

An Empirical Study of Differences in the Use of English Vocabulary Learning Strategies

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The study quantitatively investigates 164 non-English major students from Jiaying University on the use of English vocabulary learning strategies. It is a comparative study focusing on high achievers versus low achievers, Science students versus Arts students, male students versus female students. This study finds that, firstly, there are significant differences between high achievers and low achievers in the use of eleven strategies such as learner autonomy. Secondly, there are significant differences in the use of four strategies such as selective attention between Science and Arts students. Third, there are a few differences between male and female students.

Key words: university students, vocabulary learning strategy, learning vocabulary

INTRODUCTION

If you ask any foreign language learner about the obstacles in learning the language, one answer you will certainly get is the difficulty of vocabulary learning. Freshmen and their teachers interviewed by the author said variously (see Appendix A):

“I feel awkward about my limited vocabulary and I do not know how to increase my vocabulary efficiently.” (Student 3)

“I am shy to speak English with our foreign teachers because I do not

know the words in English.” (Student 4)

“The problem I have encountered in my teaching is that some of my students are limited in vocabulary, which restricts them in their further English studies.” However, though it is difficult, vocabulary attainment is a crucial process in learning English as a second language since vocabulary serves as the foundation. Harley (1995) has said that vocabulary is a unique path that leads to the progress involved in language acquisition. Wilkins (1972) points out, “Without grammar, little can be conveyed; without vocabulary, nothing can be conveyed” (p. 9). Krashen and Terrell (1983, pp. 29-30) state that “vocabulary is of prime concern in L2 settings because it plays a dominant role in classroom success”. In brief, it is recognized that vocabulary is an essential part of second language acquisition or foreign language learning.

With regard to ways of vocabulary learning, most students interviewed said they learned vocabulary in one or more of the following ways: Some read new words together with Chinese meaning next to them without paying much attention to the English explanation. Some read after the tape. Some copied new words when they read them after class. Some often used vocabulary lists because when they met new words, it was easier to get the meaning from it than looking up a dictionary. Why students have big differences in learning vocabulary? Only with a deeper understanding of how vocabulary is learned by different groups of students can the teaching of vocabulary be made more effective. Therefore, it is beneficial to study the English vocabulary learning strategies used by different groups of students. The author’s hypotheses are as follows: there are significant differences in the use of vocabulary learning strategies between high and low achievers because high achievers are better than low achievers at learning English. Science students might use narrower vocabulary learning strategies than Arts students because Science students might learn in a narrower, more concentration and more focused way than Arts students. There is a big difference between male and female students in the use of vocabulary learning strategies because gender differences should affect the choice of

using vocabulary learning strategies. The reasons are: many researchers, such as Catalan (2003), Ji and Zhang (2004), and Zhang, Gao and Liu (2002) have found that female students have significant differences in the use of vocabulary learning strategies from male students; they are superior to male students in the use of vocabulary learning strategies. In order to find out the differences in vocabulary learning strategies used between high and low achievers, Science and Arts students, male and female students, the author will use a quantitative method to investigate 164 non-English major students and explores the following questions:

1. Are there any differences in using vocabulary learning strategies between high and low achievers?
2. Are there any differences in using vocabulary learning strategies between Science and Arts students?
3. Are there any differences in using vocabulary learning strategies between male and female students?

The theoretical framework is based upon the categorization by O'Malley and Chamot (1990), which is divided into four categories: beliefs about vocabulary learning, metacognitive strategies, cognitive strategies, social strategies and affective strategies.

LITERATURE REVIEW

A number of researchers both at home and abroad have made a contribution to vocabulary learning strategies research (Chen, 2001; Gu and Johnson, 1996; Nation, 2001; O'Malley & Chamot, 1990; Wang, 1998; Wu & Wang, 1998). Among them, most studies have concentrated on some types of strategies such as using dictionaries, guessing and mnemonics (key words). According to Schmitt and McCarthy (2002), a number of types of strategies for learning vocabulary have been identified, such as using guessing from

context (Huckin, Haynes & Cody, 1993), using certain mnemonics like the key words method (Pressley, Levin, & Miller, 1982), using inference from the context (Nation, 1982), using association (Cohen & Aphek, 1981), using the keyword method (Pressley, Levin, & Miller, 1982; Pressley *et al.*, 1982), using wordlists (Nation, 1982), using guessing (Nation, 2001) and rote repetition (O'Malley & Chomot, 1990). In addition, some studies focus on different students with different levels of English proficiency, different majors or different genders using different vocabulary learning strategies.

First of all, according to Zimmerman and Pons' (1986) findings, high achievement students were reported using significantly more strategies than the lower track students. This is similar to Chamot Küpper, and Impink Hernandez's (1988) findings. They found that higher level students used more strategies than beginning level students. O'Malley and Chamot (2001) concluded that more effective students used learning strategies more frequently and had a wider repertoire of learning strategies than less effective students did. Wu and Wang (1998) found there were statistically significant differences between good and poor learners in strategy use in all the 10 categories of strategies¹. However, Ji and Zhang (2004) found no significant differences between high and low achievers in the use of vocabulary learning strategies. In short, many researchers find that high achievers (or good learners/high English proficiency students) use vocabulary learning strategies significant differently from low achievers (or poor learners/high English proficiency students).

Secondly, some studies focus on vocabulary learning strategies used by Science and Arts students. Gao (2004) found that eighteen questions (these eighteen questions indicate Science and Arts students have significant differences in the use of plan-making, guessing, grouping, word formation, association, acting use and cooperation) out of 65 questions concerning vocabulary learning strategies have significant differences; both Science and

¹ holding beliefs, advance-organizing, self-monitoring, self evaluating, selective attention, using contexts, guessing, using dictionaries, classifying, and memorizing by rote

Arts students share a lot in common in the use of vocabulary learning strategies. Ji and Zhang (2004) found that there were significant differences between Science and Arts students in the use of reviewing and testing, using dictionary, extensive reading.

Thirdly, a number of researchers have made a contribution to the study of vocabulary learning strategies used by male and female students. For instance, Catalan (2003) concluded that male and female students differed significantly with regard to the number and range of vocabulary learning strategies. Females showed greater use of formal rule strategies, input elicitation strategies, rehearsal strategies and planning strategies, and males' greater use of image strategies. However, the similarity shared by both genders was evident. Boyle (1987) found male Chinese students of English were superior to females on a vocabulary recognition task. Nyikos (1990) found that women usually employed social strategies which were strongly to the development of communicative competence. Ji and Zhang (2004) found that there were significant differences between male and female postgraduates in the use of vocabulary learning strategies. Zhang, Gao and Liu (2002) found female graduates employed more vocabulary learning strategies than male students, and female students used eleven strategies more frequently than male students. Wang (2006) found that there was no significant difference between male and female students in the use of vocabulary learning strategies. Gao (2004) compared the differences in using vocabulary learning strategies between male and female students. He found that female students had significant differences from male students in the use of vocabulary learning strategies; female students used vocabulary learning strategies more frequently than male students.

The earlier studies the author reviewed were conducted using students at key national universities. The present study was conducted using students at a regional university. The main question is whether the present study might have different results because the study subjects are from a regional university rather than key universities. Key universities enroll students with higher scores in the University Entrance Examination (UEE) than regional

universities. Therefore, the author would expect students in key universities to have a better foundation in English and have more exposure to English, and be brighter than those of a regional university. Consequently, students in key universities might use more varied and effective vocabulary learning strategies than those in a regional university.

RESEARCH DESIGN

Subjects

The subjects involved in this study are 164 non-English major freshmen. Of the 164 subjects, 96 are Science students and 68 are Arts students, and 48 are males and 116 are females (in this study, in looking at the gender difference, the author chose at random equal number of male and female students from each faculty); they are of four different majors from four different faculties. 51 students are from the Faculty of Business Management, 45 students are from the Faculty of Life Science, 42 students are from the Faculty of Chinese Language and 26 students are from the Faculty of Education (see Table 1). They all participated in the UEE in June, 2007. The English scores (see Appendix B) are from 56 to 137. High and low achievers were selected on the grounds of their English scores in the UEE. The participant's English scores were ranked (see Appendix C). According to Qin's theory (2003), the highest 25 percent (41 students) are defined as high achievers, and the lowest 25 percent (41 students) are defined as low achievers. The average of the English scores in these two groups is shown in Table 2. By the time of this study, students had been at the university for two and a half months.

TABLE 1
Distribution of the Subjects

<i>Majors types</i>	<i>Science</i>		<i>Arts</i>		<i>Total</i>
Numbers	96		68		164
Majors	Commercial Management	Biology Science	Chinese Language	Education	
Number	51	45	42	26	164
Male	15	18	11	4	48
Female	15 (out of 36)	18 (out of 27)	11 (out of 31)	4 (out of 22)	48
High achievers	The highest 25%				41
Low achievers	The lowest 25%				41
Total					164

TABLE 2
English Scores of High Achievers and Low Achievers in the UEE

<i>High achievers 41 persons</i>			<i>Low achievers 41 persons</i>		
Highest scores	Lowest scores	Average scores	Highest scores	Lowest scores	Average scores
137	104	112.5	87	57	78.1

Instrument

The instrument used for collecting data in this study is a questionnaire (see Appendix D, English version; see Appendix E, Chinese version), which consisted 116 items, divided into two parts (see Table 3). Eight items came under beliefs and 108 items came under vocabulary learning strategies. Vocabulary learning strategies covered Metacognitive Strategies (28 items), Cognitive Strategies (70 items) and Social/Affective Strategies (10 items). Part I, background information, including participants' information such as faculties, majors, genders and English scores of the UEE, was developed by the author. Part II, the vocabulary learning questionnaire developed by Fan (2002) was adapted from that of Gu and Johnson (1996). The author uses Alpha coefficient reliability to find out the internal consistency reliability of the questionnaire, listed in Appendix F.

TABLE 3
Distribution of the Questionnaire

<i>Strategies</i>	<i>No. of Cases</i>	<i>No. of Items</i>	
Beliefs	164	8	
Metacognitive Strategies	164	28	
Plan-making	164	5	
Selective attention	164	7	
Learner autonomy	164	9	
Reviewing/Testing	164	7	
Cognitive Strategies	164	70	
MEMORIZATION	Repetition	164	11
	Association	164	6
	Imagery	164	4
	Word formation	164	4
	Grouping	164	4
	Contextualization	164	4
GUESSING	Immediate context	164	4
	Wider context	164	6
DICTIONARY USE	For comprehension	164	6
	Looking-up	164	5
	Elaborate use	164	8
NOTE-TAKING	Meaning-oriented	164	4
	Use-oriented	164	4
Social /Affective Strategies	164	10	
Social activities	164	5	
Affective control	164	5	
Total	164	116	

Procedures

The questionnaires were administered during regular class time by their

English teachers (the author's colleagues) in the last week of November, 2007. After being told the purpose of the questionnaire and that the results of this task would have no influence on their marks, the subjects were encouraged to respond to each item in the questionnaire honestly. All the questionnaires were collected. Before the data was subjected to statistical analysis, the author deleted five participant's questionnaires which were incomplete and three participant's questionnaires which had multiple answers to the same statement, so the number of valid questionnaires is 164.

Scoring of the Data

The students were told to rate each statement on a 5-point scale indicating "Extremely not true of me" (1), "Usually not true of me" (2), "Somewhat true of me" (3), "Usually true of me" (4) and "Extremely true of me (5)". These categories are assigned values of 1, 2, 3, 4 and 5.

Data Analysis

The analysis of the data is by means of SPSS 11.0. Following the common practice, the significance level is set at probability ($p \leq 0.05$) for all statistical analyses. An Independent T-test is used to compare the differences and answer Research Question 1, 2 and 3.

RESULTS

Comparison between High and Low Achievers

Differences Concerning Categories of Vocabulary Learning Strategies

Table 4 shows the differences concerning categories of vocabulary learning strategies are statistically significant between high and low achievers.

Concerning the beliefs, the difference is statistically significant (at the level of 0.005), which indicates that high and low achievers hold different beliefs. The former have more effective methods than the latter ($t=2.87$). Besides, there is a significant difference at metacognitive ($p=0.006$), cognitive strategies ($p=0.001$) and social/affective strategies ($p=0.033$). This result indicates high achievers use three categories of vocabulary learning strategies more frequently than low achievers.

TABLE 4
Independent T-test for Categories of Vocabulary Learning Strategies

<i>Categories</i>	<i>High achievers</i>		<i>Low achievers</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
	Mean	SD	Mean	SD		
Beliefs	3.58	0.72	3.15	0.64	2.87**	0.005
Metacognitive	3.14	0.53	2.81	0.52	2.82**	0.006
Cognitive	3.54	0.43	3.16	0.57	3.36***	0.001
Social/affective	2.87	0.67	2.58	0.55	2.17*	0.033

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

Differences Concerning Types of Vocabulary Learning Strategies

According to Table 5, high and low achievers show a significant difference in their use of selective attention and learner autonomy ($p=0.001$ in both cases), which indicates that high achievers use both selective attention and learner autonomy much more frequently than low achievers. High achievers are aware of which words are important for them. They have a very clear sense of which unknown words need looking up in the dictionary and which words do not. Seen from the statistics obtained, the significant differences between high and low achievers concerning plan-making is at the level of 0.341, and that concerning reviewing/testing is at the level of 0.057, which means high and low achievers have no significant differences in using these two types of strategies.

TABLE 5
Independent T-test for Types of Strategies under Metacognitive Strategies

<i>Types</i>	<i>High achievers</i>		<i>Low achievers</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
	Mean	SD	Mean	SD		
Plan-making	2.74	0.85	2.57	0.76	0.96	0.341
Selective attention	3.79	0.55	3.38	0.59	3.31***	0.001
Learner autonomy	3.18	0.72	2.71	0.55	3.36***	0.001
Reviewing/testing	2.83	0.58	2.58	0.58	1.93	0.057

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

As shown in Table 6, high and low achievers have significant differences in using word formation ($p=0.015$) and contextualization ($p=0.005$), which means low achievers seldom use them. The difference between high and low achievers in the use of grouping strategy ($p=0.000$) is significant. High and low achievers also show a significant difference in using immediate context guessing ($p=0.000$) and wider context guessing ($p=0.003$). Compared to high achievers, low achievers use immediate context and wide context guessing less frequently. Moreover, there is a significant difference between high and low achievers in using the elaborate use strategy ($p=0.014$). In addition, there are significant differences between high and low achievers concerning meaning-oriented note-taking ($p=0.024$) and use-oriented note-taking strategies ($p=0.005$), which indicates high achievers have a more clear purpose in taking notes than low achievers.

High and low achievers do not show any significant difference in the use of repetition ($p=0.090$), association ($p=0.300$) and imagery strategies ($p=0.434$). Besides, the differences between high and low achievers in the use of dictionary for comprehension ($p=0.614$) and look-up strategies ($p=0.276$) are not significant.

TABLE 6
Independent T-test for Types of Strategies under Cognitive Strategies

<i>Cognitive Strategies</i>	<i>Types</i>	<i>High achievers</i>		<i>Low achievers</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
		Mean	SD	Mean	SD		
Memorization	Repetition	3.22	0.48	3.04	0.50	1.72	0.090
	Association	3.35	0.65	3.18	0.82	1.04	0.300
	Imagery	3.04	0.84	2.91	0.69	0.79	0.434
	Word formation	3.17	0.78	2.71	0.87	2.49*	0.015
	Grouping	2.78	0.79	2.17	0.73	3.68***	0.000
	Contextualization	3.50	0.77	3.04	0.69	2.86**	0.005
Guessing	Immediate context	3.61	0.69	3.03	0.69	3.80***	0.000
	Wider context	3.73	0.62	3.25	0.78	3.09**	0.003
Dictionary use	For comprehension	3.45	0.61	3.37	0.76	0.51	0.614
	Looking-up	3.74	0.71	3.56	0.74	1.09	0.276
	Elaborate use	3.78	0.63	3.39	0.79	2.52*	0.014
Note-taking	Meaning-oriented	3.43	0.72	3.06	0.76	2.30*	0.024
	Use-oriented	3.85	0.58	3.41	0.79	2.91**	0.005

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

There is no significant difference in the use of affective control ($p=0.537$) between high and low achievers (see Table 7), which indicates that both high and low achievers can control affective factors, such as lowering their anxiety, and encouraging themselves when they are learning vocabulary. High and low achievers show a significant difference in the use of social activities ($p=0.007$), which means most high achievers are more brave and confident to communicate with others when they learn vocabulary.

TABLE 7
Independent T-test for Types of Strategies under Social/Affective Strategies

<i>Types</i>	<i>High achievers</i>		<i>Low achievers</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
	Mean	SD	Mean	SD		
Social activities	2.44	0.84	1.97	0.69	2.78**	0.007
Affective control	3.29	0.85	3.18	0.79	0.62	0.537

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

Comparison between Science and Arts Students

Differences Concerning Categories of Vocabulary Learning Strategies

As shown in Table 8, at the beliefs level, the difference is statistically significant ($P=0.030$), which indicates that students of Science and of Arts hold different beliefs. Arts students use more effective methods than Science students ($t=-2.19$). In addition, there is a significant difference between Science and Arts students in the use of cognitive strategies ($p=0.043$), but there is no significant difference in using metacognitive ($p=0.149$) and social/affective strategies ($p=0.062$). The statistics indicate that Arts students use more cognitive strategies than Science students.

TABLE 8
Independent T-test for Categories of Vocabulary Learning Strategies

<i>Categories</i>	<i>Science Students</i>		<i>Arts Students</i>		<i>t</i>	<i>Sig.(2-tailed)</i>
	Mean	SD	Mean	SD		
Beliefs	3.20	0.72	3.45	0.68	-2.19*	0.030
Metacognitive Strategies	2.91	0.51	3.03	0.51	-1.45	0.149
Cognitive Strategies	3.26	0.55	3.42	0.43	-2.04*	0.043
Social/affective Strategies	2.68	0.58	2.85	0.61	-1.88	0.062

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

Differences Concerning Types of Vocabulary Learning Strategies

As Table 9 shows, Science and Arts students have significant differences in the use of the selective attention ($p=0.038$) and reviewing and testing ($p=0.047$), which indicates Arts students use these two vocabulary learning strategies more frequently than Science students.

TABLE 9
Independent T-test for Types of Strategies under Metacognitive Strategies

<i>Types</i>	<i>Science students</i>		<i>Arts students</i>		<i>t</i>	<i>Sig.(2-tailed)</i>
	Mean	SD	Mean	SD		
Plan-making	2.68	0.74	2.69	0.78	-0.11	0.915
Selective attention	3.46	0.59	3.65	0.51	-2.09*	0.038
Learner autonomy	2.88	0.63	2.97	0.69	-0.87	0.384
Reviewing/testing	2.62	0.55	2.79	0.59	-2.00*	0.047

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

As Table 10 shows, Science and Arts students have significant differences in the use of grouping strategies ($p=0.032$), which indicates Arts students use grouping strategies more frequently than Science students. These results also indicate except for grouping strategies, Science and Arts students share all types of strategies under cognitive strategies when they are learning vocabulary.

TABLE 10
Independent T-test for Types of Strategies under Cognitive Strategies

<i>Cognitive Strategies</i>	<i>Types</i>	<i>Science students</i>		<i>Arts students</i>		<i>t</i>	<i>Sig.(2-tailed)</i>
		Mean	SD	Mean	SD		
Memorization	Repetition	3.05	0.46	3.19	0.43	-1.95	0.053
	Association	3.27	0.76	3.25	0.63	0.22	0.824
	Imagery	2.94	0.78	3.07	0.83	-1.02	0.307
	Word formation	2.89	0.88	2.91	0.84	-0.17	0.862
	Grouping	2.40	0.75	2.65	0.71	-2.16*	0.032
	Contextualization	3.18	0.70	3.38	0.73	-1.79	0.074
Guessing	Immediate context	3.18	0.81	3.35	0.69	-1.41	0.162
	Wider context	3.36	0.82	3.56	0.67	-1.67	0.097
Dictionary use	For comprehension	3.36	0.68	3.49	0.48	-1.37	0.173
	Looking-up	3.57	0.72	3.71	0.57	-1.27	0.205
	Elaborate use	3.49	0.74	3.69	0.58	-1.84	0.068
Note-taking	Meaning-oriented	3.14	0.73	3.34	0.69	-1.81	0.072
	Use-oriented	3.53	0.74	3.70	0.57	-1.59	0.113

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

According to Table 11, Science and Arts students have significant differences in the use of affective control ($p=0.019$). Arts students use these strategies much more frequently than Science students. However, there is no significant difference in the use of social activities.

TABLE 11
Independent T-test for Types of Strategies under Social/Affective Strategies

<i>Types</i>	<i>Science students</i>		<i>Arts students</i>		<i>t</i>	<i>Sig.(2-tailed)</i>
	Mean	SD	Mean	SD		
Social activities	2.25	0.78	2.32	0.75	-0.59	0.551
Affective control	3.10	0.76	3.38	0.73	-2.37*	0.019

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

Comparison between Male and Female Students

Differences Concerning Categories of Vocabulary Learning Strategies

As shown in Table 12, there are no significant differences between male and female students concerning vocabulary learning beliefs and most vocabulary learning strategies, which means both male and female students hold similar beliefs; Except for social/affective strategies, male students use metacognitive and cognitive strategies as frequently as female students.

TABLE 12
T-test for Categories of Vocabulary Learning Strategies

<i>Categories</i>	<i>Male students</i>		<i>Female students</i>		<i>t</i>	<i>Sig.(2-tailed)</i>
	Mean	SD	Mean	SD		
Beliefs	3.22	0.66	3.18	0.73	0.42	0.676
Metacognitive Strategies	2.98	0.55	2.90	0.51	0.93	0.352
Cognitive Strategies	3.14	0.55	3.25	0.51	-1.37	0.172
Social/affective Strategies	2.86	0.59	2.66	0.60	2.24*	0.027

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

Differences Concerning Types of Vocabulary Learning Strategies

As shown in Table 13, there is no significant difference between male and female students in the use of all types of strategies under metacognitive strategies, which indicates male students use plan-making, selective attention, learner autonomy and reviewing/testing as frequently as female students.

TABLE 13
Independent T-test for Types of Strategies under Metacognitive Strategies

<i>Types</i>	<i>Male students</i>		<i>Female students</i>		<i>t</i>	<i>Sig. (2-tailed)</i>
	Mean	SD	Mean	SD		
Plan-making	2.79	0.73	2.67	0.75	1.12	0.264
Selective attention	3.33	0.66	3.41	0.60	-0.93	0.354
Learner autonomy	2.99	0.69	2.83	0.58	1.72	0.087
Reviewing/testing	2.79	0.63	2.69	0.60	1.04	0.301

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

As shown in Table 14, out of 13 types of strategies under cognitive strategies, there are significant differences between male and female students in the use of only three, which are grouping ($p=0.016$), looking up dictionaries ($p=0.039$) and use-oriented note-taking ($p=0.002$). Specifically the author has the following findings. (1) Male and female students share great similarity in the use of most types of strategies under cognitive strategies. (2) Female students use looking up dictionaries and use-oriented note-taking far more frequently than male students. (3) Male students use the grouping strategy far more frequently than female students.

TABLE 14
Independent T-test for Types of Strategies under Cognitive Strategies

<i>Cognitive Strategies</i>	<i>Types</i>	<i>Male students</i>		<i>Female students</i>		<i>t</i>	<i>Sig.(2-tailed)</i>
		Mean	SD	Mean	SD		
Memorization	Repetition	3.09	0.57	3.07	0.47	0.29	0.767
	Association	3.12	0.61	3.29	0.75	-1.77	0.078
	Imagery	2.98	0.76	2.99	0.81	-0.16	0.876
	Word formation	2.89	0.79	2.87	0.90	0.17	0.865
	Grouping	2.79	0.80	2.53	0.63	2.44*	0.016
	Contextualization	3.09	0.68	3.12	0.69	-0.30	0.763
Guessing	Immediate context	3.00	0.75	3.14	0.73	-1.24	0.216
	Wider context	3.36	0.68	3.30	0.76	0.53	0.599
Dictionary use	For comprehension	3.25	0.62	3.34	0.67	-0.91	0.366
	Looking-up	3.29	0.81	3.52	0.66	-2.08*	0.039
	Elaborate use	3.27	0.68	3.46	0.72	-1.84	0.068
Note-taking	Meaning-oriented	3.07	0.69	3.19	0.69	-1.22	0.225
	Use-oriented	3.18	0.734	3.52	0.73	-3.14**	0.002

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

According to Table 15, male and female students have significant differences in the use of social activities ($p=0.001$). Male students use these strategies much more frequently than female students. However, there is no significant difference in the use of affective control.

TABLE 15
Independent T-test for Types of Strategies under Social/Affective Strategies

<i>Types of strategies</i>	<i>Male students</i>		<i>Female students</i>		<i>t</i>	<i>Sig.(2-tailed)</i>
	Mean	SD	Mean	SD		
Social activities	2.56	0.78	2.20	0.69	3.27***	0.001
Affective control	3.17	0.66	3.13	0.83	0.36	0.723

Significant differences are based on paired t-tests: * $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$

DISCUSSION

The purpose of the present study is to find out whether there are any differences in using vocabulary learning strategies between high and low

achievers, Science and Arts students, male and female students. After the investigation, the study has provided answers to three research questions. It has the following major findings.

There is a significant difference between high and low achievers in using metacognitive strategies, cognitive strategies and social/affective strategies. This result is in accordance with Jin's (2006) findings: Band 1 and Band 3 students had significant differences with regard to metacognitive, cognitive, social/effective strategies. The result is also similar to the research findings of Chamot et al. (1988): in foreign language studies, higher level students use more strategies than beginning level students.² The present findings mean high achievers are more active and have more initiative than low achievers in vocabulary learning. High achievers rely on themselves rather than on their teachers, which is in accordance with the author's classroom observation and Gu's (1994) findings, the participants' vocabulary size correlated with their self-initiative (.35).

Of the nineteen types of vocabulary learning strategies, high and low achievers show significant differences in their use of eleven types: selective attention, learner autonomy, word formation, grouping, contextualization, wider context guessing, immediate context guessing, elaborate use, use-oriented note-taking, meaning-oriented note-taking and social activities. The result concerning learner autonomy, high achievers do much more reading beyond what the teacher requires of them. Moreover, they use other methods such as singing English songs, watching English TV programs, listening to radio programs, and playing English games to enlarge their vocabulary. These results concerning word formation and contextualization, low achievers seldom use them even though they are proven to be very helpful in students' vocabulary learning by some researchers such as Scholfield (1980). These findings also reveal that high achievers are able to put what they have learned into practical use. They are not only good at using context, alternative

² Beginning level students reported an average of 12.4 strategies per interview while intermediate/advanced students reported an average of 16.9 strategies per interview.

cues, logical development, common sense and knowledge of the world to guess, but are also good at using grammatical structure, parts of speech and word structures such as prefixes, stems, and suffixes. The difference between high and low achievers in using grouping strategy is significant. This result is in accordance with Chamot's (1984) finding: The grouping strategy may work better for more proficient learners, as they have been shown to favor this strategy more than beginners do. Besides, high achievers use elaborate use of dictionary more frequently than low achievers, which could be explained that the purpose of using dictionaries varies from high achievers to low achievers. High achievers make conscious efforts to memorize words by paying attention to the related examples or explanation. On the contrary, low achievers pay sole attention to the meaning, especially the Chinese meaning when they look words up in the dictionary. They often focus on the Chinese explanation instead of the English explanation. They do not attach great attention to the related information that goes with each definition. Gu (1994) mentions that the dictionary is used by the good learner as an aid to comprehension and a learning source. Poor learners take the dictionary as a collection of lexical meanings and try to find a 'general meaning' under a dictionary entry.

High and low achievers do not show any significant difference in the use of plan-making, reviewing/testing, repetition, association, imagery strategies, dictionary for comprehension, look-up strategies and affective control. It may be because student subjects are affected by traditional teaching methods, which are teacher-centered, such as teachers make learning plans for students. Teachers test or assess students. Students believe that teachers' assessment result or the marks are the only way of assessing them. Both groups learn Chinese characters by rote learning, in which they simply transfer to their English vocabulary learning.

Of the three categories of vocabulary learning strategies, Science and Arts students show significant differences in their use of cognitive strategies. Arts students use cognitive strategies more frequently than Science students. Of the nineteen types of vocabulary learning strategies, Science and Arts

students have significant differences in using the four types of strategies: selective attention, reviewing/testing, grouping and affective control. Arts students use these four types of strategies more frequently than Science students. This finding is in accordance with the author's original hypotheses, which states that there would be significant differences between Science and Arts students because of their respective majors and subjects, and Science students would use narrower vocabulary learning strategies than Arts students. The present study finds out Arts students use a wider range of vocabulary learning strategies and use them more frequently according to their learning situations. In interpreting these findings, two possible explanations for the differences obtained come to mind. First, the greater number of strategies reported to be used by Arts students might be due to a higher degree of motivation regarding language learning and future jobs in general and vocabulary learning in particular. Second, the differences suggest distinct learning styles and learning preferences by Science and Arts students. This finding is not similar to the finding by Ji and Zhang (2004) probably because their student subjects were at postgraduate level, and the subjects of the present study are freshmen at a regional university.

Of the three categories of vocabulary learning strategies, except for social/affective strategies, male and female students show no significant differences in their use of metacognitive strategies and cognitive strategies. This finding is confirmed by Catalan (2003). Of the nineteen types of vocabulary learning strategies, most vocabulary learning strategies are shared by male and female students. This finding is counterintuitive to the author's original hypotheses, which states that there is a big difference between male and female students in the use of vocabulary learning strategies because gender differences should affect the choice of using vocabulary learning strategies. There are significant differences in the use of only four types of vocabulary learning strategies between male and female students, which are the grouping, looking up dictionaries, use-oriented note-taking and social activities strategies. These findings show: (1) female students pay more attention to techniques or strategies that involve looking up dictionaries or

dictionary utilization, and they look up or utilize dictionaries more effectively than male students. In addition, female students pay more attention to Standard English forms than male students. Therefore, they usually note down vocabulary for later confirmation or they consult a dictionary for further confirmation. (2) Generally speaking, male students are more logical in their thinking, and are braver and more confident in communicating with others. Male students are good at seizing the opportunities to communicate with others, and male students are more likely to share their opinions with others. This finding is confirmed by both the author's classroom observation and Catalan (2003, p. 65): "We also find higher percentages for males in two elicitation strategies: asking the teacher for a sentence including the word, and asking the teacher for a paraphrase."

This study shows more similarities shared by male and female students in the use of vocabulary learning strategies than differences. The results of the present study are not in line with previous findings.

To sum up, the finding concerning high achievers versus low achievers is in line with previous studies, while the findings concerning Science students versus Arts students and male students versus female students are not in accordance with previous studies such as Ji and Zhang (2004), Zhang, Gao and Liu (2002) and Gao (2004). The reasons might be the student subjects in earlier studies were chosen from key universities and the student subjects in the present study were from a regional university; the student subjects in earlier studies were postgraduates or sophomore students from key universities and not freshmen at an undergraduate university as in the present study. The subjects in this study have been at university for only two and a half months. And most freshmen have not received any strategy training yet. They employ vocabulary learning strategies frequently used in their middle schools.

IMPLICATIONS

The study reveals that students generally lack the awareness of vocabulary learning strategies training. They need to raise their own awareness of the importance of using vocabulary learning strategies. In addition, students should use vocabulary learning strategies in the course of finishing their assignments because the present study shows low achievers use eleven types of vocabulary learning strategies less frequently than high achievers. Low achievers rely heavily on their teachers. They do not know how to learn by themselves. Science students use narrower vocabulary learning strategies than Arts students.

On the basis of these findings, the author concludes that teachers should become more aware of the differences and similarities between high and low achievers, Science and Arts students, male and female students in the use of vocabulary learning strategies. In addition, teachers should become aware that these differences in the use of vocabulary learning strategies may change according to students' ages, their beliefs, their majors, their learning experiences, their learning environment, and their English proficiency. With this awareness in mind, teachers can support students' vocabulary learning in more effective ways by encouraging them to use a greater variety of vocabulary learning strategies because in traditional English classes in China, teachers usually spent much time on grammar, key words explanation, sentence analysis and translation rather than vocabulary or vocabulary learning strategies. Teachers, to some extent, in their classroom teaching, neglect training students in the use of vocabulary learning strategies. Some teachers even think vocabulary is learned through memorization. Teachers do not need to help students' vocabulary learning. However, the present study reveals that low achievers do not know how to use vocabulary learning strategies properly. Therefore, teachers should spend time teaching their students vocabulary learning strategies and guide the students how to use vocabulary learning strategies such as metacognitive strategies, in order to manage and control the process of their own learning.

In addition, teachers should integrate vocabulary learning strategies into their English teaching and use some types of vocabulary learning strategies as a model or give relevant lectures on how to use vocabulary learning strategies to students. Teachers can introduce effective vocabulary learning strategies for different groups of students on the basis of these findings.

Finally, teachers should design appropriate classroom tasks or encourage cooperative learning (group work or pair work) involving both high and low achievers, both male and female students, both Science and Arts students. This may help students learn vocabulary more efficiently.

To sum up, in vocabulary teaching, teachers should teach students according to their aptitude and their preference of vocabulary learning strategies, their English proficiency, their majors and their genders. Teachers should give more exposure to vocabulary learning strategies specifically for different groups of students.

THE AUTHOR

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REFERENCES

- Boyle, J. (1987). Sex differences in listening vocabulary. *Language Learning*, 37, 273-84.

- Catalan, R. M. J. (2003). Sex differences in L2 vocabulary learning strategies. *International Journal of Applied Linguistics*, 13(1), 54-77.
- Chamot, A. U. (1984). *Identification of ESL learning strategies*. Paper presented at the 18th Annual TESOL Convention, Houston, Texas.
- Chamot, A. U., Küpper, L., & Impink-Hernandez, M. V. (1988). *A study of learning strategies in foreign language instruction: The third year and final report*. McLean, VA.: Interstate Research Associates.
- Chen, H. (2001). Vocabulary learning strategies of Chinese non-English major students. *Foreign Language Teaching*, 6, 46-51.
- Fan, L. (2002). *A study on English vocabulary learning strategies*. Unpublished master's thesis. Beijing Teacher University, Beijing.
- Gao, Y. (2004). Study on vocabulary learning strategies by non-English major students. *Foreign Language Teaching Abroad*, 3, 24-29.
- Gu, Y. (1994). *Vocabulary learning strategies of good and poor Chinese EFL learners*. Paper presented at TESOL'94, Baltimore. (ERIC Document Reproduction Service No. ED 370 411).
- Gu, Y., & Johnson, R. K. (1996). Vocabulary learning strategies and language learning outcomes. *Language Learning*, 46(4), 643-679.
- Harley, B. (1995). *Lexical issues in language learning (ed.)*. Amsterdam, The Netherlands: John Benjamins Publishing Co.
- Ji, J., & Zhang, H. (2004). A contrastive study of the differences in the application of vocabulary learning strategies. *Journal of Northwest University*, 4, 166-170.
- Jin, L. (2006). *A survey of English vocabulary learning beliefs and strategies adopted by Chinese non-English majors*. Retrieved from the world wide web: <http://dlib.cnki.net/kns50/detail.aspx?filename=2006166155.nh&dbname=CMFD2006>.
- Krashen, S., & Terrell, T. (1983). *The natural approach: Language acquisition in the classroom*. Oxford: Pergamon.
- Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.
- Nyikos, M. (1990). Sex-related differences in adult language learning: Socialization and memory factors. *Modern Language Journal*, 74, 273-287.
- O'Malley J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge: Cambridge University Press.
- O'Malley J. M., & Chamot, A. U. (2001). *Learning strategies in second language acquisition*. Shanghai: Shanghai Foreign Language Education Press.
- Qin, X. (2003). *Quantitative data analysis in foreign teaching and research*. Wuhan. Wuhan: Central China Technology University Press.
- Schmitt, N., & McCarthy, M. (2002). *Vocabulary description acquisition and*

- pedagogy*. Shanghai: Shanghai Foreign Language Education Press.
- Scholfield, P. J. (1980). Explaining meaning by paraphrase: Problems and principles, guidelines for vocabulary teaching. *Regional English language Centre Journal*, 3, 24-37.
- Wang, W. (1998). Beliefs, strategies and English vocabulary retention. *Foreign Language Teaching and Research*, 1, 47-52.
- Wang, D. (2006). *Research on gender factors in the vocabulary learning strategies in English language learning*. Retrieved from the World Wide Web: [http://dlib.cnki.net/kns50/detail.aspx?QueryID=775 &CurRec=1](http://dlib.cnki.net/kns50/detail.aspx?QueryID=775&CurRec=1).
- Wilkins, D. A. (1972). *Linguistics in language teaching*. London: Edward Arnold.
- Wu, X., & Wang, Q. (1998). Investigation into the vocabulary learning strategies of Chinese non-English majors. *Foreign Language Teaching and Research*, 1, 53-55.
- Zhang, P., Gao, Z., & Liu, J. (2002). Gender differences: Vocabulary learning beliefs and strategies for EFL adult learners in China. *Foreign Languages and Teaching*, (7), 47-52.
- Zimmerman, B. J., & Pons, M. M. (1986). Development of a structured interview for assessing student use of self-regulated learning strategies. *American Educational Research Journal*, 23, 614-628.

APPENDICES

Appendix A Interview

1. Feb. 28th, 2008

The author interviewed five students from the Biology Department after class in their dorms. They were asked the question: "Do you think vocabulary is important in English learning? Do you like vocabulary?"

All students agreed that vocabulary is important in English learning. However, most of them disliked vocabulary or do not know how to learn vocabulary in effective ways.

Student 1: "I don't like learning vocabulary at all. It is very boring."

Student 2: "I like vocabulary, but I am not good at it. Can you tell me how

to learn it better?”

Student 3: “I feel awkward about my limited vocabulary and I do not know how to increase my vocabulary efficiently.”

Student 4: “I am shy to speak English with our foreign teachers because I do not know the words in English for the meanings I want to express.

Student 5: “I am not afraid of learning vocabulary because I like vocabulary.

2. Mar. 10, 2008

The author interviewed one of her colleagues, Miss Xiao Xiang, who also teaches freshmen, about the biggest problem in her teaching.

Miss Xiao: “The problem I encounter in my teaching is that some of my students are limited in vocabulary, which restricts them in their English studies. I think my students don’t pay great attention to the importance of vocabulary. Very often, they recite new words mechanically, but neglect to pay attention to their meaning. They lack the ability to classify words into certain groups. They find it rather difficult to remember new words. They are too busy with their other subjects and neglect English.”

“Repetition is not important. Sometimes, students can remember a word after hearing it once- if they learn it in a context.”

3. Mar. 16th, 2008

The author interviewed another group of students after class. The question was “How do you learn vocabulary?”

Student 1: “I read new words with Chinese meanings next to them.

Student 2: “I don’t pay attention to the English, I focus on the Chinese meaning when I look up words in a dictionary.”

Student 3: “I read after the tape.”

Student 4: “I copy words when I read them after class.”

Student 5: “I use vocabulary lists most often because when I meet new words. It is easier to get the meaning from the vocabulary lists than looking up a dictionary.”

Appendix B
Subjects' English Scores in the UEE

No.	Scores	No.	Scores	No.	Scores	No.	Scores	No.	Scores
1	68	34	81	67	101	100	89	133	90
2	58	35	98	68	86	101	93	134	98
3	67	36	107	69	101	102	122	135	78
4	97	37	80	70	97	103	110	136	92
5	99	38	96	71	105	104	109	137	87
6	82	39	87	72	98	105	110	138	105
7	98	40	88	73	90	106	112	139	104
8	102	41	89	74	60	107	96	140	115
9	108	42	71	75	88	108	80	141	115
10	82	43	79	76	114	109	87	142	89
11	91	44	98	77	126	110	95	143	90
12	99	45	82	78	105	111	96	144	115
13	93	46	96	79	108	112	98	145	106
14	90	47	110	80	82	113	88	146	106
15	83	48	110	81	98	114	92	147	96
16	93	49	86	82	118	115	114	148	103
17	87	50	89	83	82	116	85	149	102
18	80	51	103	84	80	117	95	150	102
19	80	52	103	85	84	118	88	151	107
20	81	53	103	86	75	119	89	152	80
21	88	54	80	87	92	120	106	153	102
22	107	55	70	88	93	121	99	154	93
23	83	56	110	89	104	122	104	155	106
24	99	57	100	90	83	123	93	156	83
25	85	58	91	91	120	124	102	157	95
26	77	59	108	92	93	125	88	158	119
27	101	60	95	93	97	126	90	159	101
28	97	61	106	94	87	127	88	160	116
29	56	62	101	95	93	128	127	161	109
30	101	63	91	96	93	129	137	162	110
31	98	64	96	97	110	130	92	163	95
32	80	65	86	98	90	131	91	164	89
33	108	66	90	99	82	132	102		

Appendix C Rank Order of English Scores

High achievers41		Low Achievers41	
Rank Order	Scores	Rank Order	Scores
1	137	124	87
2	127	125	87
3	126	126	87
4	122	127	87
5	120	128	86
6	119	129	86
7	118	130	86
8	116	131	85
9	115	132	85
10	115	133	85
11	115	134	84
12	114	135	83
13	114	136	83
14	112	137	83
15	110	138	83
16	110	139	82
17	110	140	82
18	110	141	82
19	110	142	82
20	110	143	82
21	110	144	82
22	109	145	81
23	109	146	81
24	108	147	80
25	108	148	80
26	108	149	80
27	108	150	80
28	107	151	80
29	107	152	80
30	107	153	80
31	106	154	79
32	106	155	78
33	106	156	77
34	106	157	75

35	106	158	71
36	105	159	70
37	105	160	68
38	105	161	67
39	104	162	60
40	104	163	58
41	104	164	56

Appendix D

Vocabulary Learning Strategies Questionnaire (English Version)

Beliefs on Vocabulary Learning (8 items)

- Vocabulary learning is a mechanical task. (Reversed value)
- Repetition, which means monotony, is the key to memorizing English vocabulary. (Reversed value)
- Vocabulary learning demands no creativity. (Reversed value)
- I'm not interested in learning vocabulary. (Reversed value)
- I derive sense of success from vocabulary learning.
- I find vocabulary learning very interesting since I like guessing meanings of unknown words from contexts.
- I find vocabulary learning very interesting because I need using my head.
- I feel fun in learning vocabulary since it needs me to work out various ways to master new words.

At Metacognitive Level (28 items)

1. Plan-Making & Plan-Implementing (5 items)

- I make plan for vocabulary learning.
- I learn certain amount of new words at regular time.
- I stick to my vocabulary learning plan instead of working on it by fits and starts.
- I will modify my vocabulary learning plan if the outcomes are not satisfactory.

I will not forget the words I have learned before while learning new words.

2. Selective Attention (7 items)

I know which words are important for me to learn.

When I come across a new word, I know whether I need to remember it or not.

I will underline or take down those words I consider important in my learning.

I will pay more attention to those words that are essential for comprehending a passage.

I know what cues I should use in guessing the meaning of an unknown word.

I look up those words that I'm interested in during my reading.

I have a clear sense in my reading which words need looking up in the dictionary and which words do not.

3. Learner autonomy (9 items)

Besides textbooks, I read other English materials that fall under my interest.

I only learn those that my English teacher requires of us to learn.
(Reversed value)

My English vocabulary is mainly from English class and my homework.
(Reversed value)

I read English newspapers or magazines to enlarge my vocabulary.

I often watch English TV programs or listen to English radio programs.

I buy some vocabulary books and learn a lot from them.

I write diary in English and make most use of the learned words in it.

I try to remember the new words when playing English games (including computer games).

I learn English songs and remember new words in them.

4. Reviewing/Testing (7 items)

I review the words I have learned regularly.

I often practice oral translation between English words and their Chinese

equivalents.

I carry my vocabulary notebook with me and review the words in it when time is available (For example, when waiting for a bus).

I often quiz myself on vocabulary.

I often cooperate with my classmate to test the vocabulary we have learned.

Only before examination do I review the words I have learned.

My teacher often quizzes us on the words we have learned.

At Cognitive Level (70 items)

1. Memorization Strategies (33 items)

Repetition (11 items)

(1) Oral repetition (4 items)

When I try to remember a word, I mainly repeat it aloud to myself.

When I try to remember a word, I mainly repeat its pronunciation in my mind.

I repeat the word aloud and memorize its spelling according to its pronunciation.

I think repeating the sound of a new word to myself would be enough to remember the word.

(2) Visual Repetition (4 items)

When I try to remember a word, I mainly write it repeatedly.

I dislike memorizing the spelling of a word letter by letter.

I write both the new words and their Chinese equivalents repeatedly in order to remember them.

I think writing a new word repeatedly would not be enough to remember the word.

(3) Combined Repetition (3 items)

When I try to remember a word, I read and write it repeatedly.
(Oral+Visual)

I write the word while listening to them on the tape.(Auditory +Visual)

I follow the tape to repeat the words orally and write them at the same

time.

(Auditory+Oral+Visual)

Association (6 items)

(1) Phonological Association (2 items)

When I remember a new word, I associate it with other English words that sound similar to it.

When I remember a new word, I associate it with other Chinese words that sound similar to it.

(2) Morphological Association (2 items)

When I remember a new word, I associate it with other English words that share a similar part in spelling.

When I remember a new word, I associate it with a known word whose spelling is included in the new word itself.

(3) Semantic Association (2 items)

When I remember a new word, I associate it with several Chinese words that share the same meaning with it.

When I remember a new word, I associate it with other English words that share the same meaning or have opposite meaning.

Imagery (4 items)

I act out a word in order to remember it better. (Acting Out)

I create a mental image of the new word to help me remember it. (Mental Image)

I associate a new word with a known word whose spelling is included in the new word and create an image based on semantic relationship to help me remember it (For example,., to associate “gape” with “gap” and image a person who gapes so much that his lips cracks and a gap appeared in it). (Morphological+Image)

I associate a new word with a Chinese word that sounds similarly to it and create an image based on semantic relationship to help me remember it (For example,., to associate “quaff” with Chinese words “夸父” and image Kua fu, a fictional figure in Chinese legend, chased after the sun and felt so thirsty that he quaffed a

lot).(Keyword)

Word Formation (4 items)

(1) Rules Learning (2 items)

I deliberately study word-formation rules in order to remember more words.

I have learned the commonly used prefixes, suffixes and stems by heart.

(2) Rules Application (2 items)

When I remember a new word, I analyze it in terms of prefixes, stems and suffixes.

I know word-formation rules and always apply them to helping me memorizing the words better.

Grouping (4 items)

I group the words based on synonyms or antonyms when remembering them. (Synonym or Antonym)

I group the words under their super categories to help me better memorize them. (Hyponym)

I group the words into several fields in mind when remembering them. (Fields)

I group the words related to a topic together when memorizing them. (Topics)

Contextualization (4 items)

(1) Making up Sentences (1 item)

When I remember a new word, I make up a sentence with it aloud or silently.

(2) Other Contextual Clues (3 items)

When I remember a new word, I recall the context where the new word occurs.

I remember words better when I put them in contexts.

I read books in my areas of interest and remember the words that I'm interested in during the reading process.

2. Guessing Strategies (10 items)

(1) Using Background Knowledge/Wider Context (6 items)

I make use of context to guess the meaning of a word.

I use alternative cues and try again if I fail to guess the meaning of a word.

I make use of the logical development in the context (For example cause and effect) when guessing the meaning of a word.

I make use of my common sense and knowledge of the world when guessing the meaning of a word.

I check my guessed meaning against the wider context to see if it fits in.

I look for any definitions or paraphrases in the passage that support my guess about the meaning of a new word.

(2) Using Linguistic Cues/Immediate Context (4 items)

I make use of the grammatical structure of a sentence when guessing the meaning of a new word.

I make use of the part of speech of a new word when guessing its meaning.

I analyze the word structure (prefix, stem, and suffix) when guessing the meaning of a new word.

I make use of any examples provided in the context when guessing the meaning of a new word.

3. Dictionary Use Strategies (19 items)

(1) For Comprehension (6 items)

When I meet a new word in my reading, I look it up at once.

When I meet a new word in my reading, I underline it or write it down and look it up after finishing reading.

When I see an unfamiliar word again and again, I look it up.

When I want to confirm my guess about a word, I look it up.

When a new word prevents me from understanding a whole sentence or even a whole paragraph, I look it up.

I only look up those words that are crucial to the understanding of the

whole passage.

(2) Looking-up Strategies (5 items)

If the new word carries several entries of meaning, I always don't know which one is the appropriate one. (Reversed value)

If the new word carries several entries of meaning, I use various information to reduce them by elimination.

If the new word is inflected, I remove the inflections to recover the form to look up (For example, for grabbed, look for grab).

I will check whether I choose the appropriate meaning entries or not by fitting the dictionary definitions into the context.

I will check the distinction among some synonyms in the dictionary.

(3) Elaborate Use (8 items)

In addition to the meaning of a word, I pay attention to the related examples as well when I look up a new word in the dictionary.

I pay attention to phrases or set expressions that go with the word I look up.

I write down the new words I look up along with their meanings and sample sentences.

I consult a dictionary to find out the subtle differences in the meanings of English words.

When I want to know the usage of a word about which I have already have some knowledge, I look it up in the dictionary.

When I look up a new word, I pay attention to its English explanation as well as its Chinese explanation.

When I get interested in another new word in the definitions of the word I look up, I look up this word as well.

I make conscious efforts to memorize the word when I look it up.

4. Note-Taking Strategies (8 items)

(1) Meaning-Oriented Note-Taking Strategies (4 items)

I take down the words I learn in class (or outside class) and their Chinese equivalents.

I take down the words I look up in the dictionary along with their

Chinese equivalents.

I take down synonyms or antonyms of a word together.

I take down the English synonym(s) or explanation of the word I look up.

(2) Use-oriented Note-Taking Strategies (4 items)

I make a note when I see a useful expression or phrase.

I take down the collocations of the words I have learned.

I take down the collocations of the word I look up.

I take down grammatical information about a word when I look it up.

At Social / effective Level (10 items)

1. Social Activities (5 items)

I take initiative to seek any opportunity to converse with foreigners in English.

I try to communicate with my classmates in English and make the best use of the words I have learnt.

I go to English corner and use as many newly learnt words as possible.

I practice English with my dormitory mates and make most use of the words I have learnt.

I write English letters if the receiver knows English (English E-mail).

2. Affective Control (5 items)

I can concentrate on vocabulary study.

When I try to remember a word, I remind myself that I have a good memory.

When I can't recall a learned word, I often remind myself not to get upset.

When vocabulary learning outcomes are not satisfactory, I will encourage myself.

I do not get upset when encountering a complex new word.

Appendix E

Vocabulary Learning Strategies Questionnaire (Chinese Version)

非英语专业本科学生词汇学习策略调查问卷

亲爱的同学：

你好！以下是一份关于如何学习英语词汇的问卷。请你评价其中每项与你的实际情况相符合的程度。每项后面的五个数字分别代表不同的符合程度：

- 1——非常不符合；
2——比较不符合；
3——说不清楚（即有时符合，有时不符合）；
4——比较符合；
5——非常符合。

请你仔细阅读每一项并在后面相应的数字上划圈（“O”），请注意，对所有问题的回答均无正确与错误之分。最重要的一点是：确保你的回答尽可能与你的实际情况相符。你不必写上自己的姓名，请放心如实填写。

学院 专业 班级 性别 高考英语成绩

1、我能从词汇学习中获得成就感。	1	2	3	4	5
2、我购买词汇书籍并进行自学。	1	2	3	4	5
3、不管是在考试前还是在考试后，我都会复习有关词汇。	1	2	3	4	5
4、碰到新单词时，我知道是否需要记住它。	1	2	3	4	5
5、我常收看英语电视节目（或电影）或收听英语广播。	1	2	3	4	5
6、我知道哪些词汇是需要掌握的。	1	2	3	4	5
7、我有固定的词汇学习时间和学习量。	1	2	3	4	5
8、我常常与同学互相测试词汇。	1	2	3	4	5
9、词汇学习效果不明显时，我会鼓励自己别泄气。	1	2	3	4	5
10、我采用多种方法记忆单词。	1	2	3	4	5
11、我会用肢体演示某些词汇以强化对该词的印象（如：scratch—抓，挠）。	1	2	3	4	5
12、如果第一次没有猜出新单词的意思，我会用上下文其它线索再试一遍。	1	2	3	4	5
13、当碰到的新单词不是原形时，查字典时我会将其附加成分去掉（如：occurred-occur）。	1	2	3	4	5

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14、在宿舍用英语与室友对话并尽量使用所学词汇。	1	2	3	4	5
15、我把课上学到的常用词及其中文意思记在笔记本或课本上。	1	2	3	4	5
16、我学习了英语构词法以便更好地掌握词汇。	1	2	3	4	5
17、记单词时，我反复地边读边写。	1	2	3	4	5
18、我学唱英语歌曲并记住其中的新单词。	1	2	3	4	5
19、词汇学习不是一种机械性的活动。	1	2	3	4	5
20、老师经常测试我们学过的词汇。	1	2	3	4	5
21、记单词时，我会鼓励自己：自己的记忆力不错。	1	2	3	4	5
22、记单词时，我会联想到英语中与其发音相似的词（如：由 sling 想到 sting）。	1	2	3	4	5
23、记单词时，我会回忆出现该词的那个句子。	1	2	3	4	5
24、我利用常识来猜测新单词的词义。	1	2	3	4	5
25、查字典时，我只查那些经常在阅读中碰到的新单词。	1	2	3	4	5
26、我会主动寻找机会与外国人用英语交流。	1	2	3	4	5
27、猜测词义时，我会分析新单词的构词特点。	1	2	3	4	5
28、记单词时，我会默想多个中文对应词（如：“delight”——高兴、乐意、欣喜）。	1	2	3	4	5
29、我常口头练习英汉词汇的互译。	1	2	3	4	5
30、在阅读中碰到感兴趣的新单词，我会查字典。	1	2	3	4	5
31、我对学习英语词汇很感兴趣。	1	2	3	4	5
32、记单词时，我主要在心里重复它的发音来记住它。	1	2	3	4	5
33、我会阅读自己感兴趣的英文书籍并在阅读中学习其中的词汇。	1	2	3	4	5
34、当我不明白某些近义词的区别时，我会查字典。	1	2	3	4	5
35、在对方懂英语的情况下，我用英语与其沟通交流（如 E-mail）。	1	2	3	4	5
36、查字典时，除了查单词的意思，我还会阅读给出的例句。	1	2	3	4	5
37、我从全文入手检验我对新单词的猜测是否正确。	1	2	3	4	5
38、我将英语单词在头脑中分为不同领域的意义群（如：文学领域、经济领域等）来记忆。	1	2	3	4	5
39、我记单词时，会想象出相关的画面来记忆该单词。	1	2	3	4	5
40、碰到复杂难记的单词，我不会觉得烦。	1	2	3	4	5
41、除了所学课本，我还会在课外阅读感兴趣的其它英语	1	2	3	4	5

材料。					
42、我能坚持执行自己的词汇学习计划而不是三天打鱼两天晒网。	1	2	3	4	5
43、我只查那些对于理解文章起着关键作用的词。	1	2	3	4	5
44、我把所学单词的固定搭配记下来。	1	2	3	4	5
45、我用英语与同学交流并尽量使用所学词汇。	1	2	3	4	5
46、我把单词按照所属领域归类记忆（如：动物类、学科类等）。	1	2	3	4	5
47、记单词时，我会反复拼写该单词及其中文意思。	1	2	3	4	5
48、对于重要的词汇，我会划出来或记下来。	1	2	3	4	5
49、词汇学习是一种创造性的活动。	1	2	3	4	5
50、记单词时，我会用它造句以加强记忆效果。	1	2	3	4	5
51、当查出的词有多个义项时，我会根据句子提供的信息（如：词性等）排除不符合的义项。	1	2	3	4	5
52、记笔记时，我会把涉及该词语法意义的内容（如：词性，不规则动词等）记下来。	1	2	3	4	5
53、我常常跟着磁带反复朗读与拼写单词。	1	2	3	4	5
54、我定期有计划地复习前面学过的词汇。	1	2	3	4	5
55、如果词汇学习效果不明显，我会中途修改计划。	1	2	3	4	5
56、记单词时，我会联想到与该词意思相近或相反的其他单词来加强对该词的记忆。	1	2	3	4	5
57、在阅读中碰到新单词时，如果能查字典，我会马上查。	1	2	3	4	5
58、我把同义词及其对应的反义词记在笔记本中。	1	2	3	4	5
59、记单词时，我会分析其前缀、后缀及词根。	1	2	3	4	5
60、我认为重复朗读记不住想记的词汇。	1	2	3	4	5
61、我分析新单词所在句子的语法结构来猜测新单词意思。	1	2	3	4	5
62、查字典时，我不仅查看单词的中文意思，还会注意其英语解释。	1	2	3	4	5
63、我会在上下文中通过其它的词或短语来确认我对新单词的猜测是否正确。	1	2	3	4	5
64、记单词时，我会联想到与其发音相似的中文。	1	2	3	4	5
65、用英语写日记并尽量运用所学词汇。					
66、我有明确的词汇学习目标和计划。	1	2	3	4	5
67、记单词时，我会通过想象该词的意象来强化对该词的记忆。	1	2	3	4	5

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68、我根据上下文判断新单词的词性并利用其词性来猜测词义。	1	2	3	4	5
69、当查出的词有多个义项时，我知道该选哪一个。	1	2	3	4	5
70、记笔记时，我常把单词的相关表达或短语记下来。	1	2	3	4	5
71、我常去英语角并尽量使用所学词汇。	1	2	3	4	5
72、记单词时，我会把它与其中的某些字母组合在拼写及意义上联系起来记忆。	1	2	3	4	5
73、我常常自己测试词汇学习效果（如根据中文写出英语单词）。	1	2	3	4	5
74、死记硬背不是记住英语词汇的关键。	1	2	3	4	5
75、记单词时，我会将其归类到学过的同义词或反义词中。	1	2	3	4	5
76、记单词时，我会联想到与其拼写相似的其它英语单词（如由 bark 想到 bar）。	1	2	3	4	5
77、我在课后常看英文杂志或报纸以扩大词汇量。	1	2	3	4	5
78、我喜欢根据上下文猜测词义，这很有意思。	1	2	3	4	5
79、我把英语单词或与其发音相似的中文联系起来并想象出与之相关的画面来记忆单词。	1	2	3	4	5
80、我了解常用的构词规则并能在记忆词汇时实际运用它们。	1	2	3	4	5
81、查字典时，我会注意该词的固定搭配及其相关短语。	1	2	3	4	5
82、记笔记时，除了单词的中文意思，我还会把例句记下来。	1	2	3	4	5
83、当要查的新单词是不规则形式时，查字典时我会浏览周围的词以找出其原形。	1	2	3	4	5
84、我以某一主题为中心记忆词汇（如“sports”为中心组建意义网络）。	1	2	3	4	5
85、对于学过的单词，当我想了解它的其它用法时，我会查字典。	1	2	3	4	5
86、我不喜欢一个字母一个字母地记忆单词。	1	2	3	4	5
87、查出新单词的意义后，我会检查该义项是否与上下文相符。	1	2	3	4	5
88、我把单词放在上下文中记忆（如：短语和句子中）。	1	2	3	4	5
89、在阅读中碰到新单词时，我会将其划出来或记下来，读完文章后再查字典。	1	2	3	4	5
90、记单词时，我主要采用其它方法而不是反复朗读的方法来记忆。	1	2	3	4	5
91、我常常听磁带写单词。	1	2	3	4	5
92、当我对某个单词的英语解释中的某个词感兴趣时我会	1	2	3	4	5

查这个词。					
93、我认为反复拼写单词也记不住单词。	1	2	3	4	5
94、我能够静下心来学习词汇而不受干扰。	1	2	3	4	5
95、在文章中碰到新单词时，我会根据上下文来猜测其意思。	1	2	3	4	5
96、只有当一个词妨碍了我对整个句子或段落的理解时，我才会查字典。	1	2	3	4	5
97、在课外阅读中碰到感兴趣的新单词，我会查字典并将该词与其中文意思记在笔记本上。	1	2	3	4	5
98、我特意背诵了常用的前缀、后缀及词根。	1	2	3	4	5
99、我常把词汇笔记本或书带在身边并随时复习（如：等车时）。	1	2	3	4	5
100、我会把查过的单词及其意思与例句都记在笔记本上。	1	2	3	4	5
101、我主要是将单词读出声来并按照其音标音节记忆单词。	1	2	3	4	5
102、在阅读中我重点注意那些有助于理解文章的关键词。	1	2	3	4	5
103、查字典的同时，我会有意识地去记忆它。	1	2	3	4	5
104、猜测新单词词义时，我知道如何利用上下文中的有用线索。	1	2	3	4	5
105、我的英语词汇主要来源于英语课、作业及其它课外阅读材料。	1	2	3	4	5
106、我利用新单词前后出现的例子来猜测词义。	1	2	3	4	5
107、我把字典中查到的同（反）义词及其中文解释都记在笔记本中。	1	2	3	4	5
108、玩英语游戏（包括电脑游戏）时会尽量记住其中的新单词。	1	2	3	4	5
109、我觉得词汇学习很有乐趣。	1	2	3	4	5
110、我不仅学习老师在课堂上要求掌握的词汇，还学习其它常用词汇。	1	2	3	4	5
111、在想不起学过的词时，我会提醒自己不要着急。	1	2	3	4	5
112、我利用上下文的逻辑关系来猜测词义（如因果关系等）。	1	2	3	4	5
113、学好词汇需要动脑子、想法子，我觉得很有意思。	1	2	3	4	5
114、在阅读中碰到新单词时，我知道哪些需要查字典，哪些不需查字典。	1	2	3	4	5
115、当我想确认对词汇的猜测是否正确时，我会查字典。	1	2	3	4	5
116、在词汇学习上，我不会学了后面的又忘了前面的。	1	2	3	4	5

请检查是否有遗漏未答之项。

Appendix F
Internal Consistency Reliability of the Questionnaire

<i>Strategies</i>	<i>No. of Cases</i>	<i>No. of Items</i>	<i>Alpha (a)</i>
Beliefs	164	8	0.779
Metacognitive Strategies	164	28	0.863
Plan-making	164	5	0.748
Selective attention	164	7	0.707
Learner autonomy	164	9	0.754
Reviewing/Testing	164	7	0.557
Cognitive Strategies	164	70	0.934
MEMORIZATION	164	33	0.860
Repetition	164	11	0.616
Association	164	6	0.743
Imagery	164	4	0.670
Word formation	164	4	0.753
Grouping	164	4	0.623
Contextualization	164	4	0.635
GUESSING	164	10	0.858
Immediate context	164	4	0.688
Wider context	164	6	0.833
DICTIONARY USE	164	19	0.853
For comprehension	164	6	0.532
Looking-up	164	5	0.641
Elaborate use	164	8	0.813
NOTE-TAKING	164	8	0.744
Meaning-oriented	164	4	0.731
Use-oriented	164	4	0.747
Social /Affective Strategies	164	10	0.735
Social activities	164	5	0.770
Affective control	164	5	0.702
Total	164	116	