading text was not found to be significant (Text 1, r = .130, Text 2, r = .131, and Text 3, r = .230). These correlational analyses seem to indicate that even though the overall correlation between the number of words looked up and the scores on immediate and delayed vocabulary tests was quite weak, there was a positive relationship between these variables. This means that students who looked up more words were likely to acquire words better and retain them longer.

4.2.2 The Relationship between the Frequency of Looking ups and the Vocabulary Acquisition and Retention Scores

4.2.2.1 Frequency of Looking ups

To find the frequency of the unfamiliar words looked up, the number of looking ups on each unfamiliar word was calculated. The results are demonstrated in Table 4.5.

Table 4.5 Frequency of Looking ups

Reading texts	No. of tested words	Frequency of looking ups		
		Mean (total times)	SD	Mean (times/word)
Text 1	14	39.85	28.33	2.85
Text 2	17	67.42	51.15	3.97
Text 3	18	76.16	54.50	4.23
Total	49	183.44	117.58	3.74

The figures in Table 4.5 show that the average number of looking ups in the three reading texts was 3.74 times per word. Each individual word in each reading text was looked up at least twice (Text 1 = 2.85, Text 2 = 3.97, and Text 3 = 4.23 respectively).

To further examine the relationship between look up behavior and vocabulary acquisition and retention, the Pearson correlation coefficient was applied to calculate whether there was any significant correlation between the number of times the unknown words were looked up and the scores on immediate and delayed vocabulary tests. Table 4.6 shows the relationship between the frequency of looking ups and vocabulary acquisition and retention scores.

Table 4.6 Correlation between the Frequency of Looking ups and the Vocabulary Acquisition and Retention Scores

Reading texts	Frequency of looking ups	Immediate tests (acquisition)		Delayed tests (retention)	
	Total times (Mean)	Scores (Mean)	Correlation (r)	Scores (Mean)	Correlation (r)
Text 1	39.85	6.92	.344**	2.59	.369**
Text 2	67.42	11.26	.357**	3.85	.052
Text 3	76.16	12.82	.409**	3.26	.382**
Total	183.44	31.00	.414**	9.70	.280*

**Significant at 0.01 level.

*Significant at 0.05 level.

According to the data in Table 4.6, a significant and positive relationship between the frequency of looking ups and vocabulary acquisition scores was found in each individual reading text and in the three reading texts in spite of the weak correlation ($r = .344, .357, .409$ and $.414$ respectively, $p < 0.01$). As with the vocabulary retention scores, the correlation was rather weak even with a positive, significant relationship ($r = .280$, $p < 0.05$). Apart from reading text 2, there was a

significant relationship but a weak correlation between the frequency of looking ups and vocabulary retention scores in the other two reading texts (Text 1, $r = .369$; Text 3, $r = .382$, $p < 0.01$). This means that the frequency of unfamiliar words looked up has a positive relationship with the level of the students' scores on vocabulary acquisition and retention. Therefore, it can be said that there is a tendency for a great number of looking ups to be related to a high level of vocabulary acquisition and retention.

In brief, the current study found that not only the relationship between the number of words looked up and the scores on immediate and delayed vocabulary tests, but also the relationship of the frequency of looking ups with performance on the immediate and delayed vocabulary tests were positive and significant although there was a weak relationship between these variables.

4.2.3 The Comparison of Levels of Vocabulary Acquisition with Retention of Different Look up Types

4.2.3.1 Distribution of Look up Types

This study intended to investigate the effects of look up behavior on vocabulary acquisition and retention. In order to determine the look up behavior of the subjects, the study was based on a within subjects design that allowed all subjects to access all look up options provided by the CALL reading package. The subjects could access any look up option as many times as they wished. Then, the subjects were classified into look up types according to their look up behavior. Table 4.7 shows distribution of look up types.

Table 4.7 Distribution of Look up Types

No. of students	Look up types	Look up behavior	No. of students	Percentage
N = 73	L1	Thai	40	54.80%
	L1+	Thai + sound	26	45.20%
		Thai + sound + Eng.	2	
		Thai + sound + syn.	1	
		Thai + sound + Eng. + syn. + Ex.	2	
		Thai + Eng.	1	
		Thai + Eng. + syn.	1	

As shown in Table 4.7, the research subjects were classified into two major types by their look up behaviors: L1 and L1+ types. Over half (54.8%) tended to solely choose the meanings in Thai of unknown words whereas almost half (45.2%) chose the meanings in Thai of the words together with related lexical information (English meanings, synonym/antonym, contextual examples of word use, and word pronunciation). This finding indicates that the students rely totally on the meanings in Thai of the words even though a variety of lexical information is available.

4.2.3.2 The Comparison of Levels of Vocabulary Acquisition with Retention of L1 Type

A paired-samples t-test was run for vocabulary acquisition mean scores on immediate vocabulary tests and vocabulary retention mean scores on delayed vocabulary tests of the L1 type to see whether there was any significant difference between vocabulary knowledge acquisition and retention. The results are demonstrated below.

Table 4.8 The Comparison of Levels of Vocabulary Acquisition with Retention of L1 Type

Reading texts	Immediate tests (acquisition)		Delayed tests (retention)		Mean difference	t	Sig. (2 tailed)
	Mean	SD	Mean	SD			
Text 1	6.65	3.14	2.33	1.56	4.32	12.368	.000**
Text 2	10.73	4.32	3.85	2.87	6.88	10.764	.000**
Text 3	12.70	4.77	3.20	2.31	9.50	14.539	.000**
Total	30.08	9.99	9.38	5.66	20.70	17.80	.000**

**Significant at 0.01 level.

With reference to t values in Table 4.8, there are statistically significant differences between vocabulary acquisition level and vocabulary retention level for L1 type ($t = 12.368$, 10.764, 14.539, and 17.80 respectively, $p < 0.01$). These differences indicated that vocabulary knowledge of the students who solely relied on the meanings in Thai of the unfamiliar words decreased significantly two weeks after the reading treatment. Therefore, L1 translation seemed not to aid students in their long-term retention of vocabulary.

4.2.3.3 The Comparison of Levels of Vocabulary Acquisition with Retention of L1+ Type

A paired-samples t-test was used to compare vocabulary acquisition mean scores on immediate vocabulary tests and vocabulary retention mean scores on delayed vocabulary tests of the L1+ type group to see whether there was any significant difference between vocabulary knowledge acquisition and retention. The findings are presented in Table 4.9 below.

Table 4.9 The Comparison of Levels of Vocabulary Acquisition with Retention of L1+ Type

Reading texts	Immediate tests (acquisition)		Delayed tests (retention)		Mean difference	t	Sig. (2 tailed)
	Mean	SD	Mean	SD			
Text 1	7.24	2.29	2.91	1.63	4.33	12.382	.000**
Text 2	11.91	3.23	3.85	2.09	9.82	17.665	.000**
Text 3	12.97	4.52	3.33	3.11	9.64	13.899	.000**
Total	32.12	8.09	10.09	5.47	22.03	19.535	.000**

**Significant at 0.01 level.

As seen in Table 4.9, there are statistically significant differences between vocabulary acquisition level and vocabulary retention level for L1+ type ($t = 12.382$, 17.665, 13.899, and 19.535 respectively, $p < 0.01$). These differences indicated that vocabulary knowledge of the students who selected the meanings in Thai together with related lexical information of the unfamiliar words decreased significantly two weeks after the reading treatment. Therefore, L1 translation together with related lexical information seemed not to aid students in their long-term retention of vocabulary.

4.2.3.4 The Comparison of Vocabulary Acquisition between L1 and L1+ Types

To investigate the effect of look up behavior on vocabulary acquisition levels of the L1 and L1+ types, an independent-samples t-test was performed to see whether both types had different levels of vocabulary acquisition. The results are displayed in Table 4.10.

Table 4.10 The Comparison of Vocabulary Acquisition between L1 and L1+ Types

Reading texts	No. of tested words	L1 (N = 40)		L1+ (N = 33)		Mean difference	t	Sig. (2 tailed)
		Mean	SD	Mean	SD			
Text 1	14	6.65	3.14	7.24	2.29	0.59	-.903	.370
Text 2	17	10.73	4.32	11.91	3.23	1.18	-1.301	.197
Text 3	18	12.70	4.77	12.97	4.52	0.27	-.246	.806
Total	49	30.08	9.99	32.12	8.09	2.04	-.948	.346

Although the acquisition mean scores either of individual or of all the three reading texts obtained by L1+ type were higher than those obtained by L1 type, there was not a significant difference. The results indicate that the vocabulary acquisition levels of L1 and L1+ types are generally the same. Hence, it is quite obvious that look up type does not influence acquisition of word meanings.

4.2.3.5 The Comparison of Vocabulary Retention between L1 and L1+ Types

To further explore the effect of look up behavior on vocabulary retention levels of the L1 and L1+ types, an independent-samples t-test was employed to test if both types had different levels of vocabulary retention. The findings are shown in Table 4.11.

Table 4.11 The Comparison of Vocabulary Retention between L1 and L1+ Types

Reading texts	No. of tested words	L1 (N = 40)		L1+ (N = 33)		Mean difference	t	Sig. (2 tailed)
		Mean	SD	Mean	SD			
Text 1	14	2.33	1.56	2.91	1.63	0.58	-1.562	.123
Text 2	17	3.85	2.87	3.85	2.09	0.00	.003	.998
Text 3	18	3.20	2.31	3.33	3.11	0.13	-.210	.834
Total	49	9.38	5.66	10.09	5.47	0.71	-.546	.587

As seen in table 4.11, the results indicate that there are not any significant differences between the vocabulary retention mean scores of the L1 and L1+ types in any of the individual reading texts nor in the total of all three reading texts. In other words, the two types of look up behavior are homogeneous in terms of vocabulary knowledge two weeks after the treatment. Thus, it is quite clear that look up type does not impact students' long-term retention of word meanings.

In brief, results from the statistical analyses regarding the relationship between look up behavior and the levels of vocabulary acquisition and retention can be summarized as follows: First, there was a weak but positive relationship between the number of words looked up and vocabulary acquisition and retention scores. Second, there was a weak but positive relationship between the frequency of looking ups and vocabulary acquisition and retention scores. Third, students were classified into two main types according to their vocabulary look up behavior: L1 and L1+ and there was no significant difference in vocabulary acquisition and retention scores between L1 and L1+ types.

4.3 The Students' Attitudes towards the Provision of Lexical Information in the CALL Reading Package

Research question 3: What are the students' attitudes towards the provision of lexical information in the CALL reading package?

In order to reveal the students' attitudes towards the provision of lexical information in the CALL reading package, a questionnaire in which the students were asked to respond on a five-point Likert scale ranging from "1"(Strongly disagree) to "5" (Strongly agree) was employed after the students performed delayed vocabulary tests of all three reading texts. It also included an open-ended question asking for students' opinions, comments and suggestions for any aspects of the CALL reading package. The data drawn from the five-point rating scale were calculated for means and ranges in order to interpret the levels of agreement. The results of questionnaire responses will be presented in the following sections:

4.3.1 Attitudes towards Vocabulary Knowledge in Reading Comprehension
4.3.2 Attitudes towards the Provision of Lexical Information
4.3.3 Attitudes towards the Use of Multiple Lexical Information Options Provided
4.3.4 Attitudes towards Types of Lexical Information in Helping Vocabulary Acquisition and Retention
4.3.5 Attitudes towards the CALL Reading Package
4.3.6 Comments and Suggestions for the CALL Reading Package

4.3.1 Attitudes towards Vocabulary Knowledge in Reading Comprehension

The first section of the questionnaire was aimed at finding out the degree of the students' awareness of importance of vocabulary knowledge in reading comprehension. The questionnaire presented five statements on the students' awareness of importance of vocabulary knowledge in reading comprehension and the students were required to indicate their levels of agreement. The results of the responses are presented below.

Table 4.12 Attitudes towards Vocabulary Knowledge in Reading Comprehension

Items	Statements	Mean	Levels of Agreement
1.	Not knowing word meanings is one of the most important problems in my reading comprehension.	4.51	Strongly agree
2.	I need to know every word meaning in a sentence to understand that sentence.	3.27	Moderately agree
3.	I look for the meaning of the words that are necessary for comprehending the reading text.	4.10	Agree
4.	I use a dictionary to get the meanings of unknown words in reading.	4.04	Agree
5.	I guess the meanings of unknown words from the contextual clues in the reading text.	3.70	Agree

According to the data from items 1-5, the means of the students' responses vary between moderately agree and strongly agree (3.27-4.51) under the moderately agree, agree, and strongly agree levels. The students strongly agreed that not knowing word meanings is one of the most important problems in reading comprehension (Mean = 4.51). They agreed that they looked for the meaning of the words that were necessary for comprehending the reading text (Mean = 4.10). They used a dictionary to get the meanings of unknown words in reading (Mean = 4.04) and also guessed the meanings of unknown words from the contextual clues in the reading text (Mean = 3.70). They moderately agreed that they needed to know every word meaning in a sentence to understand that sentence (Mean = 3.27). These results show that the students see vocabulary knowledge as essential for them to cope with their reading task and to develop their reading skills.

4.3.2 Attitudes towards the Provision of Lexical Information

The responses from the items 1.1-1.6 in the second part of the questionnaire were analyzed to reveal students' attitudes towards the provision of lexical information for word learning when they performed reading activities. The students' responses are presented in Table 4.13.

Table 4.13 Attitudes towards the Provision of Lexical Information

1.	The provision of lexical information:	Mean	Levels of Agreement
	1.1 helped you understand the content of reading texts more easily and influenced your reading comprehension	4.47	Strongly agree
	1.2 aroused your interest and motivated you to read	4.08	Agree
	1.3 aroused your interest in learning word meanings and contextual example of word use	4.04	Agree
	1.4 helped you learn vocabulary and reading at the same time	4.21	Strongly agree
	1.5 enabled you to retain acquired vocabulary better	3.66	Agree
	1.6 enabled you to look up word meanings and contextual examples of word use immediately without wasting time	4.21	Strongly agree

As shown in Table 4.13, the means of the students' responses are between 3.66-4.47 ranging from agree to strongly agree. The students strongly agreed that the provision of lexical information for word learning not only helped their understanding of the content of the reading texts, but also influenced their reading comprehension (Mean = 4.47). They also strongly agreed that the provision of lexical information for word learning allowed them to learn vocabulary while they were reading, and enabled them to look up word meanings and contextual example of word use immediately without wasting time (Mean = 4.21 and 4.21 respectively). They agreed that the provision of lexical information for word learning aroused their interest and motivated them to read, and also aroused their interest in learning word meanings and contextual

examples of word use (Mean = 4.08 and 4.04 respectively). They also agreed that the provision of lexical information for word learning enabled them to retain the acquired vocabulary better (Mean = 3.66). These findings indicate that the students show positive attitudes towards the provision of lexical information for word learning.

4.3.3 Attitudes towards the Use of Multiple Lexical Information Options Provided

To see if there was any concern about the use of multiple lexical information options provided, students were given three statements and asked to rate levels of agreement. The responses to questionnaire items 2.1-2.3 were analyzed to indicate the extent of students' concern, which is shown in Table 4.14 below.

Table 4.14 Attitudes towards the Use of Multiple Lexical Information Options Provided

2.	**The use of multiple lexical information options provided:**	**Mean**	**Levels of Agreement**
	2.1 made you worry that you would spend more time reading if you looked up word meanings and other features of words	3.04	Moderately agree
	2.2 did not give you opportunities to practice guessing word meanings from the context?	3.26	Moderately agree
	2.3 made you spend more time in reading and it wasted your time?	2.84	Moderately agree

Regarding the data in Table 4.15, the means of the students' responses are between 2.84-3.26 which is the moderately agree level. The students moderately agreed that learning vocabulary by using multiple lexical information options provided did not give them opportunities to practice guessing word meanings from the context (Mean = 3.26), and made them worry that they would spend more time reading if they looked up word meanings and other features of words (Mean = 3.04). They were also moderate in agreement that consulting multiple lexical information options wasted their time and made them spend more time reading (Mean = 2.84).

The results seem to indicate that the students show moderate concern about learning vocabulary by using multiple lexical information options provided.

4.3.4 Attitudes towards Types of Lexical Information in Helping Vocabulary Acquisition and Retention

Items 3.1-3.5 present each type of lexical information. The students were asked to show their levels of agreement on the types of lexical information that helped them acquire and retain word meanings. The findings are shown in Table 4.15.

Table 4.15 Attitudes towards Types of Lexical Information in Helping Vocabulary Acquisition and Retention

3.	**The following lexical information in CALL reading package helped you acquire vocabulary and retain word meanings.**	**Mean**	**Levels of Agreement**
	3.1 Meaning in Thai	3.75	Agree
	3.2 Meaning in English	3.04	Moderately agree
	3.3 Contextual example of word use	3.11	Moderately agree
	3.4 Synonym/Antonym	3.03	Moderately agree
	3.5 Word pronunciation	3.66	Agree

According to the data from the questionnaire items 3.1-3.5, the means of the students' responses are between 3.03-3.75 ranging from moderately agree and agree levels. The students agreed that meaning in Thai and word pronunciation helped them acquire vocabulary and retain word meanings (Mean = 3.75 and 3.66 respectively). They moderately agreed that meaning in English, contextual example of word use, and synonym/antonym helped them acquire vocabulary and retain word meanings (Mean = 3.04, 3.11 and 3.03 respectively). The findings indicate that students showed more favorable attitudes to the lexical information options providing L1 translation and word pronunciation than those providing meaning in English, synonym/antonym, and contextual examples of word use. These findings also confirm the look up behavior of the students (L1 and L1+) stated earlier in this study (See Table 4.7).

4.3.5 Attitudes towards the CALL Reading Package

The students were asked about their general views about the CALL reading package by rating levels of agreement. The findings were based on the conclusions drawn from questionnaire item 4.1-4.3 and are demonstrated in Table 4.16.

Table 4.16 Attitudes towards the CALL Reading Package

4.	Statements	Mean	Levels of Agreement
	4.1 I liked the CALL reading package.	4.01	Agree
	4.2 The CALL reading package is useful in developing my English vocabulary knowledge.	3.88	Agree
	4.3 I will study this CALL reading package if it is available in the future.	3.86	Agree

The mean of the students' responses ranged within 3.86-4.01 which is under the agree level. The students liked the CALL reading package in general (Mean = 4.01), and considered the package useful in developing their English vocabulary knowledge (Mean = 3.88). They also agreed that they would study this CALL package if it was available in the future (Mean = 3.86). The findings seem to indicate that in general, the students felt satisfied with the CALL reading package and considered using it in the future.

4.3.6 Comments and Suggestions for the CALL Reading Package

At the end of the questionnaire, there was an open-ended question asking for students' additional comments about how they felt about the CALL reading package and what they thought the package should be like. The majority of the students who responded to the questionnaire (49 out of 73 respondents) expressed their opinions. The provided comments and suggestions were summarized in the form of a frequency list as reported in Table 4.17.

Table 4.17 Comments and Suggestions for the CALL Reading Package

Comments and Suggestions	No. of Respondents (N = 49)
1. The CALL reading package helped me enjoy reading and learning vocabulary i.e. it was not boring.	11
2. The package motivated me to learn more because it was a novel thing for me.	6
3. The package helped me gain more vocabulary knowledge and was suitable for vocabulary learning.	6
4. The provision of lexical information for word learning reduced my negative attitudes to reading unseen texts because I was not worried about unknown vocabulary.	3
5. The package helped me improve English proficiency.	3
6. I liked the way of looking up word meanings from look up options because it was faster than using a paper dictionary.	2
7. I liked the word pronunciation option because I could practice pronouncing the word correctly.	2
8. The content of the reading text was interesting.	2
9. The package was suitable for independent study.	2
10. Words in the CALL reading package were not familiar at all.	8
11. A reading text was difficult i.e. I could not fully understand the content of the reading text.	2
12. The reading text contained too much unknown vocabulary.	2
13. The speed of word pronunciation should be slower.	1
14. The CALL reading package should provide look up options for other unknown words.	7

Comments and Suggestions	No. of Respondents (N = 49)
15. The CALL reading package should provide varieties of reading texts e.g. movies, Hollywood superstars, etc. with pictures.	4
16. The CALL reading package should provide more comprehension exercises including vocabulary exercises after reading.	4
17. Learning English through the CALL reading package should be a part of the English course requirement.	2
18. It would be more interesting if I could hear all reading texts.	1

As seen in Table 4.17, 37 out of 49 respondents commented positively on the CALL reading package (items 1-9). Eleven respondents expressed the views that learning English through the CALL reading package was enjoyable. In other words, the CALL reading package was not boring, it helped them enjoy reading and learning vocabulary. Six respondents thought the package was motivating because the package was a novel learning tool for them. They also stated that the package was suitable for vocabulary learning because they gained more vocabulary knowledge after learning the CALL reading package. Three respondents mentioned that the provision of lexical information for word learning reduced their negative attitudes to reading unseen texts because they were not worried about unknown vocabulary and agreed that the package helped them improve English proficiency. A couple of respondents also showed a positive view that the package was suitable for independent study. However, eight respondents complained that vocabulary that appeared in the reading texts was very unfamiliar. As for suggestions for the CALL reading package, seven respondents suggested that the CALL reading package should provide look up options for other words they did not know and a couple viewed that the package should be a part of the English course requirement.

Furthermore, fifteen students participating in this study were interviewed informally according to their look up behavior. There were five L1 students and ten L1+ students interviewed. The students were asked to give reasons for selecting or ignoring look up options. Table 4.18 demonstrates examples of students' reasons.

Table 4.18 Examples of Students' Reasons

Look up options	Reasons for selecting	Reasons for ignoring
Meaning in Thai	- *"I think Thai translation is the best for me to understand texts."* - *"It is easy for reading and understanding."*	-
Meaning in English	- *"I want to compare meanings in English to in Thai for better understanding."* - *"I prepare myself for final exam."* - *"I guess word meanings in English, then I check my understanding in Thai."*	- *"I don't understand when I read the meaning in English."* - *"I think it is time consuming when I look up the meaning in English."* - *"English definitions don't help me comprehend word meanings."*

Look up options	Reasons for selecting	Reasons for ignoring
Synonym/ Antonym & Contextual example of word use	- *"I prepare myself for final exam."* - *"I want to answer questions in exercises correctly."* - *"Synonym enables me to understand texts."* - *My curiosity pushes me to see synonym and / or contextual example of word use."*	- *"I cannot translate."* - *I think this option is less helpful for comprehending texts."* - *"Because of the limitation of time, I ignore clicking on this option."*
Word pronunciation	- *"I want to know how the words are pronounced."* - *"I want to practice pronouncing the words."* - *"Hearing word pronunciation helps me remember word meanings."*	- *"It is fast, I cannot catch it."* - *"Hearing the pronunciation does not help me remember the meanings."*

As shown in Table 4.18, the students gave reasons why they selected the look up options such as, *"I think Thai translation is the best for me to understand texts." "I want to answer questions in exercises correctly."* The following were examples of the students' reasons for ignoring some look up options. *"I think this option is less helpful for comprehending texts." "Because of the limitation of time, I ignore clicking on this option."* It might be said that the students looked up lexical information because they perceived that information was beneficial in comprehending reading texts rather than learning vocabulary.

In brief, the questionnaire results revealed that although students showed concern about using multiple lexical information options provided, they showed positive attitudes to a) importance of vocabulary knowledge in reading comprehension, b) the provision of lexical information for word learning, c) types of lexical information in helping vocabulary acquisition and retention, and d) the CALL reading package.