

CHAPTER 4

RESULTS

This chapter presents the results of the statistical analysis of the collected data. There were two main sections in this chapter. Section 4.1 reports the results of the kinds of vocabulary learning strategies used by JHS students in Taiwan. The frequencies of use of all strategy items are first presented and then the ten most and the ten least often used strategies are listed. Section 4.2 reports the results of the relationship between JHS students' vocabulary learning strategy use and their vocabulary learning achievement. The correlations between JHS students' vocabulary strategy use and their performance on the VATEST are first displayed. Then, the variations in vocabulary strategy use among the students in different scoring groups are presented. Section 4.3 reports the participants' responses to the four further questions which provide more detailed information about the learners' strategy use.

4.1 The Kinds of Vocabulary Learning Strategies Used by JHS Students in Taiwan

This section will report the answer to Research Question 1: **What kinds of vocabulary learning strategies do JHS students in Taiwan use?** Research Question 1 is subdivided into two more specific questions. Section 4.1.1 intends to answer Research Question 1A: **How often do JHS students use vocabulary learning strategies?** Descriptive statistics, including means and standard deviations, are calculated to see the frequencies of overall strategy use, the use of five strategy categories, and the use of each individual strategy item.

Section 4.1.2 intends to answer Research Question 1B: **What are the ten most and the ten least frequently used vocabulary learning strategies?** All of the strategies are ranked in order of frequency of use so as to find out the ten most and ten least frequently used strategies.

4.1.1 How Often do JHS Students Use Vocabulary Learning Strategies?

In reporting the frequency of strategy use, the researcher employs Oxford's (1990, p. 300) key to understanding mean scores on SILL which also uses the 5-point Likert scale. As shown in Table 4.1, the average scores which fall in the range of 3.5-5.0 are defined as high frequency use of learning strategies, the averages in 2.5-3.4 as medium frequency use, and the averages in 1.0-2.4 as low frequency use.

Table 4.1 Oxford's Key to Understanding SILL Averages

Frequency	Range	Description
High Use	4.5 to 5.0	Always or almost always used
	3.5 to 4.4	Usually used
Medium Use	2.5 to 3.4	Sometimes
Low Use	1.5 to 2.4	Generally not used
	1.0 to 1.4	Never or almost never used

4.1.1.1 Frequency of Use: Overall Strategies and the Five Strategy Categories

The mean scores, standard deviations and rank order for overall strategy use and the use of five strategy categories are summarized in Table 4.2.

Table 4.2 Frequency of Use: Overall Strategies and Five Strategy Categories

Strategy Category	N	Mean	SD	Rank	Comment
Determination strategies	141	2.86	0.74	2	Medium use
Social strategies	141	2.44	0.61	5	Low to Medium use
Memory strategies	141	2.56	0.69	4	Medium use
Cognitive strategies	141	2.96	0.72	1	Medium use
Metacognitive strategies	141	2.72	0.72	3	Medium use
Overall Strategies	141	2.68	0.62	N/A	Medium use

The average score of overall strategy use is 2.68 (SD=0.62) which falls in the lower end of "medium-use" range (2.5 to 3.4). This indicates that the participants in the current study do not employ vocabulary learning strategies very frequently. They only "sometimes" use vocabulary learning strategies.

Most of the five strategy categories have means falling within the medium range of 2.5 to 3.4, except social strategies whose mean is edged toward medium use but

does not reach it. The most frequently-used strategy category is Cognitive strategies (M=2.96, SD=0.72), followed by Determination strategies (M=2.86, SD=0.74) > Metacognitive strategies (M=2.72, SD=0.72) > and Memory strategies (M=2.56, SD=0.69). The least frequently-used strategy category is Social strategies (M=2.44, SD=0.61), falling slightly below the range of medium use.

In general, the frequencies of overall strategy use and the use of five strategy categories are medium; that is to say, JHS students are moderate users of vocabulary learning strategies.

4.1.1.2 Frequency of Use: Individual Strategies

In order to obtain a deeper understanding of JHS students' strategy use, the frequency of use of each individual strategy is calculated (see Appendix C). The average scores of individual strategies range from a high of 3.91 to a low of 1.67. 8 out of the 57 strategies (14.04%) fall in high frequency use, 27 out of 57 (47.37%) in medium frequency use, and 22 out of 57 (38.60%) in low frequency use. According to the strategy category, the frequencies of use of individual strategies are going to be presented in detail.

4.1.1.2.1 Determination Strategies

The means, standard deviations and rank order for the 8 determination strategies are shown in Table 4.3.

Table 4.3 Frequency of Use: Determination Strategies

Item No.	Description	N	Mean	SD	Rank	Comment
07	Guess from textual context	141	3.53	1.19	1	High use
03	Analyze affixes and roots	141	3.11	1.19	2	Medium use
14	Electronic Dictionary	141	3.08	1.46	3	Medium use
08	Bilingual Dictionary	141	3.03	1.33	4	Medium use
05	Analyze any available pictures or gestures	136	2.83	1.11	5	Medium use
01	Analyze part of speech	140	2.70	1.02	6	Medium use
10	Bilingualized Dictionary	140	2.59	1.31	7	Medium use
12	Monolingual Dictionary	140	2.03	1.11	8	Low use

Of all determination strategies, one strategy is used at a high frequency, six strategies at a medium frequency and one strategy at a low frequency. The most frequently used strategies is Item 07 “guess from textual context” (M=3.53) which is the only determination strategy reaching to high frequency use. The strategies which come next are Item 03 “analyze affixes and roots” (M=3.11) > Item 14 “electronic dictionary” (M=3.08) > Item 08 “bilingual dictionary” (M=3.03) > Item 05 “analyze any available pictures or gestures” (M=2.83) > Item 01 “analyze part of speech” (M=2.70) > and Item 10 “bilingualized dictionary” (M=2.59). The mean scores of the above strategies all fall in the range of medium frequency use. The least often used determination strategy is Item 12 “monolingual dictionary” (M=2.03) which is the only determination strategy in the level of low frequency use.

The results indicate that when determining a new word’s meaning on their own, the participants show a preference for guessing from contextual clues and then analyzing the internal structure of a word. As for the strategies of consulting dictionaries, they prefer using electronic dictionaries to conventional dictionaries. Among the four dictionary strategies, electronic dictionaries is used most frequently, while bilingualized and monolingual dictionaries are generally least utilized.

4.1.1.2.2 Social Strategies

Among the 10 social strategies, one strategy is rated at high frequency use, four strategies at medium frequency use, and five strategies at low frequency use. Table 4.4 displays the mean, standard deviation and rank order for each social strategy.

The most frequently-used strategy is Item 09 “ask classmates for meaning” (M=3.47) which was slightly above the level of medium frequency use. Four strategies belong to medium frequency use—Item 02 “asking teachers for L1 translation” (M=3.31) > Item 06 “ask teacher for a sentence including the new word” (M=2.79) > Item 13 “ask family for meaning” (M=2.44) > and Item 04 “ask teacher

for paraphrase or synonym of new word” (M=2.43). Half of the social strategies are used at a low frequency, including Item 11 “discover new meaning through group work activity” (M=2.28) > Item 15 “study and practice meaning in a group” (M=2.18) > Item 32 “ask teacher to check the accuracy of vocabulary exercises” (M=2.01) > Item 50 “study and practice words with family” (M=1.83) > and Item 39 “interact with native-speakers” (M=1.67).

Table 4.4 Frequency of Use: Social Strategies

Item No.	Description	N	Mean	SD	Rank	Comment
09	Ask classmates for meaning	139	3.47	1.18	1	High use
02	Ask teacher for an L1 translation	141	3.31	1.13	2	Medium use
06	Ask teacher for a sentence including the new word	140	2.79	1.22	3	Medium use
13	Ask family for meaning	140	2.44	1.21	4	Medium use
04	Ask teacher for paraphrase or synonym of new word	141	2.43	1.10	5	Medium use
11	Discover new meaning through group work activity	141	2.28	1.04	6	Low use
15	Study and practice meaning in a group	141	2.18	0.88	7	Low use
32	Ask teacher to check the accuracy of vocabulary exercises	140	2.01	1.13	8	Low use
50	Study and practice words with family	141	1.83	0.92	9	Low use
39	Interact with native-speakers	141	1.67	1.04	10	Low use

The results reveal that JHS students in Taiwan do not seem to consider the role of social strategies important in vocabulary learning in that half of the social strategies are used quite infrequently. Besides, there is a tendency that the social strategies used for discovering a new word’s meaning are employed more frequently than the social strategies used for studying and practicing the learned word. In other words, the participants are accustomed to asking others’ for information, especially their peers, but they do not like to work with others when studying known vocabulary.

4.1.1.2.3 Memory Strategies

The means, standard deviations and rank order for the 21 memory strategies are summarized in Table 4.5. In the category of memory strategies, two strategies are used at a high frequency, eleven strategies at a medium frequency, and eight strategies at a low frequency.

Table 4.5 Frequency of Use: Memory Strategies

Item No.	Description	N	Mean	SD	Rank	Comment
38	Study the sound of a word	140	3.71	1.15	1	High use
37	Study the spelling of a word	141	3.53	1.25	2	High use
49	Remember the word's part of speech	139	3.06	1.21	3	Medium use
21	Associate the word with its coordinates	141	2.93	1.12	4	Medium use
48	Remember affixes and roots	141	2.85	1.41	5	Medium use
41	Study the connection between spelling and pronunciation (phonics)	141	2.84	1.30	6	Medium use
29	Associate the word with other words which have similar spellings or sounds	141	2.82	1.16	7	Medium use
42	Say new word aloud while studying	140	2.80	1.35	8	Medium use
54	Learn the words of an idiom together	140	2.69	1.18	9	Medium use
28	Associate the word with other words which have the same Chinese translation	139	2.57	1.13	10	Medium use
45	Use Keyword Method	141	2.54	1.26	11	Medium use
20	Connect word to a personal experience	141	2.52	1.17	12	Medium use
25	Group words together to study them	141	2.50	1.06	13	Medium use
24	Connect the word to its synonyms and antonyms	140	2.35	1.00	14	Low use
17	Image word's meaning	139	2.34	1.18	15	Low use
16	Study word with a pictorial representation of its meaning	141	2.18	1.04	16	Low use
52	Paraphrase the word's meaning	139	2.17	1.15	17	Low use
44	Image word form	140	1.97	0.96	18	Low use
33	Use new word in sentences	140	1.95	1.04	19	Low use
34	Group words together within a storyline	139	1.80	1.07	20	Low use
56	Use physical action when learning a word	139	1.67	0.97	21	Low use

The two strategies used at a high frequency are Item 38 “study the sound of a word” (M=3.71) and Item 37 “study the spelling of a word” (M=3.53) which concern the orthographical or phonological form of a word. This reflects that the participants favor explicitly studying the pronunciation and spelling of a word to facilitate recall.

With regard to the strategies of medium frequency use, most strategies still have something to do with the spelling or sound of a word, such as Item 41 “study the connection between spelling and sound” (M=2.84), Item 29 “associate the word with other words which have similar spellings or sounds” (M=2.82), and Item 42 “say new word aloud while studying” (M=2.80). Some strategies are related to the grammatical or morphological aspect of a word, such as Item 49 “remember the word’s part of speech” (M=3.06) and Item 48 “remember affixes and roots” (M=2.85). Some strategies pertain to associating with related words, such as Item 21 “associate the word with its coordinates” (M=2.93), Item 28 “associate the word with other words which have the same Chinese translation” (M=2.57), and Item 25 “group words together to study them” (M=2.50). Some involve making use of multi-word “chunks” or collocations—Item 54 “learn the words of an idiom together” (M=2.69). Still some are related to imagery techniques, such as Item 45 “use Keyword Method” (M=2.54) and Item 20 “connect word to a personal experience” (M=2.52).

In terms of the strategies of low frequency use, some strategies pertain to imagery and pictures, such as Item 17 “image word’s meaning” (M=2.34), Item 16 “study word with a pictorial representation of its meaning” (M=2.18), and Item 44 “image word form” (M=1.97). Some involve manipulation of meaning, such as Item 24 “connect the word to its synonyms or antonyms” (M=2.35) and Item 52 “paraphrase the word’s meaning” (M=2.17). Some are related to contextualization, i.e. putting words in a meaningful context, such as Item 33 “use new word in sentences” (M=1.95) and Item 34 “group words together within a storyline” (M=1.80).

The least frequently-used memory strategy involve physical actions, Item 56 “use physical action when learning a word” (M=1.67).

In sum, the results show that when trying to memorize words, the participants pay considerable attention to the form of a word, either orthographical or phonological. In addition, they take notice of the grammatical or morphological aspects of a word. On the other hand, they do not prefer to associating with related words, manipulating the meaning of a word, or putting words in meaningful context. The strategies involved imagery, pictures, or physical actions are also used quite infrequently.

4.1.1.2.4 Cognitive Strategies

The means, standard deviations and rank order for the 11 cognitive strategies are presented in Table 4.6. Of all the cognitive strategies, three strategies fit in high frequency use, four strategies in the higher end of medium frequency use, and four strategies in low frequency use.

Table 4.6 Frequency of Use: Cognitive Strategies

Item No.	Description	N	Mean	SD	Rank	Comment
18	Verbal repetition	141	3.91	1.17	1	High use
35	Take notes in class	139	3.78	1.33	2	High use
22	Written repetition	141	3.72	1.25	3	High use
40	Use emphasis techniques to highlight the word	139	3.37	1.29	4	Medium use
47	Use reference books	140	3.33	1.40	5	Medium use
43	Use the vocabulary section in your textbook	137	3.31	1.33	6	Medium use
26	Segment words into syllables when repeating	140	3.10	1.42	7	Medium use
51	Listen to tape of word lists	139	2.29	1.09	8	Low use
55	Keep a vocabulary notebook	139	2.21	1.16	9	Low use
30	Use word lists or flash cards	140	1.91	1.06	10	Low use
53	Put English labels on physical objects	141	1.67	0.92	11	Low use

The top three most frequently-used strategies are Item 18 “verbal repetition” (M=3.91) > Item 35 “take notes in class” (M=3.78) > and Item 22 “written repetition” (M=3.72). The strategies coming next are Item 40 “use emphasis techniques to highlight the word” (M=3.37) > Item 47 “use reference books” (M=3.33) > Item 43 “use the vocabulary section in your textbook” (M=3.31) > and Item 26 “segment words into syllables when repeating” (M=3.10). The strategies used at a low frequency include Item 51 “listen to tape of word lists” (M=2.29) > Item 55 “keep a vocabulary notebook” (M=2.21) > Item 30 “use word lists or flash cards” (M=1.91) > and Item 53 “put English labels on physical objects” (M=1.67).

The results reflect that the participants particularly favor repetition strategies. Verbal as well as written repetition, i.e. repeatedly saying and writing a word over and over again, are used relatively often. Moreover, they like to make use of mechanical means to study vocabulary, such as taking notes in class²⁰ and using emphasis techniques. Although the participants show a preference for ready-made study aids, such as reference books and vocabulary sections of textbooks, they are not very interested in using those study aids which might take their extracurricular time to work on, such as word lists or flash words, listening to tapes of word lists, vocabulary notebooks, and putting labels on physical objects.

4.1.1.2.5 Metacognitive Strategies

The means, standard deviations and rank order for the 7 metacognitive strategies are summarized in Table 4.7. In the category of metacognitive strategies, only one strategy belongs to high frequency use, four strategies to medium frequency use, and two strategies to low frequency use.

²⁰ The strategy “take notes in class” is considered as mechanical means here because students in Taiwan usually do not “create” their own notes. All they have to do is jot down what the teacher say or write.

Table 4.7 Frequency of Use: Metacognitive Strategies

Item No.	Description	N	Mean	SD	Rank	Comment
23	Test oneself with word tests	140	3.60	1.29	1	High use
36	Pay selective attention to words: study words according to their importance or frequency	140	3.28	1.27	2	Medium use
46	Monitor vocabulary learning strategy use	141	2.84	1.14	3	Medium use
19	Use English-language media (songs, movies, newscasts, etc.)	140	2.64	1.16	4	Medium use
57	Continue to study word over time	141	2.47	1.07	5	Medium use
27	Use spaced word practice	139	2.29	0.97	6	Low use
31	Plan vocabulary learning by oneself	140	1.90	0.97	7	Low use

The most frequently-used strategy is Item 23 “test oneself with word tests” (M=3.60), which shows that the participants put great emphasis on self-evaluating their vocabulary learning. The strategies used at a medium frequency consist of Item 36 “pay selective attention to words” (M=3.28) > Item 46 “monitor strategy use” (M=2.84) > Item 19 “use English-language Media” (M=2.64) > and Item 57 “continue to study over time” (M=2.47). The two strategies of low frequency use are Item 27 “use spaced word practice” (M=2.29) and “plan vocabulary learning by oneself” (M=1.90).

The results indicate that the participants are aware of consciously evaluating their own vocabulary learning. In addition, they have a rough idea of paying selective attention to words, i.e. knowing when to study a word and when to skip or pass a word. However, they generally do not know how to take charge of the learning process on their own. For example, they do not actively increase exposure to English through media or plan their own vocabulary learning. Neither do they appear to consider vocabulary learning as a long-term process. For instance, they do not often continue studying words over time or regularly review the learned words.

4.1.2 What Are the Ten Most and the Ten Least Frequently Used Vocabulary Learning Strategies?

After having reported the frequencies of use of overall strategies, the five strategy categories and the individual strategies, this section will list the ten most and the ten least frequently used strategies so as to present a more comprehensive picture of JHS students' use of vocabulary learning strategies. The 57 individual strategies are ranked in order of frequency of use in descending order so as to find out the ten most and the ten least frequently-used strategies.

4.1.2.1 The Ten Most Frequently Used Vocabulary Learning Strategies

Of the ten most frequently-used strategies, there are one determination strategy, one social strategy, two memory strategies, five cognitive strategies, and one metacognitive strategy. In terms of the frequency of use, eight strategies fall in the category of high frequency use and two strategies fall in the higher end of the category of medium frequency use. Table 4.8 lists the ten most frequently-used vocabulary learning strategies.

Table 4.8 The Ten Most Frequently Used Vocabulary Learning Strategies

Item No.	Description	N	Mean	SD	Rank	Category	Comment
18	Verbal repetition	141	3.91	1.17	1	COG	High Use
35	Take notes in class	139	3.78	1.33	2	COG	High Use
22	Written repetition	141	3.72	1.25	3	COG	High Use
38	Study the sound of a word	140	3.71	1.15	4	MEM	High Use
23	Test oneself with word tests	140	3.60	1.29	5	MET	High Use
07	Guess from textual context	141	3.53	1.19	6	DET	High Use
37	Study the spelling of a word	141	3.53	1.25	6	MEM	High Use
09	Ask classmates for meaning	139	3.47	1.18	8	SOC	High Use
40	Use emphasis techniques to highlight the word	139	3.37	1.29	9	COG	Medium Use
47	Use reference books	140	3.33	1.40	10	COG	Medium Use

The most frequently-used strategy is Item 18 “verbal repetition” (M=3.91). The strategies coming next are Item 35 “take notes in class” (M=3.78) > Item 22 “written repetition” (M=3.72) > Item 38 “study the sound of a word” (M=3.71) > Item 23 “test oneself with word tests” (M=3.60) > Item 07 “guess from textual context” (M=3.53) > Item 37 “study the spelling of a word” (M=3.53) > Item 09 “ask classmates for meaning” (M=3.47) > Item 40 “use emphasis techniques to highlight the word” (M=3.37) > and Item 47 “use reference books” (M=3.33).

According to the results, it is relatively apparent that the participants show a marked preference for cognitive strategies, because half of the ten most frequently used strategies belong to cognitive strategies. They favor the kinds of cognitive strategies which involve repeating the verbal and written forms of a word. Also, they like to make use of mechanical means to study vocabulary, such as taking notes in class and using highlighting techniques. Besides, the frequently-used memory strategies, i.e. study the sound of a word and study the spelling of word, demonstrates a clearer tendency of the participants’ emphasis on the orthographical and phonological forms of a word. The only metacognitive strategy in the ten most frequently used strategies reveals that the participants often conduct self-test after the vocabulary learning activities have been completed. Finally, the results show that when encountering an unknown word, the participants have a strong affinity for guessing from the contextual clues and asking for classmates’ help.

4.1.2.2 The Ten Least Frequently Used Vocabulary Learning Strategies

Of the ten least frequently-used strategies, there are three social strategies, four memory strategies, two cognitive strategies and one metacognitive strategy. All of the ten least frequently-used strategies belong to the category of low frequency use. Table 4.9 lists the ten least frequently-used vocabulary learning strategies.

Table 4.9 The Ten Least Frequently Used Vocabulary Learning Strategies

Item No.	Description	N	Mean	SD	Rank	Category	Comment
53	Put English labels on physical objects	141	1.67	0.92	1	COG	Low Use
56	Use physical action when learning a word	139	1.67	0.97	1	MEM	Low Use
39	Interact with native-speakers	141	1.67	1.04	1	SOC	Low Use
34	Group words together within a storyline	139	1.80	1.07	4	MEM	Low Use
50	Study and practice words with family	141	1.83	0.92	5	SOC	Low Use
31	Plan vocabulary learning by oneself	140	1.90	0.97	6	MET	Low Use
30	Word lists/ Flash cards	140	1.91	1.06	7	COG	Low Use
33	Use new word in sentences	140	1.95	1.04	8	MEM	Low Use
44	Image word form	140	1.97	0.96	9	MEM	Low Use
32	Ask teacher to check the accuracy of vocabulary exercises	140	2.01	1.13	10	SOC	Low Use

Among the ten least frequently-used strategies, there are three strategies with the lowest mean of 1.67 and thus they are ranked as the top one least-used strategy: Item 53 “put English labels on physical objects” (M=1.67, SD= 0.92), Item 56 “use physical action when learning a word” (M=1.67, SD= 0.97), and Item 39 “interact with native-speakers” (M=1.67, SD=1.04). The following least frequently used strategies are Item 34 “group words together within a storyline” (M=1.80) > Item 50 “study and practice words with family” (M=1.83) > Item 31 “plan vocabulary learning by oneself” (M=1.90) > Item 30 “word lists/ Flash cards” (M=1.91) > Item 33 “use new word in sentences” (M=1.95) > Item 44 “image word form” (M=1.97) > and Item 32 “ask teacher to check the accuracy of vocabulary exercises” (M=2.01).

The results show that the participants seldom employ the social strategies related to studying and practicing vocabulary with others, such as asking teacher to correct their vocabulary exercises, studying and practicing words with family, and interacting with native-speakers. In addition, they pay little attention to the memory strategies

concerning putting words in meaningful context (e.g. sentences or paragraphs), physical actions, and imagery for a word's form. They also infrequently utilize the study aids which are not ready-made, such as word lists, flash cards, or putting labels on objects. Finally, the results indicate that they are relatively dependent learners who do not know how to actively plan their own vocabulary learning.

4.1.3 Summary

Generally speaking, the participants in the current study only moderately employ vocabulary learning strategies. They are not very sophisticated users of vocabulary learning strategies in that the use of overall strategies and the five strategy categories all have means falling within the medium range of 2.5 to 3.4.

The most frequently-used strategy category is cognitive strategies in which Item 18 “verbal repetition” > Item 35 “take notes in class” > and Item 22 “written repetition” are used most frequently, while Item 53 “put English labels on physical objects” is used least frequently.

The second most frequently-used strategy category is determination strategies in which Item 07 “guess from textual context” > Item 03 “analyze affixes and roots” > and Item 14 “electronic dictionary” are used most frequently, while Item 12 “monolingual dictionary” is used least frequently.

The third most frequently-used strategy category is metacognitive strategies in which Item 23 “test oneself with word tests” > Item 36 “pay selective attention to words” > and Item 46 “monitor vocabulary learning strategy use” are used most frequently, while Item 31 “plan vocabulary learning by oneself” is used least frequently.

The second least frequently-used strategy category is memory strategies in which Item 38 “study the sound of a word” > Item 37 “study the spelling of a word” > and Item 49 “remember the word's part of speech” are used most frequently, while Item 56 “use physical action when learning a word” is used least frequently.

The least frequently-used strategy category is social strategies in which Item 09 “ask classmates for meaning” > Item 02 “ask teacher for L1 translation” > and Item 06 “ask teacher for a sentence including the new word” are used most frequently, while Item 39 “interact with native speakers” is used least frequently.

More specifically, the participants use 8 out of the 57 strategies (14.04%) at a high frequency, 27 strategies (47.37%) at a medium frequency, and 22 strategies (38.60%) at a low frequency. This clearly indicates that only a small proportion of the individual strategies are used at a high frequency, while a large proportion of the individual strategies are used at a medium or low frequency. The ten most frequently used strategies have something to do with repetition, note-taking, the orthographical and phonological forms of a word, guessing from context, self-test, and highlighting techniques. The ten least frequently used strategies have something to do with practicing or studying with others, imagine a word’s form, contextualization, physical actions, not-ready-made study aids (such as word lists/flash cards or putting labels on objects), and active planning.

4.2 The Relationship between JHS Students’ Use of Vocabulary Learning Strategies and Their Vocabulary Learning Achievement

This section will report the answer to Research Question 2: **Is there any relationship between JHS students’ use of vocabulary learning strategies and their vocabulary learning achievement?** Research Question 2 is subdivided into two more specific questions. Section 4.2.1 intends to answer Research Question 2A: **Does JHS students’ performance on the vocabulary achievement test correlate significantly with their vocabulary learning strategy use?** Pearson product-moment correlations are conducted so as to find out whether the correlations between JHS learners’ vocabulary strategy use and their performance on the VATEST are statistically significant.

Section 4.2.2 intends to answer Research Question 2B: **What are the variations in the use of vocabulary learning strategies among the students with different levels of vocabulary learning achievement?** One-way ANOVA is carried out to see if there are any significant differences in strategy use among the students with three different levels of vocabulary learning achievement. The Scheffé post hoc test is then adopted to determine where specific significant differences lay (i.e. between which of the three vocabulary learning achievement levels).

4.2.1 Does JHS Students' Performance on the Vocabulary Achievement Test Correlate Significantly with Their Vocabulary Learning Strategy Use?

The correlations between the performance on the VATEST and the use of vocabulary learning strategies are examined from the following three aspects: overall strategy use, the use of five strategy categories, and the use of 57 individual strategies.

4.2.1.1 Correlations between the VATEST Scores and The Use of Overall Strategies and Five Strategy Categories

The correlations between the performance on the VATEST and the use of overall strategies and five strategy categories are summarized in Table 4.10.

Table 4.10 Correlations between the VATEST Scores and the Use of Overall Strategies and Five Strategy Categories

Strategy Category	VATEST		
	Pearson Correlation	Sig. (2-tailed)	N
Determination strategies	0.380**	0.000	141
Social strategies	0.196*	0.020	141
Memory strategies	0.340**	0.000	141
Cognitive strategies	0.337**	0.000	141
Metacognitive strategies	0.304**	0.000	141
Overall Strategies	0.357**	0.000	141

Note: * Correlation is significant at the 0.05 level (2-tailed).

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

The results show that overall strategy use is correlated positively with the VATEST scores ($r=0.357$) and the correlation is statistically significant ($p<.01$). This indicates that the higher scores the JHS students get on the VATEST, the more often they employ vocabulary learning strategies.

In addition, the five strategy categories all have positive and significant correlations with the performance on the VATEST. The strongest association is found between the VATEST scores and determination strategies ($r= 0.380$, $p<.01$), followed by memory strategies ($r=0.340$, $p<.01$) > cognitive strategies ($r=0.337$, $p<.01$) > and metacognitive strategies ($r=0.304$, $p<.01$). Social strategies ($r=0.196$, $p<.05$), the only category whose significance is at the 0.05 level, has the weakest association with the VATEST scores. The results reveal that the JHS students who score higher on the VATEST tend to employ each of the five strategy categories more frequently.

4.2.1.2 Correlations between the VATEST Scores and Individual Strategy Use

Among the 57 strategy items, 32 strategies are correlated positively and significantly with the performance on the VATEST. Table 4.11 shows the strategy items that have positive and significant correlations with the VATEST scores.

Table 4.11 Strategies Correlated Positively and Significantly with the VATEST Scores

Item No.	Description	VATEST Scores		
		Pearson Correlation	Sig. (2-tailed)	N
Determination Strategies				
01	Analyze part of speech	0.226**	.007	140
03	Analyze affixes and roots	0.256**	.002	141
07	Guess from textual context	0.527**	.000	141
08	Bilingual Dictionary	0.352**	.000	141
14	Electronic Dictionary	0.236**	.005	141
Social Strategies				
09	Ask classmates for meaning	0.281**	.001	139
13	Ask family for meaning	0.169*	.046	140
39	Interact with native-speakers	0.213*	.011	141

Table 4.11 Strategies Correlated Positively with the VATEST Scores (Continued)

Item No.	Description	VATEST Scores		
		Correlation	Sig.	N
Memory Strategies				
20	Connect word to a personal experience	0.315**	.000	141
21	Associate the word with its coordinates	0.230**	.006	141
24	Connect the word to its synonyms and antonyms	0.230**	.006	140
25	Group words together to study them	0.248**	.003	141
28	Associate the word with other words which have the same Chinese translation	0.275**	.001	139
37	Study the spelling of a word	0.308**	.000	141
38	Study the sound of a word	0.315**	.000	140
41	Study the connection between spelling and pronunciation (phonics)	0.336**	.000	141
42	Say new word aloud while studying	0.333**	.000	140
45	Use Keyword Method	0.234**	.005	141
48	Remember affixes and roots	0.270**	.001	141
49	Remember the word's part of speech	0.412**	.000	139
54	Learn the words of an idiom together	0.273**	.001	140
Cognitive Strategies				
18	Verbal repetition	0.334**	.000	141
22	Written repetition	0.300**	.000	141
26	Segment words into syllables when repeating	0.489**	.000	140
35	Take notes in class	0.189*	.026	139
43	Use the vocabulary section in your textbook	0.454**	.000	137
47	Use reference books	0.397**	.000	140
Metacognitive Strategies				
19	Use English-language media (songs, movies, newscasts, etc.)	0.237 **	.005	140
23	Test oneself with word tests	0.307 **	.000	140
27	Use spaced word practice	0.201 *	.018	139
36	Selective attention: study word according to their importance or frequency	0.249 **	.003	140
46	Monitor vocabulary learning strategy use	0.211 *	.012	141

Note: * Correlation is significant at the 0.05 level (2-tailed).

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

5 out of 8 determination strategies are correlated positively and significantly with the VATEST scores. There are three strategies related to guessing from available information: Item 01 “analyze part of speech,” Item 03 “analyze affixes and roots, and Item 07 “guess from textual context.” The other two strategies have something to do with consulting dictionaries: Item 08 “bilingual dictionary” and Item 14 “electronic dictionary.” It is worth to note that the relationship between Item 07 “guess from textual context” and the VATEST scores ($r=0.527$, $p<.01$) appears to be the strongest among all the individual strategies.

3 out of 10 social strategies have significantly positive correlations with the VATEST scores. There are two strategies concerning asking others for information: Item 09 “ask classmates for meaning” and Item 13 “ask family for meaning.” The other one involves interacting with others: Item 39 “interact with native-speakers.” It is interesting to note that although the JHS students seldom have chances to interact with native-speakers, the correlation results demonstrate that this strategy is strongly related with the students’ vocabulary learning achievement.

13 out of 21 memory strategies reveal significantly positive correlations with the VATEST scores. There are four strategies pertaining to explicitly working on the orthographical or phonological forms of the target word: Item 37 “study the spelling of a word,” Item 38 “study the sound of a word,” Item 41 “study the connection between spelling and pronunciation,” and Item 42 “say new word aloud.” Two strategies are related to remembering the morphemes or grammatical features of a word: Item 48 “remember affixes and roots” and Item 49 “remember the word’s part of speech.” Four strategies involve associating with meaning-related words: Item 21 “associate the word with its coordinates,” Item 24 “connect the word to its synonyms and antonyms,” Item 25 “group words together to study them,” and Item 28 “associate the word with other words which have the same Chinese translation.” Two strategies

involve making use of imagery techniques: Item 45 “use Keyword Method” and Item 20 “connect word to a personal experience.” One strategy have something to do with multi-word ‘chunks’: Item 54 “learn the word of an idiom together.”

6 out of 11 cognitive strategies are correlated positively and significantly with the VATEST scores. There are three strategies related to practicing repeatedly: Item 18 “verbal repetition,” Item 22 “written repetition,” and Item 26 “segment words into syllables while repeating.” The other three strategies involve using ready-made “study aids”: Item 35 “take notes in class,” Item 43 “use the vocabulary section in your textbook,” and Item 47 “use reference books.” It is interesting to note that although the strategy, Item 26 “segment words into syllables” (M=3.10), is only used at a medium frequency, its connection with the performance on the VATEST seems to be very strong ($r=0.489$, $p<.01$), ranked second of all the individual strategies.

5 out of 7 metacognitive strategies have significantly positive correlations with the VATEST scores. There is one strategy involving increasing exposure to words: Item 19 “use English-language media.” On strategy concern self-evaluation: Item 23 “test oneself with word tests” and one strategy concern self-monitoring: Item 46 “monitor vocabulary learning strategy use.” Another strategy has something to do with organizing regular review: Item 27 “use spaced word practice.” The other strategy is related to selective attention: Item 36 “study word according to their importance or frequency.”

To sum up, there is a tendency that the strategies related to guessing from available information, consulting dictionaries, asking others for information, orthographical and phonological forms, morphological and grammatical features, sense (meaning) relationship and collocations, self-organization and self-evaluation have positive and significant correlation with the performance on the VATEST. The correlation results imply that for one thing, the students who score higher on the

VATEST tend to employ a variety of vocabulary learning strategies more frequently; for another, the frequent use of different kinds of strategies appears to help students get higher scores on the VATEST.

On the contrary, among the 57 individual strategies, there are 6 strategies correlated negatively with the VATEST scores, as shown in Table 4.12.

Table 4.12 Strategies Correlated Negatively with the VATEST Scores

Item No.	Description	VATEST Scores		
		Pearson Correlation	Sig. (2-tailed)	N
Determination Strategies				
12	Monolingual dictionary	-0.053	0.534	140
Social Strategies				
15	Study and practice meaning in a group	-0.095	0.265	141
Memory Strategies				
56	Use physical action when learning a word	-0.175*	0.040	139
Cognitive Strategies				
30	Word lists/Flash cards	-0.076	0.375	140
53	Put English labels on physical objects	-0.180*	0.032	141
55	Keep a vocabulary notebook	-0.172*	0.043	139

Note: * Correlation is significant at the 0.05 level (2-tailed).

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

Three out of the six strategies have significantly negative correlations with the VATEST scores: Item 56 “use physical action when learning a word” ($r=-0.175$, $p<.05$), Item 53 “put English labels on physical objects” ($r=-0.180$, $p<.05$), and Item 55 “keep a vocabulary notebook” ($r=-0.172$, $p<.05$). The results indicate that the higher scores the students get on the VATEST, the less often they use the strategies related to physical actions, labeling physical objects, and vocabulary notebooks. The other three strategies have negative correlations with the scores on the VATEST but do not reach statistical significance: Item 12 “monolingual dictionary,” Item 15 “study and practice meaning in a group,” and Item 30 “word lists/ flash cards.”

4.2.2 What are the Variations in Vocabulary Learning Strategy Use among the Students with Different Levels of Vocabulary Learning Achievement?

One-way ANOVA is conducted to identify whether there are any significant differences in vocabulary strategy use among the students with different levels of vocabulary learning achievement. In the case, the levels of vocabulary learning achievement serve as the independent variable and the mean scores for the overall strategy use, the five strategy categories, and each of the individual strategies serve as the dependent variables.

According to the scores on the VATEST, the participants are classified into the three different groups—the High-scoring, Mid-scoring, and Low-scoring groups. The High-scoring group (N=40) is composed of students who get the top one-third of the VATEST scores, ranging from 14 to 20; the Mid-scoring group (N=52) include students who get the medium one-third of the VATEST scores, ranging from 8 to 13; and the Low-scoring group (N=49) comprise students who get the bottom one-third of the VATEST scores, ranging from 1 to 7. With the three levels of vocabulary learning achievement as the independent variable and the VATEST scores as dependent variables, the ANOVA results confirm that there are significant differences in the VATEST scores among the three levels of students ($F [2, 138] = 579.17, p < .01$), as shown in Table 4.13. The post-hoc Scheffé test shows that the High-scoring group gets significantly higher scores than the Mid-scoring group, who in turn gets significantly higher scores than the Low-scoring group.

Table 4.13 ANOVA Results of the Variations in the VATEST Scores

	High (n=40)		Mid (n=52)		Low (n=49)		F Value	Sig.	Comments
	Mean	SD	Mean	SD	Mean	SD			
VATEST	16.58	1.63	10.44	1.72	4.69	1.56	579.17	.00	H>M>L

Note: Comments summarize the results of the Scheffé post hoc test. Only the mean differences between two of the three groups reaching the significance of $p < .05$ are reported.

4.2.2.1 The Variations in the Use of Overall Strategies and Five Strategy Categories

One-way ANOVA is employed to indicate the differences in vocabulary strategy use among the High-scoring, Mid-scoring and Low-scoring groups. Table 4.14 summarizes the variations in the use of overall strategies and five strategy categories. Table 4.14 ANOVA Results of the Variations in Overall Strategy Use and The Use of

Five Strategy Categories

Strategy Category	High (n=40)		Mid (n=52)		Low (n=49)		F Value	Sig.	Comments
	Mean	SD	Mean	SD	Mean	SD			
Determination	3.17	0.62	2.96	0.64	2.50	0.78	11.24	.00	H>L, M>L
Social	2.53	0.53	2.52	0.68	2.25	0.58	3.07	.05	n.s.
Memory	2.87	0.70	2.58	0.55	2.30	0.72	8.47	.00	H>L
Cognitive	3.28	0.54	2.98	0.63	2.69	0.84	7.96	.00	H>L
Metacognitive	2.94	0.65	2.80	0.60	2.45	0.82	5.95	.00	H>L, M>L
Overall	2.94	0.56	2.73	0.51	2.41	0.67	9.33	.00	H>L, M>L

Note: Comments summarize the results of the Scheffé post hoc test. Only the mean differences between two of the three groups reaching the significance of $p < .05$ are reported. The “n.s.” means that the mean differences are not significant.

According to the ANOVA results, overall strategy use varies significantly among the three scoring groups ($F [2, 138]=9.33, P<.01$). The High-scoring group reports the highest frequency of overall strategy use ($M=2.94$); the Mid-scoring group's frequency of use is slightly lower ($M=2.73$); and the Low-scoring group has the lowest frequency of use ($M=2.41$). The post-hoc Scheffé test shows that significant differences in overall strategy use occurs between the High-scoring and Low-scoring groups and between the Mid-scoring and Low-scoring groups, but no significant difference occurs between the High-scoring and Mid-scoring groups (i.e. H>L, M>L).

With regard to the use of five strategy categories, significant differences occurs in the use of four strategy categories: determination strategies ($F [2, 138]=11.24, P<.01$), memory strategies ($F [2, 138]=8.47, P<.01$), cognitive strategies ($F [2, 138]=7.96, P<.01$), and metacognitive strategies ($F [2, 138]=5.95, P<.01$), while no

significant difference is found in the use of social strategies ($F [2, 138]=3.07, P>.05$). The post-hoc Scheffé test reveals that the use of determination and metacognitive strategies have the same pattern with overall strategy use; that is, the Low-scoring group employs the two strategy categories significantly less often than the Mid-scoring and High-scoring groups, but there is no significant variation between the Mid-scoring and High-scoring groups (i.e. $H>L, M>L$). As for the use of memory and cognitive strategies, the Low-scoring students apply the two strategy categories significantly less frequently than the High-scoring students, but no significant difference emerges between the High-scoring and Mid-scoring groups or between the Mid-scoring and Low-scoring groups (i.e. $H>L$).

In sum, the results show that students with different levels of vocabulary learning achievement do vary significantly in their use of overall strategies and four strategy categories—determination, memory, cognitive, and metacognitive strategies. The post-hoc Scheffé test shows that the significant variations between the High-scoring and Low-scoring groups are found in the use of overall strategies and all of the four strategy categories. The significant variations between Mid-scoring and Low-scoring groups are only found in overall strategy uses and the use of determination and metacognitive strategies. Nevertheless, no significant variation between the High-scoring and Mid-scoring groups is found in any of these categories.

4.2.2.2 The Variations in the Use of Individual Strategies

To further investigate into the specific differences in vocabulary strategy use, the one-way ANOVA is run for each of the individual vocabulary learning strategies. The results show that there are significant differences among the three scoring groups in their use of 25 out of 57 (43.86%) strategy items, including four determination strategies, one social strategy, twelve memory strategies, five cognitive strategies and three metacognitive strategies. The differences in these strategy items are all positive,

i.e. the students in the higher scoring groups reported more frequent strategy use than the students in the lower scoring groups. According to the strategy category, the variation in each individual strategy use is going to be introduced in detail as follows.

4.2.2.2.1 Determination Strategies

The variation in the use of each determination strategy among the three scoring groups is summarized in Table 4.15.

Table 4.15 ANOVA Results of the Variations in the Use of Determination Strategies

Item No.	Description	High	Mid	Low	F Value	Sig.	Comments
		Mean (SD)	Mean (SD)	Mean (SD)			
01	Analyze part of speech	2.95 (0.92)	2.87 (1.03)	2.33 (1.01)	5.42	.01	H>L, M>L
03	Analyze affixes and roots	3.50 (1.06)	3.19 (1.12)	2.69 (1.26)	5.58	.00	H>L
05	Analyze any available pictures or gestures	3.15 (1.10)	2.63 (1.05)	2.77 (1.13)	2.59	.08	n.s.
07	Guess from textual context	4.28 (0.82)	3.73 (0.93)	2.71 (1.21)	28.00	.00	H>M>L
08	Bilingual Dictionary	3.55 (1.11)	3.17 (1.29)	2.45 (1.32)	9.02	.00	H>L, M>L
10	Bilingualized Dictionary	2.68 (1.27)	2.75 (1.29)	2.35 (1.35)	1.29	.28	n.s.
12	Monolingual Dictionary	1.93 (0.94)	2.08 (1.13)	2.06 (1.21)	0.25	.78	n.s.
14	Electronic Dictionary	3.35 (1.51)	3.23 (1.38)	2.69 (1.46)	2.72	.07	n.s.

Note: Comments summarize the results of the Scheffé post hoc test. Only the mean differences between two of the three groups reaching the significance of $p < .05$ are reported. The “n.s.” means that the mean differences are not significant.

The ANOVA results indicate that the significant variations are found in the use of four determination strategies: Item 01 “analyze part of speech” ($F [2, 138]=5.42$, $P < .05$), Item 03 “analyze affixes and roots” ($F [2, 138]=5.58$, $P < .01$), Item 07 “guess from textual context” ($F [2, 138]=28.00$, $P < .01$) and Item 08 “bilingual dictionary” ($F [2, 138]=9.02$, $P < .01$).

The post-hoc Scheffé test reveals that Item 07 “guess from textual context” is used significantly more frequently by the students in the higher scoring groups; that is to say,

the High-scoring group uses this strategy significantly more often than the Mid-scoring group, who in turn uses it significantly more often than the Low-scoring group (i.e. H>M>L). Item 01 “analyze part of speech” and Item 08 “bilingual dictionary” are used significantly less often by the Low-scoring group than by the Mid-scoring and High-scoring groups, but there is no significant variation between the High-scoring and Mid-scoring groups (i.e. H>L, M>L). The significant variation in Item 03 “analyze affixes and roots” is found only between the High-scoring and Low-scoring groups, while there is no significant variation either between the High-scoring and Mid-scoring groups or between the Mid-scoring and Low-scoring groups (i.e. H>L).

4.2.2.2.2 Social Strategies

The variation in the use of each social strategy among the three scoring groups is presented in Table 4.16.

Table 4.16 ANOVA Results of the Variations in the Use of Social Strategies

Item No.	Description	High	Mid	Low	F Value	Sig.	Comments
		Mean (SD)	Mean (SD)	Mean (SD)			
02	Ask teacher for an L1 translation	3.53 (1.09)	3.37 (1.12)	3.08 (1.17)	1.79	.17	n.s.
04	Ask teacher for paraphrase or synonym of new word	2.63 (1.13)	2.31 (0.96)	2.39 (1.20)	0.99	.37	n.s.
06	Ask teacher for a sentence including the new word	2.93 (1.27)	2.76 (1.19)	2.71 (1.22)	0.35	.71	n.s.
09	Ask classmates for meaning	3.80 (0.99)	3.68 (1.02)	3.00 (1.32)	6.82	.00	H>L, M>L
11	Discover new meaning through group work	2.25 (0.98)	2.48 (1.15)	2.08 (0.93)	1.92	.15	n.s.
13	Ask family for meaning	2.60 (1.17)	2.57 (1.34)	2.14 (1.05)	2.11	.13	n.s.
15	Study and practice meaning in a group	2.03 (0.80)	2.29 (0.87)	2.20 (0.93)	1.04	.35	n.s.
32	Ask Teacher to check the accuracy of vocabulary exercises	1.95 (1.04)	2.16 (1.17)	1.92 (1.17)	0.64	.53	n.s.
39	Interact with native-speakers	1.90 (1.17)	1.67 (1.06)	1.49 (0.87)	1.74	.18	n.s.
50	Study and practice words with family	1.90 (0.96)	1.98 (0.83)	1.61 (0.95)	2.24	.11	n.s.

The ANOVA results indicate that only the use of one social strategy, Item 09 “ask classmates for meaning” ($F [2, 138]=6.82, P<.01$), varies significantly among the three scoring groups. The post-hoc Scheffé test reveals that this strategy is used significantly less frequently by the Low-scoring than by the High-scoring and Mid-scoring groups, but no significant difference is found between the High-scoring and Mid-scoring groups (i.e. $H>L, M>L$).

4.2.2.2.3 Memory Strategies

The variation in the use of each memory strategy among the three scoring groups is summarized in 4.17.

Table 4.17 ANOVA Results of the Variations in the Use of Memory Strategies

Item No.	Description	High	Mid	Low	F Value	Sig.	Comments
		Mean (SD)	Mean (SD)	Mean (SD)			
16	Study word with a pictorial representation	2.18 (1.03)	2.08 (0.95)	2.31 (1.14)	0.61	.54	n.s.
17	Image word's meaning	2.56 (1.39)	2.33 (1.01)	2.16 (1.14)	1.27	.29	n.s.
20	Connect word to a personal experience	3.05 (1.20)	2.40 (1.12)	2.20 (1.06)	6.66	.00	H>M, H>L
21	Associate with its coordinates	3.25 (1.10)	2.87 (0.99)	2.73 (1.22)	2.52	.08	n.s.
24	Connect the word to its synonyms and antonyms	2.65 (1.05)	2.42 (0.98)	2.02 (0.91)	4.76	.01	H>L
25	Group words together to study them	2.83 (1.17)	2.60 (1.01)	2.14 (0.91)	5.17	.01	H>L
28	Associate the word with other words which have same Chinese translation	2.98 (1.12)	2.65 (1.05)	2.15 (1.09)	6.56	.00	H>L
29	Associate the word with other words have similar spellings or sounds	3.15 (1.25)	2.79 (1.05)	2.59 (1.15)	2.64	.07	n.s.
33	Use new word in sentences	2.13 (1.09)	1.98 (1.02)	1.77 (1.02)	1.30	.27	n.s.
34	Group words together within a storyline	1.88 (1.16)	1.75 (0.91)	1.79 (1.17)	0.16	.85	n.s.
37	Study the spelling of a word	3.95 (1.06)	3.65 (1.17)	3.06 (1.33)	6.47	.00	H>L, M>L
38	Study the sound of a word	4.13 (0.94)	3.82 (1.17)	3.27 (1.22)	7.05	.00	H>L, M>L

Table 4.17 The Variations in the Use of Memory Strategies (Continued)

Item No.	Description	High	Mid	Low	F Value	Sig.	Comments
		Mean (SD)	Mean (SD)	Mean (SD)			
41	Study the connection between spelling and pronunciation (phonics)	3.45 (1.32)	2.73 (1.24)	2.45 (1.17)	7.48	.00	H>M, H>L
42	Say new word aloud while studying	3.28 (1.28)	2.98 (1.26)	2.22 (1.31)	8.18	.00	H>L, M>L
44	Image word form	1.93 (1.02)	1.98 (0.83)	2.00 (1.05)	0.07	.93	n.s.
45	Use Keyword Method	2.98 (1.37)	2.58 (1.21)	2.14 (1.12)	5.11	.01	H>L
48	Remember affixes and roots	3.35 (1.37)	2.90 (1.42)	2.39 (1.30)	5.53	.00	H>L
49	Remember the word's part of speech	3.70 (1.11)	3.06 (0.99)	2.52 (1.25)	12.05	.00	H>M, H>L
52	Paraphrase the word's meaning	2.28 (1.18)	2.26 (1.01)	2.00 (1.26)	0.86	.43	n.s.
54	Learn the words of an idiom together	3.15 (1.12)	2.67 (1.19)	2.35 (1.11)	5.44	.01	H>L
56	Use physical action when learning a word	1.48 (0.82)	1.58 (0.67)	1.92 (1.26)	2.72	.07	n.s.

Note: Comments summarize the results of the Scheffé post hoc test. Only the mean differences between two of the three groups reaching the significance of $p < .05$ are reported. The "n.s." means that the mean differences are not significant.

The ANOVA results indicate that the significant variations are found in the use of twelve memory strategies. According to the post-hoc Scheffé test, there are three strategies used significantly more often by the High-scoring group than by the Mid-scoring and Low-scoring groups, but no significant variation occurs between the Mid-scoring and Low-scoring groups (i.e. H>M, H>L). The strategies consist of Item 20 "connect word to a personal experience" ($F [2, 138]=6.66, P<.01$), Item 41 "study the connection between spelling and pronunciation" ($F [2, 138]=7.48, P<.01$), and Item 49 "remember the word's part of speech" ($F [2, 138]=12.05, P<.01$).

Another three strategies concerning the spelling and sound of a word are employed significantly less often by the Low-scoring group than by the High-scoring and Mid-scoring groups, but no significant variation exists between the High-scoring

and Mid-scoring groups (i.e. H>L, M>L). They are Item 37 “study the spelling of a word” ($F [2, 138]=6.47, P<.01$), Item 38 “study the sound of a word” ($F [2, 138]=7.05, P<.01$), and Item 42 “say the word aloud while studying” ($F [2, 138]=8.18, P<.01$).

The other six strategies vary significantly only between the High-scoring and Low-scoring groups, but no significant variation is found either between the High-scoring and Mid-scoring groups or between the Mid-scoring and Low-scoring groups (i.e. H>L). Some strategies are related to association with related words: Item 24 “connect the word to its synonyms and antonyms” ($F [2, 138]=4.76, P<.05$), Item 25 “group words together to study them” ($F [2, 138]=5.17, P<.05$), and Item 28 “associate the word with other words which have the same Chinese translation” ($F [2, 138]=6.56, P<.01$). There is one strategy related to imagery techniques: Item 45 “use Keyword Method” ($F [2, 138]=5.11, P<.05$). Another strategy is related to word parts: Item 48 “remember affixes and roots” ($F [2, 138]=5.53, P<.01$). The other one strategy is related to multi-word “chunks”: Item 54 “learn the words of an idiom together” ($F [2, 138]=5.44, P<.05$).

4.2.2.2.4 Cognitive Strategies

The variation in the use of each cognitive strategy among the three scoring groups is displayed in Table 4.18. The ANOVA results indicate that the significant variations are found in the use of five cognitive strategies: Item 18 “verbal repetition” ($F [2, 138]=9.79, P<.01$), Item 22 “written repetition” ($F [2, 138]=8.25, P<.01$), Item 26 “segment words into syllables when repeating” ($F [2, 138]=17.35, P<.01$), Item 43 “use the vocabulary section in your textbook” ($F [2, 138]=18.00, P<.01$) and Item 47 “use reference books” ($F [2, 138]=13.85, P<.01$). The post-hoc Scheffé test reveals that Item 26 “segment words into syllables when repeating” and Item 43 “use the vocabulary section in your textbook” is used significantly more often by the students in the higher scoring groups; that is to say, the High-scoring group uses this

strategy significantly more often than the Mid-scoring group, who in turn uses it significantly more often than the Low-scoring group (i.e. H>M>L). Item 18 “verbal repetition” and Item 47 “use reference books” are used significantly less frequently by the Low-scoring group than by the Mid-scoring and High-scoring groups, but there is no significant variation between the High-scoring and Mid-scoring groups (i.e. H>L, M>L). The significant variation in Item 22 “written repetition” is found only between the High-scoring and Low-scoring groups, but no significant variation is found between the High-scoring and Mid-scoring groups or between the Mid-scoring and Low-scoring groups (i.e. H>L).

Table 4.18 ANOVA Results of the Variations in the Use of Cognitive Strategies

Item No.	Description	High	Mid	Low	F Value	Sig.	Comments
		Mean (SD)	Mean (SD)	Mean (SD)			
18	Verbal repetition	4.35 (0.83)	4.10 (1.00)	3.37 (1.38)	9.79	.00	H>L, M>L
22	Written repetition	4.25 (0.98)	3.79 (1.19)	3.22 (1.34)	8.25	.00	H>L
26	Segment words into syllables when repeating	4.00 (1.26)	3.06 (1.30)	2.40 (1.25)	17.35	.00	H>M>L
30	Use word lists or flash cards	1.83 (1.11)	1.90 (0.85)	2.00 (1.22)	0.30	.74	n.s.
35	Take notes in class	4.15 (1.03)	3.64 (1.40)	3.63 (1.45)	2.15	.12	n.s.
40	Use emphasis techniques to highlight words	3.45 (1.30)	3.43 (1.22)	3.25 (1.38)	0.34	.71	n.s.
43	Use the vocabulary section in your textbook	4.10 (1.13)	3.35 (1.12)	2.56 (1.31)	18.00	.00	H>M>L
47	Use reference books	4.03 (1.00)	3.47 (1.29)	2.61 (1.47)	13.85	.00	H>L, M>L
51	Listen to tape of word lists	2.45 (0.99)	2.31 (1.01)	2.15 (1.24)	0.87	.42	n.s.
53	Put English labels on physical objects	1.50 (0.75)	1.56 (0.70)	1.92 (1.17)	2.96	.05	n.s.
55	Keep a vocabulary notebook	1.93 (0.89)	2.24 (1.21)	2.42 (1.27)	2.02	.14	n.s.

Note: Comments summarize the results of the Scheffé post hoc test. Only the mean differences between two of the three groups reaching the significance of $p < .05$ are reported. The “n.s.” means that the mean differences are not significant.

4.2.2.2.5 Metacognitive Strategies

The variation in the use of each metacognitive strategy among the three scoring groups is shown in Table 4.19.

Table 4.19 ANOVA Results of the Variations in the Use of Metacognitive Strategies

Item No.	Description	High	Mid	Low	F Value	Sig.	Comments
		Mean (SD)	Mean (SD)	Mean (SD)			
19	Use English-language media (songs, movies, newscasts, etc.)	3.05 (1.18)	2.63 (0.92)	2.33 (1.30)	4.48	.01	H>L
23	Test oneself with word tests	3.93 (1.16)	3.84 (1.10)	3.08 (1.43)	6.62	.00	H>L, M>L
27	Use spaced word practice	2.53 (0.88)	2.34 (0.98)	2.06 (0.99)	2.68	.07	n.s.
31	Plan vocabulary learning by oneself	1.83 (0.96)	2.04 (0.79)	1.81 (1.14)	0.84	.43	n.s.
36	Pay selective attention to words	3.73 (1.30)	3.25 (1.28)	2.94 (1.14)	4.42	.01	H>L
46	Monitor vocabulary learning strategy use	3.05 (1.20)	2.92 (1.03)	2.57 (1.19)	2.20	.11	n.s.
57	Continue to study word over time	2.48 (0.93)	2.56 (1.06)	2.37 (1.20)	0.39	.67	n.s.

Note: Comments summarize the results of the Scheffé post hoc test. Only the mean differences between two of the three groups reaching the significance of $p < .05$ are reported. The “n.s.” means that the mean differences are not significant.

The ANOVA results indicate that the three scoring groups vary significantly in the use of three metacognitive strategies: Item 19 “use English-language media” ($F [2, 138]=4.48, P<.05$), Item 23 “test oneself with word tests” ($F [2, 138]=6.62, P<.01$), and Item 36 “pay selective attention to words” ($F [2, 138]=4.42, P<.05$).

The post-hoc Scheffé test reveals that Item 23 “test oneself with word tests” is used significantly less often by the Low-scoring group than by the Mid-scoring and High-scoring groups, but there is no significant variation between the High-scoring and Mid-scoring groups (i.e. H>L, M>L). The use of the other two strategies, Item 19 “use English-language media” and Item 36 “pay selective attention to words,” vary significantly only between the High-scoring and Low-scoring groups, but no

significant variation is found either between the High-scoring and Mid-scoring groups or between the Mid-scoring and Low-scoring groups (i.e. H>L).

4.2.2.3 A Comparison of the Top Ten Most Frequently Used Strategies among the Three Scoring groups

To see whether there are any differences in the pattern of vocabulary learning strategy use, the ten most frequently-used strategies of the High-scoring, Mid-scoring, and Low-scoring groups are compared, as shown in Table 4.20.

Table 4.20 The Top Ten Most frequently Used Strategies of the Three Scoring groups

Rank	High-scoring Group	Mid-scoring Group	Low-scoring Group
1	COG 18: Verbal repetition (M=4.34, SD=0.83)	COG 18: Verbal repetition (M=4.10, SD=1.00)	COG 35: Take notes in class (M=3.63, SD=1.45)
2	DET 7: Guess from textual context (M=4.28, SD=0.82)	MET 23: Test oneself with word tests (M=3.84, SD=1.10)	COG 18: Verbal repetition (M=3.37, SD=1.38)
3	COG 22: Written repetition (M=4.25, SD=0.98)	MEM 38: Study the sound of a word (M=3.82, SD=1.11)	MEM 38: Study the sound of a word (M=3.27, SD=1.22)
4	COG 35: Take notes in class (M=4.15, SD=1.03)	COG 22: Written repetition (M=4.25, SD=0.98)	COG 40: Use emphasis techniques (M=3.25, SD=1.38)
5	MEM 38: Study the sound of a word (M=4.13, SD=0.94)	DET 7: Guess from textual context (M=3.73, SD=0.93)	COG 22: Written repetition (M=3.22, SD=1.34)
6	COG 43: Use the vocabulary section in your textbook (M=4.10, SD=1.13)	SOC 9: Ask classmates for meaning (M=3.68, SD= 1.02)	MET 23: Test oneself with word tests (M=3.08, SD=1.43)
7	COG 47: Use reference books (M=4.03, SD=1.00)	MEM 37: Study the spelling of a word (M=3.65, SD=1.17)	SOC 2: Ask teacher for an L1 translation (M=3.08, SD= 1.17)
8	COG 26: Segment words into syllables (M=4.00, SD=1.26)	COG 35: Take notes in class (M=3.64, SD=1.40)	MEM 37: Study the spelling of a word (M=3.06, SD=1.33)
9	MEM 37: Study the spelling of a word (M=3.95, SD=1.06)	COG 47: Use reference books (M=3.47, SD=1.29)	SOC 9: Ask classmates for meaning (M=3.00, SD= 1.32)
10	MET 23: Test oneself with word tests (M=3.93, SD=1.16)	COG 40: Use emphasis techniques (M=3.43, SD=1.22)	MET 36: Pay selective attention (M=2.94, SD=1.14)

In terms of the strategy categories, the top ten most frequently-used strategies of the High-scoring group include six cognitive strategies, two memory strategies, one determination strategy, and one metacognitive strategy, but no social strategy. The top ten most frequently-used strategies of the Mid-scoring group consist of five cognitive strategies, two memory strategies, one determination strategy, one metacognitive strategy, and one social strategy. The top ten most frequently-used strategies of the Low-scoring group includes four cognitive strategies, two memory strategies, two metacognitive strategies, and two social strategies, but no determination strategy. The results show that among the top ten frequently-used strategies, the High-scoring group employs more cognitive strategies than the Mid-scoring group, who in turn employs more cognitive strategies than the Low-scoring group. Moreover, both the High-scoring and Mid-scoring groups report one determination strategy as the top ten frequently used strategies, but the Low-scoring group does not. The Low-scoring group uses more social strategies than the Mid-scoring group; however, the High-scoring group does not include any social strategies in the top ten frequently used strategies.

In terms of individual strategies, the top ten most frequently used strategies of the High-scoring group is ranked as follows: Item 18 “verbal repetition” > Item 7 “guess from textual context” > Item 22 “written repetition” > Item 35 “take notes in class” > Item 38 “study the sound of a word” > Item 43 “use the vocabulary section in your textbook” > Item 47 “use reference books” > Item 26 “segment words into syllables when repeating” > Item 37 “study the spelling of a word” > and Item 23 “test oneself with word tests.” The top ten most frequently used strategies of the Mid-scoring group is ranked as follows: Item 18 “verbal repetition” > Item 23 “test oneself with word tests” > Item 38 “study the sound of a word” > Item 22 “written repetition” > Item 7 “guess from textual context” > Item 9 “ask classmates for

meaning” > Item 37 “study the spelling of a word” > Item 35 “take notes in class” > Item 47 “use reference books” > and Item 40 “use emphasis techniques to highlight words.” The top ten most frequently used strategies of the Low-scoring group is ranked as follows: Item 35 “take notes in class” > Item 18 “verbal repetition” > Item 38 “study the sound of a word” > Item 40 “use emphasis techniques to highlight words” > Item 22 “written repetition” > Item 23 “test oneself with word tests” > Item 2 “ask teacher for an L1 translation” > Item 37 “study the spelling of a word” > Item 9 “ask classmates for meaning” > and Item 36 “pay selective attention to words.” Among the top ten most frequently used strategies, the three scoring groups have six strategies in common: Item 18 “verbal repetition,” Item 22 “written repetition,” Item 23 “test oneself with word tests,” Item 35 “take notes in class,” Item 37 “study the spelling of a word,” and Item 38 “study the sound of a word.” Although all of the three scoring groups report verbal repetition and written repetition as the most frequently-used strategies, only the High-scoring group segments words into syllables while repeating. Another difference is that both the High-scoring and Mid-scoring groups employ guessing from the context to find out an unknown word’s meaning, while the Low-scoring group does not. Instead, the Low-scoring group relies more on asking teachers for an L1 translation or asking classmates for meaning. In addition, the High-scoring and Mid-scoring group often utilize either the vocabulary section in the textbook or reference books to help them build up vocabulary, but the Low-scoring does not.

4.2.3 Summary

Both the results of Pearson product-moment correlations and the one-way ANOVA demonstrate that there is a strong relationship between JHS students’ use of vocabulary learning strategies and their vocabulary learning achievement.

4.2.3.1 The Results of the Pearson Product-moment Correlations

According to the Pearson product-moment correlations, JHS learners' vocabulary learning achievement is correlated positively and significantly with overall strategy use and the use of five strategy categories. Among the five strategy categories, the vocabulary learning achievement has the strongest correlation with determination strategies, but the weakest correlation with social strategies.

In terms of individual strategies, JHS learners' vocabulary learning achievement has significantly positive associations with 32 out of 57 strategies (56.14%). The higher scores the students get on the VATEST, the more frequently they use the vocabulary strategies related to guessing from available information, consulting dictionaries, asking others for information, interacting with native-speakers, orthographical and phonological forms, morphological and grammatical features, sense (meaning) relationship, collocations, using ready-made study aids, English-language media, regular review, self-evaluation, and selective attention.

On the other hand, only 3 strategies (5.26%) show significantly negative associations with learners' vocabulary learning achievement. The higher scores the students get on the VATEST, the less often they use the strategies related to physical actions, putting labels on physical objects, and vocabulary notebooks.

In brief, the results of the Pearson product-moment correlations imply that the students with better vocabulary learning achievement employ not only a greater number of strategies but also use them much more frequently.

4.2.3.2 The Results of the One-way ANOVA

The one-way ANOVA not only show that JHS students with different levels of vocabulary learning achievement do vary greatly in their use of vocabulary learning strategies, but also explicitly indicate where the differences occur. The results demonstrate that there are significant variations in overall strategy use and the use of

four strategy categories—determination, memory, cognitive, and metacognitive, but not in the use of social strategies. The post-hoc Scheffé test indicate that significant variations are mostly found when the Low-scoring group is compared with the High-scoring or Mid-scoring group, but no significant variation occurs between the High-scoring and Mid-scoring students. More specifically, the significant variations between the High-scoring and Low-scoring groups are found in the use of overall strategies and all of the four strategy categories. And the significant variations between Mid-scoring and Low-scoring groups are found in overall strategy use and the use of determination and metacognitive strategies. Nevertheless, no significant variation between the High-scoring and Mid-scoring groups is found in any of these categories.

Among the 57 individual strategies, significant variations are found in the use of 25 strategy items among the three scoring groups. Three strategies, Item 7 “guess from textual context,” Item 26 “segment words into syllables when repeating,” and Item 43 “use the vocabulary section in your textbook,” are used significantly more often by the students in the higher scoring groups; that is, the High-scoring group uses these strategies significantly more often than the Mid-scoring group, who in turn uses them significantly more often than the Low-scoring group (i.e. $H > M > L$).

Three strategies, Item 20 “connect word to a personal experience,” Item 41 “study the connection between spelling and pronunciation,” and Item 49 “remember the word’s part of speech,” are used significantly more often by the High-scoring group than by the Mid-scoring and Low-scoring groups, but no significant variation occurs between the Mid-scoring and Low-scoring groups (i.e. $H > M$, $H > L$).

Nine strategies are used significantly less often by the Low-scoring group than by the Mid-scoring and High-scoring groups, but no significant difference is found between the High-scoring and Mid-scoring group (i.e. $H > L$, $M > L$). The strategies

include Item 01 “analyze part of speech,” Item 08 “bilingual dictionary,” Item 09 “ask classmates for meaning,” Item 18 “verbal repetition,” Item 23 “test oneself with word tests,” Item 37 “study the spelling of a word,” Item 38 “study the sound of a word,” Item 42 “say new word aloud while studying,” and Item 47 “use reference books.” It was interesting to note that the Low-scoring group seems to pay much less attention to a word’s pronunciation than the top two scoring groups.

The use of ten strategies vary significantly only between the High-scoring and Low-scoring groups, but no significant variation is found between the adjacent groups, that is, either between the High-scoring and Mid-scoring groups or between the Mid-scoring and Low-scoring groups (i.e. H>L). The strategies comprised of Item 03 “analyze affixes and roots,” Item 19 “use English-language media,” Item 22 “written repetition,” Item 24 “connect the word to its synonyms and antonyms”, Item 25 “group words together to study them”, Item 28 “associate the word with other words which have the same Chinese translation,” Item 36 “pay selective attention to words,” Item 45 “use Keyword Method,” Item 48 “remember affixes and roots,” and Item 54 “learn the words of an idiom together.” It seems that most of the strategies have something to do with a word’s meaning and word parts.

To sum up, the one-way ANOVA results confirm the results of the Pearson correlations that most of the vocabulary learning strategies are strongly related to learners’ vocabulary learning achievement. Besides, the results provide more detailed information that most of the significant differences in the use of vocabulary learning strategies occur when the Low-scoring group is compared with the High-scoring or Mid-scoring groups.

4.3 The Responses to the Further Questions

This section will report the results of the participants’ responses to the further questions which aim to elicit more detailed information about their strategy use. The

participants are asked to answer the following four questions: (1) how they learn vocabulary learning strategies; (2) why they often choose to employ some particular strategies; (3) which strategies listed on the questionnaire they want to learn most; and (4) whether there are other strategies that are not listed on the questionnaire.

4.3.1 The Sources of the Participants' Strategy Learning

As for how JHS students learn to use vocabulary learning strategies, the participants are provided with the following six options: (1) from reading books; (2) from school teachers; (3) from cram school teachers; (4) from parents; (5) from classmates; and (6) others. They are allowed to make multiple choices. Table 4.15 presents the participants' responses to their sources of strategy learning.

Table 4.21 The Sources of the Participants' Strategy Learning

Item No.	Description	Number	Percentage	Rank
1	From reading books	75	53.19%	2
2	From school teachers	104	73.76%	1
3	From cram school teachers	71	50.35%	3
4	From parents	16	11.35%	6
5	From classmates	62	43.97%	4
6	Others	25	17.73%	5

Among the 141 participants, most students respond that they learn vocabulary learning strategies from school teaches (N=104, 73.76%). More than half of the participants mention that they learn vocabulary learning strategies by reading books (N=75, 53.19%). Some students respond that they learn strategies from their cram school teachers (N=71, 50.35%) or from their classmates (N=62, 43.97%). However, only a small number of students answer that they learn strategies from their parents (N= 16, 11.35%) or from other sources (N=25, 17.73%), such as “watching TV programs” or “inventing by themselves.” The results reveal that teachers play an important role in enhancing the participants' strategy learning.

4.3.2 The Reasons for the Participants' Strategy Choice

As for why JHS students often choose to employ some particular strategies, the participants are given the following six options: (1) because of teachers' encouragement; (2) because of peer s' influence; (3) because of convenience and ease of employment; (4) because of learning efficiency; (5) because of longer retention; and (6) others. They are allowed to make multiple choices. Table 4.15 summarizes the participants' responses to the reasons of their strategy choice.

Table 4.22 The Reasons for the Participants' Strategy Choice

Item No.	Description	Number	Percentage	Rank
1	Because of teachers' encouragement	17	12.06%	5
2	Because of peers' influence	20	14.18%	4
3	Because of convenience or ease of employment	118	83.69%	1
4	Because of learning efficiency	83	58.87%	2
5	Because of longer retention	74	52.48%	3
6	Others	6	4.26%	6

Among the 141 participants, most students respond that they choose to use some particular vocabulary learning strategies mainly because they are easy and convenient to employ (N=118, 83.69%). More than half of the students reply that their reason for strategy choice is because the strategies could help them learn more efficiently (N=83, 58.87%) or because the strategies could help them retain words longer (N=74, 52.48%). Only a small number of the participants answer that they choose to use some strategies because of other people's effect, such as because of peers' influence (N=20, 14.18%) or because of teachers' encouragement (N=17, 12.06%). Although a few students select other reasons for strategy choice, they do not describe them in detail. The results indicate that it is the strategy itself that influence the participants' choices. In order words, the participants select to use the strategy mainly because of its convenience, efficiency, and effectiveness.

4.3.3 The Strategies that the Participants Want to Learn Most

As for which strategies JHS students want to learn most, the participants are asked to choose from the strategies listed on the questionnaire and write down their item numbers. Table 4.15 lists the top ten strategies that the participants want to learn most.

Table 4.23 The Strategies that the Participants Want to Learn Most

Rank Order	Item No.	Description	Strategy Category	Number	Percentage
1	39	Interact with native-speakers	SOC	16	11.35%
2	19	Use English-language media (songs, movies, newscasts, etc.)	MET	14	9.93%
3	1	Analyze part of speech	DET	12	8.51%
4	18	Verbal repetition	COG	12	8.51%
5	2	Ask teacher for an L1 translation	SOC	10	7.09%
5	14	Electronic Dictionary	DET	10	7.09%
7	27	Use spaced word practice	MET	9	6.38%
8	20	Connect word to a personal experience	MEM	8	5.67%
9	24	Connect the word to its synonyms and antonyms	MEM	8	5.67%
10	31	Plan vocabulary learning by oneself	MET	7	4.96%
10	34	Group words together within a storyline	MEM	7	4.96%
10	44	Image word form	MEM	7	4.96%
10	55	Keep a vocabulary notebook	COG	7	4.96%

The participants express a strong desire to learn the strategies related to increasing natural or authentic input, such as Item 39 “interact with native speaker” and Item 19 “use English-language media.” They also want to learn the strategies which can help them discover a new word’s meaning through Item 1 “analyze part of speech,” Item 2 “ask teachers for L1 translation,” and Item 14 “electronic dictionary.” Besides, they hope to learn the strategies which can help them consolidate learned

words through oral repetition or through deeper processing, such as Item 20 “connect word to a personal experience,” Item 24 “connect the word to its synonyms and antonyms,” Item 34 “group words together within a storyline,” and Item 44 “image word form.” In addition, they long for learning the strategies related to approaching vocabulary learning persistently by Item 27 “use spaced word practice” or Item 55 “keep a vocabulary notebook” and taking charge of their own learning by Item 31 “plan vocabulary learning by oneself.”

4.3.4 Additional Vocabulary Learning Strategies

The participants are encouraged to write down any additional strategies which are not listed on the questionnaire. 21 students (14.89%) give their responses. Most strategies mentioned by the students are variations of the strategies already included on the questionnaire. For example, the participants offer detailed ways to Item 19 “use English through media,” such as by learning on-line, by studying English lyrics, by reading English advertisements or labels, by watching English cartoons or programs, and by reading English newspapers or magazines. They also mention the strategies related to increasing authentic input, such as learning words through extensive reading, interacting with native-speakers, or studying abroad. Moreover, they offer three additional ways for mechanical repetition, including using verbal and written repetition at the same time, repeating after CD and constant review as well as practice.

4.3.5 Summary of the Participants’ Responses to Further Questions

The participants’ responses to the further questions provided more detailed information about their vocabulary learning strategy use. First, the participants learn vocabulary learning strategies primarily from their school teachers. This indicates that teachers have an important part to play in the learners’ vocabulary strategy learning. Second, the participants choose to use some particular strategies mainly

because the strategies are convenient or easy to employ. Other minor reasons are because the strategies can help them learn vocabulary more efficiently or retain words longer. Third, the participants want to learn the strategies which are related to increasing natural or authentic input, analyzing a word's part of speech, involving deeper processing, approaching to vocabulary learning persistently, and taking charge of their vocabulary learning. Fourth, most of the additional strategies offered by the participants have already been included in the questionnaire. The extra strategies which are not listed on the questionnaire consist of learning vocabulary by surfing the Internet, using verbal and written repetition at the same time, and repeating after CD.