國立政治大學英國語文學系碩士在職專班碩士論文

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台北市國中生單字能力及性別在單字策略使用上的差異之研究

A Study of Vocabulary Proficiency and Gender Differences in English

Vocabulary Learning Strategies Used by Junior High School Students in Taipei

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國立政治大學英國語文學系碩士在職專班

碩士論文摘要

論文名稱: 台北市國中生單字能力及性別在單字策略使用上的差異之研究

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論文提要內容:

　　本研究主要探討台北市國中生的單字能力及性別差異是否影響其英語單字策略的使用。主要目標欲(1)探究三組單字能力組別在單字策略使用上的差異；(2)探討男女生使用單字策略的頻率；(3)發現單字策略使用上的性別差異；(4)確認單字能力組別內，在單字策略使用上的性別差異；以及(5)從性別的角度來說明單字策略使用的規則。

　　共有來自台北市區一所國中的 203 位學生參與本研究。研究工具為單字策略使用問卷及英語單字能力測驗。前者用來引出學生所認為的單字策略使用方式，而後者則是用來將學生依單字能力分成高中低三組。資料分析採用 SPSS 12.0 版本，分析工具包含描述性統計、單因子變異數分析、及獨立樣本 t 檢定。本研究結果指出：

(1) 單字能力越高的學生，傾向使用較多的單字策略，尤以決定策略、社會策略、記憶策略、及後設認知策略最為顯著。

(2) 整體而言，男生及女生使用單字策略的頻率皆不高。男女生皆最常使用決定策略，最少使用後設認知策略。

(3) 除在整體策略、決定策略、記憶策略、認知策略有顯著較高的使用頻率外，女生也比男生較常使用與歸類相關單字、運用學習工具作手寫練習、及聽力練習等相關的單一策略。

(4) 單字能力組別內，亦發現十七個單一策略具有顯著的性別差異。大部份策略顯示女生運用的頻率較高。然而高分組男生使用聽英文廣播及想像單字畫面比高分組女生較

頻繁，且中間組別的男生較女生常使用分析字根字首。

(5) 對男女生而言，發音及意思是學習單字中最難的兩部份。雙方在有效的策略上有所共識，但在無效果的策略上意見有些分歧。至於教師協助的需求方面，男生偏好動態的單字練習，女生則較喜歡靜態的學業練習。

最後，本研究建議教師應該介紹學生更多元的單字策略，尤其是低成就的學生；進行以策略為主的教學時，將性別差異納入考量；就單字能力及性別差異的交互關係，進一步了解學生單字策略的偏好。

關鍵字：單字能力、單字策略、性別

Abstract

This study investigated vocabulary proficiency and gender differences in English vocabulary learning strategies (VLS) used by junior high school students in Taipei. The goals were to (1) explore the differences in VLS use among three vocabulary scoring levels, (2) to investigate the frequencies use of VLS by male and female students, (3) to find out gender differences in VLS use, (4) to indentify gender difference in VLS use in terms of vocabulary scoring level, and (5) to illustrate the patterns of VLS use in gender perspectives.

A total of 203 junior high school students from an urban school in Taipei City were involved in the study. A vocabulary learning strategy questionnaire (VLSQ) and an English vocabulary proficiency test (EVPT) were administered as instruments. The former was used to elicit the self-report strategy use by the students and the latter was utilized to categorize the participants into three vocabulary levels. The data was analyzed by employing SPSS version 12.0, including descriptive analysis, one-way analysis of variance, and independent t-Tests.

A summary of the results are as follows. (1) The higher vocabulary level students belonged to, the more VLS they tended to apply, especially determination strategies, social strategies, memory strategies and metacognitvie strategies. (2) Both male and female students could be regarded as moderate users of VLS. Both groups favored determination strategies the most and metacognitive strategies the least. (3) Besides a significantly more frequent use of overall strategies, determination strategies, memory strategies and cognitive

strategies, female students also tended to use more often individual strategies concerning grouping related words together, writing practice with study aids and auditory practice. (4) Significances found in each scoring group seemed to favor female students in strategy use, except three strategies, analyzed affixes and roots by the Intermediate-Scoring group, listening to English broadcast and image word's meanings by the High-Scoring group. (5) To both genders, the most difficult aspects in learning vocabulary are pronunciation and meanings. As for the effectiveness of VLS, male and female students had the same opinions on the most five but thought slightly differently on the least five. Besides, sharing some similar needs for teachers' assistance, male students preferred dynamic vocabulary activities but female students favored academic vocabulary practice.

The findings suggest teachers should (1) introduce a variety of VLS to students, particularly those of lower levels, (2) take gender differences into consideration when administering strategies-based instruction, and (3) be aware of students' preferences of VLS use with both gender and vocabulary level perspectives.

CHAPTER ONE

INTRODUCTION

This introductory chapter serves as an overview of the present study, including four

sections. The first section offers the background and motivation of the study. The following

section contains the purpose of the study and research questions. Section 1.3 illustrates the

significance of the present study. The key terms in the present study are defined in the last

section.

1.1 Background and Motivation

Languages are for communication. To communicate with others successfully, one needs

to express her/his ideas clearly enough with the assistance of facial expressions, actions, or

words. Vocabulary, a primary factor in communication (Krashen & Terrel, 1983), is

considered important by language teachers and learners. Language learners tend to seek

mastery of a language through acquiring as much lexicon as they could. However, learners

could be easily short of words in an authentic communication condition. Due to such a

difficulty, applying proper language learning strategies (LLS) into vocabulary learning may

enhance the vocabulary bank of a learner. In addition, it is also suggested that the use of LLS

vary among different individuals because of their learning styles, experiences, personalities,

motivation, language proficiency or even their born nature, gender (Oxford & Nyikos, 1989).

Research has shown the importance of language learning strategies and learners'

differences in language learning. Cohen (1998) articulated that LLS are used by learners to

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improve their knowledge and to help obtain a better understanding of the target language. Among them, vocabulary learning strategies (VLS), which stem from LLS, are often applied by learners to advance their word bank. Once learners' lexicon size increases, their vocabulary ability will improve in using the language. In Taiwan, Chang (1990) found that professionals of high English proficiency apply learning strategies into their vocabulary learning. In other words, language learning techniques and strategies are helpful and personalized. While individual differences may be crucial factors in the choice of LLS, proficiency levels and gender differences are found to have "a profound effect on strategy choice" (Oxford & Nyikos, 1989, p. 294). Moreover, Green and Oxford (1995) claimed that English proficiency and gender differences affect the strategy use. Thus, it seems that vocabulary ability and gender influence learners' choices of VLS, and both might play an important role in the success of vocabulary learning.

Recently, more research has been carried out into investigating the use of VLS by Asian students. Gu and Johnson (1996) launched a study in Chinese students with a proficiency perspective and discovered that students with a larger word bank tend to apply VLS more often. Next, Schmitt (1997) investigated VLS used by Japanese students and found that age and maturity might sway strategy use. Gu (2002) carried out a study on the differences of EFL college students' gender and their VLS in China. Results indicated that female students used more strategies than their male counterparts. However, as Rubin (1975) stated that strategy use differs in different cultural context, the result of studies on EFL contexts, such

as Japan and China, may not be properly applicable to Taiwanese situations.

In Taiwan, researchers have put more focus on the relationship between vocabulary learning strategies and vocabulary ability. These researchers, who were also in-service teachers themselves, offered firsthand information of students from elementary schools, high schools and colleges (Chen, 1998; Chen, 2004; Cheng, 2006; Kung, 2004; Liao, 2004; Lin, 2006; Tung, 2007; Wang, 2004). Results from these research showed that students of various English levels differ in their choice of VLS.

From the studies above, researchers and teachers seem interested in finding out a pattern of frequency use of VLS or possible influential factors on the choice of VLS. With their efforts, invaluable insights into strategies-based instruction have benefited teachers in vocabulary teaching and learners in vocabulary learning.

Though several studies in Taiwan have done much on VLS by students of different ages, there is still paucity in literature to put an emphasis on the relationship between the use of VLS and gender differences. Besides, the relationship among vocabulary proficiency, gender differences and the choice of VLS is still unknown. Therefore, more studies should be carried out by taking the two variables into account.

Moreover, junior high school students in Taiwan are required to learn at least 1200 words, which is not an easy load for most students. According to Cheng (2006), learning the target vocabulary well is difficult due to the limited time of four class hours weekly. Consequently, it seems quite important for teachers to provide helpful guidance on

vocabulary acquisition after knowing how their young learners learn vocabulary based on students' proficiency levels and gender differences. This also calls for more research into VLS with different perspectives.

1.2 Purpose of the Study and Research Questions

As for the purposes of the study, the first goal is to indentify whether vocabulary proficiency may affect the choice of VLS among junior high school students in Taipei. If the answer is positive, further discussion will center on the differences of strategy use that vocabulary levels cause. The second purpose of the study is to find out the frequency of VLS use by male and female students. The third aim is to examine whether gender differences affect the use of VLS. If the differences exist, the research will further explore in what way gender differences may influence the use of VLS. Then, another purpose is to investigate to what extent the vocabulary proficiency and gender differences would relate to the choices of VLS. The last purpose tries to gather related information about strategy use by genders.

According to the purposes mentioned above, the present study intends to answer the following research questions:

1. Do junior high students of High-Scoring, Intermediate-Scoring and Low-Scoring vocabulary proficiency levels use vocabulary learning strategies differently? If they do, what would the differences of vocabulary learning strategy uses be?

2. What are the vocabulary learning strategy uses of male and female students in junior high school in Taipei?

3. Are there any differences of the use of vocabulary learning strategies between genders of

    junior high school students in Taipei? If yes, what would the differences of vocabulary

    learning strategy uses be?

4. Will learners' vocabulary proficiency relate to the choices of vocabulary learning

    strategies between genders?

5. What are students' difficulties of vocabulary learning and reasons for using vocabulary

    learning strategy in a gender perspective?

1.3 Significance of the Study

The present study might offer some significances from two aspects based on the

purposes above. First, given the fact that little research has been carried out to investigate

gender on the choice of VLS, the study aimed to examine the frequency of VLS use and

significances of strategy use between male and female junior high school students. The

results have shown a higher frequency use by female students than by male students in

general. The findings of the present study could be helpful for in-service teachers to have a

better understanding of the differences on VLS use between genders, consequently assisting

teacher's strategies-based instruction of vocabulary teaching.

Besides, when taking vocabulary proficiency into consideration, the results showed that

male students tended to use certain strategies significantly more often. For example, male

students in the High-Scoring level were reported a more frequent use of listening to English

broadcast, the finding of which suggests that teachers could encourage female students of

higher vocabulary proficiency to use strategies involving listening to authentic text like English broadcast. Therefore, gender differences in vocabulary levels on strategy use also bring insight to teachers who could directly help students of different levels and different genders on the use of VLS.

1.4 Definitions of Terms

To offer a better understanding to readers, three important terms are defined as follows according to the purpose and the focus of the present study.

1.4.1 Vocabulary Proficiency

According to Nassaji (2004), vocabulary proficiency refers to two aspects, breadth and depth of vocabulary knowledge. After reviewing previous research (Meara, 1996; Nation, 2001), he summarizes the breadth of vocabulary knowledge as "the quantity or number of words learners know at a particular level of language proficiency" (p. 389) and defines the depth of vocabulary knowledge as "the quality of lexical knowledge, or how well the learner knows a word" (p. 390). In the present study, the three vocabulary levels were categorized based on the size of students' word bank, which is believed to be the breadth of vocabulary knowledge by researchers. Besides, since the participants involved are required to learn 1200 words according to Ministry of Education, Taiwan, an English vocabulary proficiency test was employed to assess how much words the participants has learnt and the results were treated as criteria of their vocabulary proficiency levels.

1.4.2 Vocabulary Learning Strategies

It is never an easy task to define VLS (Nation, 2001); however, strategies in vocabulary learning involve the discovery of words' meanings and consolidation of a word (Schmitt, 1997). Based on the features of VLS, Schmitt regards that VLS are applied by learners consciously to help the discovery of the meanings on their own or through interaction with others, enhance the retention of words through auditory and visual practice, and activate the production of target vocabulary. In the present study, VLS refers to those in Schmitt's taxonomy, including five main categories: determination strategies, social strategies, memory strategies, cognitive strategies, and metacognitive strategies.

1.4.3 Gender

Sex, a biological term, divides people into male and female, while gender, a social term, distinguishes men from women with social attributes. The term, gender, is chosen in the present study because the term, sex, seems to narrow the differences between males and females by ignoring the influences of socialization. According to Nyikos (1990), males and females are required to learn "socially sanctioned gender-appropriate behaviors" (p. 273) and the socialized distinction between two genders is reinforced particularly in the daily language use. Therefore, the differences between male and female junior high students would be better illustrated with a gender perspective, instead of a biological one.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

In the field of second language acquisition (SLA), researchers, teachers and learners have been working on how to help advance the outcome of language learning. Provided with different supporting values in the leading teaching methods, it is also observable that the focus of the classroom activities has also drifted from teacher-oriented to student-oriented (Schmitt, 2010a). Consequently, how learners acquire a language has attracted more attention lately, especially those involving specific actions that learners would take to improve four basic skills and lexical knowledge of the target language.

The present study aims to survey different uses of vocabulary learning strategies (VLS) from two perspectives: vocabulary proficiency and gender preferences. Before reviewing VLS in detail, Section 2.1 offers a concise review of language learning strategies (LLS) first because VLS could be regarded as a stem from LLS with the application of LLS into vocabulary learning (Oxford, 1990). Then, the following section displays a thorough review of VLS, which are the main focus of the study. Section 2.3 reviews related studies on the effect of influential factors, vocabulary proficiency and gender differences, on strategy use. The last section reviews former studies on VLS use in Taiwan.

2.1 Language Learning Strategies

Learning strategies have drawn much attention from SLA investigators for decades and research has also shown that good language learners use more and individualized strategies. Rubin (1975) first indicated that, to excel in language learning, a good learner applies personalized learning techniques and participates more actively and creatively in the learning process, instead of relying only on a high degree of proficiency and motivation. In other words, learners may better their language ability through the adoption of special skills on language learning, i.e., language learning strategies (LLS).

2.1.1 Definitions and Features of Language Learning Strategies

LLS have been focused by researchers for decades since studies began to emphasize on the way to improve learners' language proficiency of all aspects. LLS have been viewed as "complex cognitive skills" (O'Malley & Chamot, 1990, p. 215) or "specific actions" (Oxford, 1990, p. 8) that learners take consciously and semi-consciously to achieve "the explicit goal of improving their knowledge and understanding of a target language" (Cohen & Dornyei, 2002, p. 178). They influence learners mentally and behaviorally in encoding the learning process intentionally (Wenstein & Mayer, 1986). That is, LLS are applied purposefully by a learner to refine language skills and broaden required knowledge for the language. Research results have shown that good language learners use specialized and personalized strategies with a higher frequency. With the help of LLS, learners might overcome obstacles they meet in language learning in an easier way. What makes LLS helpful in language learning could

be attributed to that LLS are techniques in rich of particular features. Table 2.1 below shows

features of LLS concluded by Oxford (1990).

Table 2.1 Features of Language Learning Strategies

Language Learning Strategies
1. Contribute to the main goal, communicative competence.
2. Allow learners to become more self-directed.
3. Expand the role of teachers.
4. Are problem-oriented.
5. Are specific actions taken by the learner.
6. Involve many aspects of the learner, not just the cognitive.
7. Support learning both directly and indirectly.
8. Are not always observable.
9. Are often conscious.
10. Can be taught.
11. Are flexible.
12. Are influenced by a variety of factors.

Source: Oxford (1990), p. 9

It is clear to see from the features of LLS above that language learners adopt LLS to

solve problems consciously and systematically for a certain purpose of improving the overall

ability of the target language. As a result, the application of LLS may play an important and

positive part in the task of language learning.

2.1.2 Classification of Language Learning Strategies

With the regard to the beneficial aspects that LLS seem to have, a closer look at the

classification of LLS is necessary. Firstly, Rubin (1981) divided LLS into two classes based

on the ways LLS directly or indirectly affect language learning. These two classes are direct

strategies and indirect strategies, the ideas of which were borrowed by Oxford (1990) when

she intended to divide LLS into various categories.

In another study, Bialystok (1978) not only recognized the importance of LLS on SLA but also proposed a classification of LLS, which she thought cognitive in nature and which she viewed as a mental process of language learning. Her classification of two categories, which were divided based on the requirements learners need on acquiring necessary knowledge, include formal strategies (linguistic form) and functional strategies (language use). The former category is comprised of formal practicing and monitoring, which involve learning the L2 consciously or automatizing the acquired explicit knowledge intentionally. The latter category contains functional practicing and inferencing, which are meant to increase exposure to the target language through communication.

Next, O'Malley et al. (1985) proposed a classification with a theoretical anchorage on the cognitive theory of information-processing model by Brown and Palinscar (1982). After interviews and observations at high school classrooms of English as a Foreign Language (EFL) learners, they indentified two main strategies categories of LLS: metacognitive strategies and cognitive strategies, which concern different aspects of language learning. The former are related to all kinds of self-directed learning processes, such as planning, monitoring, and evaluating, whereas the latter are mainly about the manipulation of certain learning tasks by using materials. Later, based on the classification scheme, O'Malley and Chamot (1990) further presented another strategy category, social-affective strategies, which involves social interactions with others or affective control over learning tasks. The

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classification cut a path for the following development on the classification of LLS by

Oxford (1990).

Based on the concept of the directness of LLS by Rubin (1981), Oxford also classified

LLS into direct and indirect classes; the former consists of memory strategies, cognitive

strategies, and compensation strategies, the latter includes metacognitive strategies, affective

strategies, and social strategies. Among the six main strategy categories, Oxford further

developed a complete taxonomy, Strategy Inventory of Language Learning (SILL), which

contains a large number of individual language learning strategies, offering an illustration of

possible skills taken in language learning. As "perhaps the most comprehensive

classification of language learning strategies to date" (Ellis, 1994, p. 539), she has offered a

good model for coming researchers who intend to explore the use of LLS by learners all over

the world. As follows, here presents her classification of LLS and the definitions of each

strategy categories (Oxford, 1990).

    1. "Direct strategies require mental process of the language" (p. 37).

        (1) Memory strategies, such as grouping or using imagery, have a highly specific

        function: helping students store and retrieve new information.

        (2) Cognitive strategies, such as summarizing or reasoning deductively, enable

        learners to understand and produce new language by many different means.

        (3) Compensation strategies, like guessing or using synonyms, allow learners to

        use the language despite their often large gaps in knowledge.

2. "Indirect strategies are applicable to all four language skills" (p. 135).

(1) Metacognitive strategies allow learners to control their own cognition—that is, to coordinate the learning process by using functions such as centering, arranging, planning and evaluating.

(2) Affective strategies help to regulate emotions, motivations, and attitudes.

(3) Social strategies are called indirect because they support and manage language learning without (in many instances) directly involving the target language.

According to her, LLS are considered both applicable to and effective in all four language skills, especially to vocabulary learning. Therefore, LLS not only positively enhance language learning in general, but also could be successfully adopted into all subareas of language learning, one of which is the primary focus of the study, vocabulary learning.

2.2 Vocabulary Learning Strategies

Since decades ago, research has been carried out into investigation on LLS, pinpointing at the issue with various foci. For instance, researchers have emphasized on generating the definitions of LLS (O'Malley & Chamot, 1990; Oxford, 1990; Wenstein & Mayer, 1986), on proposing the classifications of LLS (Bialystok, 1978; O'Malley et al., 1985; O'Malley & Chamot, 1990; Oxford, 1990; Rubin, 1981), or on examining the relationship between language proficiency and LLS use (Green & Oxford, 1995; O'Malley et al., 1985; Oxford &

Nyikos, 1989). With a wider range of investigations on LLS from various perspectives, a

growing body of literature seems interested in the application of LLS into vocabulary

learning.

2.2.1 Vocabulary Learning

Among all aspects of language learning, vocabulary learning has attracted much

attention from learners, teachers and researchers. As McCarthy (1990) states:

"*No matter how well the student learns grammar, no matter how successfully the*

sounds of L2 are mastered, without words to express a wider range of meanings,

communication in an L2 just cannot happen in any meaningful way" (p. viii).

Therefore, in order to communicate with others successfully, vocabulary is fundamental

in transmitting meaningful information required. Gass and Selinker (1994) even regard

lexicon "the most component for learners" (p. 270); that is, vocabulary could be so

significant that learners could not underestimate the value of it.

Due to the importance of vocabulary in learning a language, much attention has been

paid to the way a learner know a new word. Before that, it deserves more discussion on the

factors that affect vocabulary acquisition. According to Hedge (2000), some factors that

might affect vocabulary acquisition are to do with input, the properties of which include

frequency, pronunciation and contextualization of a word. A word of higher frequency

appears more often in the texts and increases learners' exposure to it, therefore, causing less

difficulty in acquiring the word, and vice versa. As for pronunciation, it gains a lot of

practice at the beginning level in order to correctly recognize the stress of the word, thus

enhancing the comprehension of a listening passage. Another feature is contextualization,

which involves putting an unknown word in a contextual text. This serves a way to help

learners retain the unknown word through the information provided from the whole text.

Hedge further suggests activities concerning contextualization could be strategies for

vocabulary learning, which might reduce the difficulty of the word and enhance the

acquisition of the word.

Besides the factors mentioned by Hedge, Laufer (1997) also presents possible affecting

factors which might cause difficulties of learning a new word, such as pronounceability,

length and morphological complexity. The first factor, pronounceability, means to which

extent a second language learner could pronounce a word correctly. This also affects whether

the learner could perceive, say and remember the word accurately. Another two factors,

length and morphological complexity, are closely related. It is commonly believed that a

longer word might be more difficult than a short word. However, a long word which could

be divided into several parts based on the morphemes in it would not be as hard as a short

word with irregular forms. In other word, length could cause difficulty but what really

matters in the complexity of morphemes in the word.

Being important in language learning but difficult in acquisition itself, vocabulary is

suggested to be learned from meaning-focused input (i.e., listening and reading) and output

(i.e., speaking and writing) by Nation and Meara (2002). They further recommend deliberate

vocabulary learning due to its higher effectiveness compared with indirect learning.

According to them, learning vocabulary directly involves more exposure to the target

language through four skills and requires training of strategy use in broadening vocabulary

knowledge. Therefore, a more systematic application of learning strategies into vocabulary

learning seems inevitable.

2.2.2 Definitions of Vocabulary Learning Strategies

Research into vocabulary learning strategies (VLS) have been considered to stem from

LLS because most LLS in Oxford's (1990) classification, especially those of memory

strategies, are related to learning vocabulary (Pavičić, 2009). As stated by Ellis (1994) that it

is likely to define VLS accurately, Jiménez Catalán (2003) tried to offer a complete

definition for VLS after reviewing Brown and Payne's (1994) five processes of learning

vocabulary:

> "*knowledge about the mechanisms (process, strategies) used to learn vocabulary*
>
> *as well as specific actions or mental operations taken by learners to (a) find out the*
>
> *meaning of unknown words, (b) retain them in long-term memory, (c) recall them at will,*
>
> *and (d) use them in oral or written mode*" (p. 56).

In other words, when learners encounter unknown words in their learning, they tend to

recall the information existed in their mind, or they might utilize some strategies to get for

the meanings out. Thus, it is very important for learners to know what strategies they can use

in vocabulary learning and to use them successfully, consequently improving overall

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vocabulary bank in a more effective and systematic way.

2.2.3 Classification of Vocabulary Learning Strategies

Since 1980, a number of studies have been carried on VLS. Many researchers have also

devoted their efforts offering an appropriate classification of VLS. Among the early

researchers on VLS, most of them tried to indentify certain beneficial individual strategies,

such as memorization strategies (Cohen & Aphek, 1981), rote repetition strategies (O'Malley

et al., 1985), or note-taking strategies (Ahmed, 1989), or strategies concerning guessing from

the context (Huckin, Haynes & Coady, 1993). Nevertheless, Skehan (1989) states that there

exist needs for a comprehensive taxonomy of VLS, which, according to Schmitt (1997),

should include deeper cognitive processing of information and shallow strategies of rote

learning. Therefore, in the late nineties, more researchers started to offer a more

comprehensive classification of VLS (Stoffer, 1995; Gu & Johnson, 1996; Schmitt, 1997).

Stoffer (1995) offered a complete classification, Vocabulary Learning Strategy Inventory

(VOLSI), which identifies nine major strategies as follows:

1. Strategies involving authentic language use

2. Strategies used for self-motivation

3. Strategies used to organize words

4. Strategies used to create mental linkages

5. Memory strategies

6. Strategies involving creative activities

7.   Strategies involving physical action

8.   Strategies used to overcome anxiety

9.   Auditory strategies

As can be seen, Stoffer's classification has included most related and essential strategy categories that directly involve vocabulary learning, such as memory strategies or grouping strategies.

In another study on Chinese students, Gu & Johnson (1996) mainly aimed to find out the frequency of VLS use with the examination on students' beliefs about vocabulary learning and the comparison between language learning outcomes and the use of VLS. After reviewing prior qualitative and quantitative studies (Ahmed, 1989; Gu, 1994; Oxford, 1990) and deleting redundant items found in their earlier two pilot studies, Gu and Johnson (1996) proposed the Vocabulary Learning Questionnaire (VLQ, Version 3). Their classification includes seven major categories:

1.   Metacognitive regulation

2.   Guessing strategies

3.   Dictionary strategies

4.   Note-taking strategies

5.   Memory strategies: rehearsal

6.   Memory strategies: encoding

7.   Activation strategies.

Slightly different from Stoffer's, Gu and Johnson presented a more detailed

classification which includes dictionary use for unknown words and note-taking strategies

for review.

Then, Schmitt (1997) conducted a further research into vocabulary in order to offer a

valid classification of VLS. He collected lots of information from three main sources: earlier

literature or references on vocabulary, self-reports of strategy use by Japanese students and

teachers' review on the list of VLS according to their teaching experiences. Based on Cook

& Mayer's (1986) and Nation's (1990) Discovery/ Consolidation distinction and Oxford's

(1990) classification on LLS, Schmitt (1997) grouped a wider taxonomy which divides

vocabulary strategies into two major categories and six sub-categories:

1. Strategies for the discovery of a new word's meaning

(1) Determination strategies (DET) are used by an individual when facing with

discovering a new word's meaning without resource to another person's expertise.

(2) Social strategies (SOC) use interaction with other people to find out a new word's

meaning.

2. Strategies for consolidating a word once it has been encountered

(1) Social strategies (SOC) use interaction with other people to improve vocabulary

learning.

(2) Memory strategies (MEM) relate new material to existing knowledge.

(3) Cognitive strategies (COG) exhibit the common function of manipulation or

transformation of the target language by the learner.

(4) Meta-cognitive strategies (MET) involve a conscious overview of the learning

process and making decisions about planning, monitoring, or evaluating the best

way to study.

Schmitt's taxonomy also offered a list of individual VLS in more detail, concluding 58

strategy items in six sub-categories (see Appendix A). The present study has chosen

Schmitt's taxonomy as the main tool to elicit the participants' frequency of strategy use due

to several reasons. First, Schmitt's extensive list of VLS primarily stems from Oxford's

(1990) classification of LLS, which has been considered as a comprehensive one (Ellis,

1994). Besides, Schmitt himself conducted a research by using his taxonomy on Japanese

learners of all ages, including junior high school students like those in the current study. Also,

Schmitt's taxonomy has been adopted as the main tool for the inquiry of VLS use by learners

from different countries, such as Kudo's (1999) Japanese learners and Chen's (1998)

Taiwanese participants. Last, according to Cheng (2006), most research into VLS in Taiwan

was carried out based on Schmitt's taxonomy; as a result, comparison could be better

discussed across studies which adopt the same strategy classification scheme.

2.2.4 Factors Influencing Strategy Choice

No matter which classification is chosen as the research tool, there exists another key

issue on the research into VLS. As Rubin (1975) states, some important factors might affect

the selection of strategies, such as students' age and cultural differences. With the regard to

the factor, age, Schmitt (1997) found in his Japanese studies that the emphasis on spelling or form decreases when the learners mature. This indicates that the preference of strategy use seems to be under the influence of age, which reflects the maturity of one person. In addition, to call papers on whether strategy use is culturally different, Oxford (1996) edited a pile of studies in her book, one of which is Kaylani's (1996). Her investigation compared the use of LLS by Spanish students and Jordanese students and found similarities on memory strategy use but differences on social strategy use. In another study by Jiménez Catalán (2003), the results also revealed that not only Spanish learners but Japanese learners were in favor of certain strategies, such as dictionary use. Therefore, Jiménez Catalán concludes that some strategies might be universal for people from very different cultures.

Besides age and cultural factors, Oxford (1990) further adds other variables that influence strategy use: motivation, learning styles, and sex. Among the three factors, motivation seems to have attracted much attention from researchers in the field of SLA. Oxford (1990) assumes that the more highly language learners are motivated, the greater range of appropriate strategies they tend to apply. The claim is in line with Dörnyei's (2001) assumption that motivation is one of significant variables on the choice of strategy use. However, it is believed that motivation is highly related to the outcomes of L2 learning. In other words, with a higher motivation, learners might outperform others on proficiency tests, resulting with a higher level of general language competence. Due to its close relationship with motivation, proficiency has been studied as an important variable when it comes to

strategy use (Green & Oxford, 1995; Oxford & Nyikos, 1989; Park, 1997).

In addition to motivation, Oxford goes on stating, " General learning style, such as field dependence-independence, analytic-global orientation, or the judging-perceiving mode, has a strong effect on the strategies that language learners use" (1990, p. 13). Her statement is supported by the findings in Oxford and Nyikos (1989) that learning style is one of the deciding factors that influence the choice of strategy use. As for gender differences, it is commonly believed that girls have better verbal ability than boys, stimulating some researchers to take the factor into consideration in language learning (Green & Oxford, 1995; Oxford & Erhman, 1989). The results reach an agreement that girls tend to have a greater use of overall strategies than do boys.

To explore deeper into strategy use and offer a substantial body of literature on strategy preferences, investigators have carried out more research into the field of language learning from different perspectives based on their own interests. Among possible variables reviewed above, proficiency and gender differences on the selection of strategy will be main foci in the current study.

2.3 Studies on Proficiency and Gender Differences on Strategy Use

As stated in the former section, literature will firstly stress on reviewing the effect of proficiency on the strategy use. Next, studies on gender differences will be presented in the following sub-sections.

2.3.1 Language Proficiency and Language Learning Strategies

General language proficiency, as an important factor on strategy use, has been studied since early 1970s. Rubin (1975) and Stern (1975) pioneered in investigating features of good language learners and found that they tend to pay more attention to their own learning with a more active attitude by adopting strategies concerning cognitive and metacognitive thinking. Being inspired by former researchers, Oxford (1995) researched on the effect of language proficiency on strategy use with her associate, Green. Believing that good language learners seem to apply a large number of LLS, such as " taking advantage of practice opportunities", "willingly and accurately guessing," or "consciously developing the L2 as a meaning system and a structure system" (p. 262), they found more successful learners seem to have a greater use of LLS and use several LLS in combination properly. In another study on Korean college students, Park (1997) grouped learners according to the frequency use of LLS and their performance on TOEFL test, aiming on the relationship between learners' L2 proficiency and the use of LLS. The results not only showed a high correlation between the two but also revealed that cognitive strategies and social strategies could be the most possible predicators of L2 proficiency.

2.3.2 Vocabulary Proficiency and Vocabulary Learning Strategies

Strongly related to general English proficiency (Nation & Meara, 2002), vocabulary proficiency has been studied as a key variable in the choice of VLS since the late 1980s. During the last two decades, studies have been carried out by many researchers, several of

whose investigations involve English as a Second Language (ESL) or English as a Foreign Language (EFL) students (Ahmed, 1989; Gu & Johnson, 1996; Nassaji, 2006).

An early study was carried out by Ahmed (1989) to investigate 300 good and poor language learners from Sudan on the application of strategies into learning lexis. The results showed that more successful learners adequately employed more strategies in vocabulary learning. Besides, less successful learners were not as aware of the importance of VLS as those more advanced ones.

In the following decade, Gu and Johnson (1996) put their focus on the relationship between vocabulary size and the use of VLS. They expressed that the use of VLS is positively correlated to the learners' English proficiency and vocabulary size after investigating 850 EFL college students in China. The results also showed that both metacognitive strategies and cognitive strategies emerged positively correlated to vocabulary size. However, participants in their study did not rely on strategies concerning memorization skills as much as Asian students were expected to. Instead, they "reported using more meaning-oriented strategies than rote strategies in learning vocabulary" (p. 668). In other words, the use of metacognitive and cognitive strategies varies among Chinese learners of different vocabulary sizes. Also, the findings that repetitive strategies were not frequently used by Chinese learners were in line with Fan's (1999) study in Hong Kong, but in disagreement with other studies on Asian participants (Schmitt, 1997; Chen, 1998).

More recently, Nassaji (2006) carried out another investigation in ESL contexts in Canada on the relationship between participants' vocabulary knowledge, their use of inferencing strategy and the ability to guess meanings from the contexts. The results indicated that students with higher lexical knowledge employ VLS in a more frequent and efficient way. In other words, the larger word size language learners have, the more frequently and successfully they apply VLS. The research findings agree with the results of the studies reviewed above (Ahmed, 1989; Gu & Johnson, 1996).

Besides studies on the relationship between vocabulary proficiency and the use of VLS, Jiménez Catalán (2003) suggests more research should be called to take another variable, gender differences, into consideration in the field of vocabulary acquisition. To trace back to all previous studies in history, gender differences have been widely studied in biological, psychological and sociological perspectives since early 1900s. In 1970s, SLA researchers started investigating the relationship between language and gender. A decade later, a time when LLS reached their maturity, researchers sought to find out how gender differences might affect the choice of language learning strategies. Among all the researchers, Oxford and her colleagues have devoted their efforts on the investigation into gender differences on the use of LLS.

2.3.3 Gender and Language Learning Strategies

Beginning a study on his Australian ESL students a year earlier before Oxford launched a series of investigations, Willing (1988) found gender differences on LLS but failed to

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"clearly separate[d] women from men on the basis of any underlying sensory preferences" (Cited in Oxford, 1993, p. 549). Oxford and Nyikos (1989) next conducted a survey on 1200 university students and proved that gender differences did affect strategy use in a great deal. They found that female students used a more and wider range of strategies than their male peers. At the same year, Oxford investigated gender as a variable with Ehrman and claimed strongly that in overall "[w]omen definitely report more use of strategies than men" (1989, p. 8). Besides conducting research on the topic, Oxford (1993) also reviewed the results of two former studies and concluded that female significantly had a greater use of cognitive strategies, social strategies and affective strategies than male, while no agreement was reached on whether significant differences existed or favored which sex in light of the use of memory strategies or meta-cognitive strategies.

Later, Green and Oxford (1995) also took a closer look at the relationship between gender, L2 proficiency and learning strategies in another study, including 374 college participants in Puerto Rico. The findings were consistent with those in the previous studies that women had a higher use of learning strategies than men on fourteen individual strategies, most of which were memory strategies, cognitive strategies and social strategies. On the contrary, men, compared with women, reported a greater use of watching TV or movies in English.

Moreover, Kaylani (1996) carried out another study in Jordan, focusing on the effect of gender differences and motivation on LLS use. The results of 255 Jordanese high school

students showed that there were significant gender differences on the use of overall LLS. As for strategy categories, female students reported a significantly greater use of memory strategies, cognitive strategies and affective strategies. However, no significant gender differences were found on the use of meta-cognitive strategies and social strategies. She concluded several possible explanations for the results, some of which were different social status or career expectations of men and women, and the traditional culture of Muslim in Jordan.

The findings above contributed to searching the possible patterns of strategy use between male and female, consequently setting up models for subsequent researchers to further discuss VLS use with a gender perspective.

2.3.4 Gender and Vocabulary Learning Strategies

Gu (2002) studied the relationship between gender differences and VLS. A total number of 645 Chinese students from various academic majors in college participated in the investigation of the use of VLS. The results showed that gender played a more important role than academic major. Besides, female students, who outperformed their male peers on the vocabulary tests, were found to use more metacognitive strategies and cognitive strategies significantly. Gu offered an explanation of the results with a Chinese social belief: Girls should do better than boys on language learning. To save their faces, female students spent more time studying English after school, therefore resulting with a more outstanding performance and a higher use of VLS by female participants.

Later in Spain, Jiménez Catalán (2003) conducted a study of 581 college level participants, focusing mainly on gender preferences on the use of VLS. Adopting Schmitt's (1997) taxonomy, she suggested that female students adopted more discovery strategies and consolidating strategies than their male peers though both groups generally favored some same strategies, such as using a bilingual dictionary, using English-language media, and etc. Given that gender differences on general strategy use, she explained the reason might be due to the higher motivation and the more positive attitude to excel on language learning by female learners than by male learners. Besides, she found out gender differences on memory strategy use might suggest different learning styles and learning preferences by male and female learners. Her findings corroborated with the results of some previous research (Reid, 1987; Oxford, 1994) that men tend to be visual and tactile style while women to be auditory style.

Though these studies above have concentrated on the effect of either vocabulary proficiency or gender differences on the choice of VLS, it is unclear if the differences on the use of VLS were affected by both vocabulary proficiency and gender. In addition, as Wharton's (2000) and Olivares-Cuhat's (2002) implications, students of various cultural backgrounds might have distinctive preference for strategies. Previous research findings might not be applicable to Taiwan's EFL context, and accordingly, it seems necessary to look at the studies on VLS in Taiwanese context.

2.4 Studies on Vocabulary Learning Strategies in Taiwan

In Taiwan, many researchers have studied of VLS in an EFL context (Chen, 1998; Chen, 2004; Cheng, 2006; Kung, 2004; Liao, 2004; Lin, 2006; Tung, 2007; Wang, 2004). The participants involved in these studies ranged from elementary school students to college students. The foci were aimed from eliciting the frequency of strategy use to the effect of English proficiency or vocabulary proficiency on strategy use. The way these studies are reviewed here is based on the education background of the participants involved.

2.4.1 Studies on College Students

Chen (1998) researched on VLS used by 174 college students and 81 senior high school students. She aimed to compare the result of Taiwanese students with Japanese students. The results showed that both group shared similarities and differences of strategy use. They favored the use of bilingual dictionary, regarded guessing from the context as a helpful one, thought verbal and written repetition the most useful ones, and paid much attention to form and structure.

To further investigate the frequency of vocabulary learning strategy use, Liao (2004) adopted Schmitt's (1997) taxonomy in her research, involving 625 college students. The results illustrated that determination strategies were utilized the most frequently by college students while metacognitive and social strategies were less adopted. As for individual strategies, her findings are inconsistent with those discovered in Chen's (1998) study. As pioneer studies in researching the use of VLS, Chen and Liao have inspired the following

researchers to explore to which extent English proficiency or vocabulary proficiency relates to vocabulary learning strategies.

2.4.2 Studies on Senior High School Students

Wang (2004) investigated 271 senior high school students' VLS use. Her aim was to explore the frequency and the differences of VLS use between good and poor learners. She found that the most frequently used strategies by senior high school students were cognitive strategies while social strategies and metacognitive strategies were the least two. Besides, learners' vocabulary size was positively and significantly correlated with their strategy use and significances on strategy use were found between good and poor learners. Given that good learners tended to learn new words in context while poor ones learned new words in isolation, Wang suggested teachers teach students with VLS, especially those deeper strategies related to contexts.

In Lin's (2006) study, the participants were students of high and low English proficiency from vocational high school. With a total of 180 students involved, her study mainly focused on the relationship between the use of vocabulary memorization strategies and English proficiency. The findings also showed a similar result as Wang's (2004) that more strategies were used by students of higher proficiency level than by those of lower proficiency level. More specifically, the former not only used more strategies but also combined different strategies in learning vocabulary while the latter just resorted to certain strategies in isolation. As a result, Lin (2006) suggested teacher enhance students'

vocabulary learning by offering strategy-based instructions after acknowledging distinct

idiosyncrasy of students.

Another study (Tung, 2007) emphasized on the differences of VLS between

academic-oriented and vocational-oriented students. Her participants were 648 students from

comprehensive high schools, which combine both academic (senior high) and vocational

(vocational high) education. The findings showed significances on the use of VLS between

academic-oriented students and vocational-oriented students, which the former used more

determination strategies while the latter memory strategies. As for vocabulary level

differences, good learners utilized more overall VLS than poor learners, especially those for

knowing a word's meaning.

2.4.3 Studies on Junior High School Students

Chen (2004) carried out a qualitative study which investigated vocabulary

memorization strategies used by 6 high and low English proficiency students in a junior high

school. She found that more various strategies were used by the 3 high proficient students

than the other 3 low ones. Also, while students of high English proficiency used various

strategies in different learning occasions, the low students tended to rely much on the

strategy of written repetition to memorize the spellings, being in short of the help of

pronunciation due to the difficulty of pronouncing words correctly. Therefore, Chen

suggested teachers instruct students with the techniques of using VLS effectively.

Cheng (2006) selected 147 junior high school students in her study. She focused on the

relationship of VLS use and vocabulary proficiency and the findings corroborates with those of Wang's (2004). She claimed that students of different vocabulary proficiency favored different VLS and had various frequency use of VLS. To be more specific, the higher their vocabulary proficiency was, the more VLS they tended to use, and vice versa. Moreover, the way of strategy use also varied by students of different vocabulary levels. While students of higher vocabulary proficiency paid more attention to the textual contexts and had higher motivation of using various VLS at their disposal, students of lower vocabulary proficiency paid much less attention to the sound of a word and lack of positive and active attitude towards the use of VLS. Consequently, Cheng (2006) suggested teachers offer the way of using strategies with deeper processing or those that combine guessing and dictionary use, and help enhance students' awareness of the effectiveness and the importance of VLS.

2.4.4 Studies on Elementary School Students

With an emphasis on the effect of English proficiency on strategy use, Kung (2004) also adopted Schmitt's (1997) taxonomy and examined 64 elementary school students who were respectively of high and low English proficiency levels. A comparison was made on their use of VLS. She claimed that positive correlation existed between English proficiency and the size or the frequency of VLS used. The findings also implied that the higher English proficiency students were, the higher the frequency of strategy use was.

Studies in Taiwan reviewed above have indicated that English proficiency and vocabulary proficiency are both crucial factors in the frequency and the choice of VLS use.

Therefore, it can be suggested that students of different English or vocabulary levels use different VLS.For the purposes of the study, the information about the foci and participants of the above studies are summarized in Table 2.2 below:

Table 2.2 Studies on Vocabulary Learning Strategies in Taiwan

	Subjects' Background				Factors		
	E	J	S	C	English Proficiency	Vocabulary Proficiency	Gender
Chen (1998)			✔	✔			
Laio (2004)				✔			
Wang (2004)			✔			✔	
Lin (2006)			✔		✔		
Tung (2007)			✔			✔	
Chen (2004)		✔			✔		
Cheng (2006)		✔				✔	
Kung (2004)	✔				✔		

Note. E= elementary school; J= junior high school; S= senior high school; C= college

As shown in Table 2.2, studies in Taiwan have paid much attention to the use of VLS by students of different ages. Most of the studies tried to examine how VLS use relate to either English proficiency (Chen, 2004; Lin, 2006; Kung, 2004) or vocabulary proficiency (Cheng, 2006; Tung, 2007; Wang, 2004). However, little research has been done to discover in what way gender might affect the choice of VLS use, letting alone the probe into the relationship of vocabulary proficiency and gender differences. Therefore, it deserves more attention on the use of VLS with these two perspectives.

CHAPTER THREE

METHODOLOGY

This chapter includes 4 sections. The first section describes the background information and the selection method of the participants in the present study. The following section specifies the development and construction of instruments used, i.e. English Vocabulary Proficiency Test and Vocabulary Learning Strategy Questionnaire. In the next section, the procedure of the research is explained in detail step by step. The last section illustrates the tools applied for data analysis with descriptive and inferential statistics.

3.1 Participants

A total number of 203 students from a junior high school in Da-an District, Taipei, were involved in the present study. They were 9th graders with an average age at 15.5 from six intact classes, averagely 34 students from each class. They started their formal English instruction from 1st grade in elementary schools. In other words, they had learned English at least for eight years by the time at which they were investigated.

The participants in the present study were divided into three scoring groups according to the scores of English Vocabulary Proficiency Test (Chang, 2009), which they were required to take. The High-Scoring level (H-S) contains 75 participants who answered 25 to 36 items correctly, the Intermediate-Scoring level (I-S) consists of 81 students who accurately responded to 13 to 24 items, and the Low-Scoring level (L-S) comprises 47 subjects who got 0 to 12 right items.

3.2 Instruments

In examining students' vocabulary proficiency and the frequency of vocabulary

learning strategies (VLS), the researcher employed two instruments: an English vocabulary

proficiency test and a vocabulary learning strategies questionnaire.

3.2.1 English Vocabulary Proficiency Test (EVPT)

Chang's (2009) English vocabulary proficiency test (EVPT) was adopted to evaluate

English vocabulary proficiency of 9th graders in junior high schools. It was constructed on

the basis of the essential 1200 words for junior high students in accordance to the modified

Grade 1-9 Curriculum Guidelines issued by the Ministry of Education, Taiwan (2008). Its

reliability of a test, 0.895, and the result of the criterion-related validity showed a significant

correlation (P < 0.01) between the participants' semester performance and their EVPT

grades.

The EVPT consisted of two sections: multiple choice and gap-filling. The former was

designed to test students' ability of words for recognition, while the latter was to evaluate

students' ability of words for application. Each item was constructed in a context that was

able to offer enough contextual information for testees to choose or write the correct answer.

As for parts of speech, frequency of daily use was taken into consideration, and 36 keys were

included, including 11 nouns, 11 verbs, 9 adverbs and 5 adjectives (see Table 3.1).

Table 3.1 The Distribution of Parts of Speech in EVPT

Parts of Speech	Item Number	Subtotal
Nouns	2, 4, 8, 9, 13, 23, 24, 25, 29, 33, 36	11
Verbs	1, 3, 6, 10, 14, 15, 17, 22, 26, 28, 30	11
Adverbs	7, 12, 16, 19, 21, 27, 31, 32, 34,	9
Adjectives	5, 11, 18, 20, 35,	5

However, due to the situation change, item 8 (i.e. Taipei 101 is the tallest _____ in the world now) was revised to "Taipei 101 '*was*' the tallest _____ in the world before 2010."

As for the scoring of EVPT, the participants got one point for answering one item correctly. In other words, the total score ranged from 0 to 36. According to Nation (1990), learners are considered to compose the ability of the target words tested if they correctly answer over two-third items in a valid vocabulary proficiency test. On the other hand, learners are thought to rarely know the target words if they fail to answer at least one-third items in the vocabulary test. Then, the researcher categorized all the participants into three groups based on their scores. Students in the High-Scoring level (H-S) have to get 25 to 36 items right, the Intermediate-Scoring level (I-S) 13 to 24, and the Low-Scoring level (L-S) 0 to 12.

3.2.2 Vocabulary Learning Strategies Questionnaire (VLSQ)

A vocabulary learning strategy questionnaire (VLSQ) was adapted from Schmitt's (1997) taxonomy of VLS. It contains three parts (see in Appendix B): (1) questions about the participants' background information, (2) 60 statements of VLS used, and (3) information

about the participants' strategy use.

In the first section, questions included the participants' basic personal information, such as their age and gender, and their experience in English learning, that is, years of English learning, the amount of time they spend on English vocabulary weekly and complementary English classes after school.

In the next section, the participants were asked to give information about the use of 60 strategies. These 60 strategies were divided into five strategy categories proposed: determination strategies, social strategies, memory strategies, cognitive strategies and metacognitive strategies. As for the 60 strategies, ten strategies in Schmitt's taxonomy were excluded in VLSQ, including 3 determination strategies, 5 memory strategies, 1 cognitive strategy and 1 metacognitive strategy (see Table 3.2). Some strategies were deleted because they are rarely used by or unfamiliar to Taiwanese students, such as cognate, flash cards, and word list (Cheng, 2006). Also, some memory strategies are deleted because they are more complicated and take more sophisticated and mature processing, such as semantic maps, Peg Method and Loci Method (Schmitt, 1997).

Table 3.2 The List of Unfamiliar Strategies

Category	Strategy
Determination strategies (DET)	● Check for L1 cognate
	● Word lists
	● Flash cards
Memory strategies (MEM)	● Use semantic maps
	● Peg Method
	● Loci Method
	● Use cognates in study
	● Use semantic feature grids
Cognitive strategy (COG)	● Flash cards
Metacognitive strategy (MET)	● Use spaced word practice

Besides, twelve new strategies were included because of different reasons. First, from the observation of the researcher, 3 determination strategies were added due to the frequent use of dictionary use by today's students. Secondly, 3 social strategies were included in the list because of the suggestions of previous researchers (Cheng, 2006; Wang, 2004).

Moreover, students applied a variety of English media in vocabulary learning, so another 6 metacognitive strategies were in the list (Wang, 2004). The twelve strategies added could be seen from Table 3.3 below.

Table 3.3 The List of New Strategies

Strategy	
Determination strategies (DET)	● Use bilingualized dictionary (English and Chinese explanation)
	● Use electronic dictionary
	● Use online dictionary
Social strategies (SOC)	● Ask teacher for synonym of new word
	● Ask family for meaning
	● Practice meaning with family
Meta-cognitive strategy (MET)	● Read English magazine
	● Read English novel
	● Read English newspaper
	● Listen to English songs
	● Listen to English broadcast
	● Watch English newscasts

For better understanding, most of the sixty strategies were explained with proper description or illustration. Take the strategy, "Written repetition" for example. It was illustrated like this: "When you learn a new word, you will write the word for many times to enhance your memory.

As for the scoring of the 60 strategies, a 5-point Likert scale was employed. Namely, the participants responded to each statement by choosing from five options (never, seldom, sometimes, usually and always) based on the frequency of the strategies in their vocabulary learning.

The last section explored students' strategy use by asking the participants to write about the most and least effective strategies and the reasons why they thought so. For more data, one question was to elicit the participants' difficulties in vocabulary learning, which might suggest the lack of use of certain strategies. In order to offer a guide for in-service teachers in teaching VLS, one question was to collect students' needs of teachers' assistance in class.

3.2.3 Validity

The validity of VLSQ was taken into account from four aspects. Firstly, VLSQ in the present study could be thought as a questionnaire with a high content validity because the five categories in Schmitt's were still intact. Secondly, as for the 10 deleted and 12 added strategies and open-ended questions in the last section, they were suggestions from prior researchers (Cheng, 2006; Wang, 2004). Thirdly, the Chinese translation was carefully interpreted by the researcher and compared with those in Wang's and Cheng's study. VLSQ

here has also been meticulously proofread by three English teachers who took relating courses of translation before. Moreover, most of the 60 strategies were illustrated with an example; consequently, the possibility of the misunderstanding was reduced.

3.3 Procedures

After the construction of EVPT and VLSQ, the procedure of the study was conducted in two stages: the pilot study and the main study.

3.3.1 The Pilot Study

Before the main study, a pilot study was carried out to examine the reliability of EVPT and VLSQ, and one 9th Grade class in Taipei City was involved. In the pilot study, the researcher introduced the two instruments first. Then, EVPT and VLSQ were delivered to the students separately, and 20 minutes were given to complete each instrument.

After that, Cronbach's alpha coeffiecent was used to examine the internal consistency reliabilities of the two instruments. Cronbach's alpha for the EVPT and the VLSQ was .929 and .945, both of which were considered as high reliabilities (see Table 3.4).

Table 3.4 Reliabilities of EVPT and VLSQ

Instrument	Numbers of items	Cronbach's alpha
EVPT	36	α= .929
VLSQ	60	α= .945
Determination strategies (DET)	9	α= .752
Social strategies (SOC)	11	α= .890
Memory strategies (MEM)	22	α= .755
Cognitive strategies (COG)	8	α= .830
Metacognitive strategies (MET)	10	α= .820

Given the fact that some participants spent too much time answering some open-ended questions (Q2 & Q3), one revision was made after reliability analysis in the pilot study. That is, due to the time limit, the participants in the main study were asked to answer 2 most/least effective strategies and were encouraged to offer possible reasons for the answers.

3.3.2 The Main Study

The procedure of the main study was divided into three phases: the introduction of the instruments, the administration of EVPT and the administration of VLSQ.

First of all, the six classes were involved in the study during different class period and the whole procedure was conducted by the researcher himself. At the beginning, the two main instruments were first introduced to the target participants. When the participants understood the primary aims, the investigation was carried out. Secondly, participants were asked to complete EVPT. The test took the participants around 20 minutes. Once EVPT was finished, students moved on to the next stage. Thirdly, students started filling out the questionnaire in 20 minutes. While filling in the VLSQ, they were also encouraged to feel free to ask questions about the questionnaire for further explanation. After the three stages, data was collected.

3.4 Data Analysis

After data collection, this investigation employed both quantitative analysis and qualitative analysis after the classification of three different vocabulary proficiency levels. Quantitative analysis in this study included descriptive statistics, t-Test and analysis of

variance (ANOVA). To determine whether the differences between vocabulary scoring levels or those between genders contain significances, the significant levels were set as $p < .05$ and $p < .005$. As for the scoring of the 60 strategies, a 5-point Likert scale was employed. In other words, one to five individually represents the five options (never, seldom, sometimes, usually and always). Take the option, never, for instance, the strategy reported to be never used by the participants was graded as one. Similarly, the other options (seldom, sometimes, usually and always) were respectively graded as two, three, four and five.

Descriptive statistics was first calculated to reveal the mean scores of vocabulary learning strategies used by participants investigated. Then, one-way ANOVA was applied to compare the mean scores of the frequency strategy use by the three vocabulary proficiency levels. The procedure was to see whether there existed any significant differences on VLS uses between groups. When significances on strategy use were found, the post-hoc Scheffé test was employed to examine how the three groups differed from each other.

Next, to answer research question 2, frequencies of strategy use by both genders were calculated. The mean scores of strategy use showed how often male and female students applied VLS. In each strategy category, the preferences of certain strategies by genders will be clearly seen, which showed the most and the least favored strategies by both genders as well. Independent-sample t-Test was used to examine whether there existed any significant gender differences on strategy use. Given that positive answers were confirmed, further examination on mean differences was made to see which gender the strategy was in favor of.

Moreover, advanced discussion utilized t-Test again to explore whether gender differences existed in any of the three different proficiency levels, which answered research question 4. In each vocabulary group, the mean scores of male and female students were compared to see whether the strategy contained significant gender differences. If the answer was positive, the strategy was discussed in terms of gender differences and vocabulary proficiency.

For qualitative analysis, data from open-ended questions in the last section of VLSQ were to answer the last research question. Provided with the reported strategy use, reasons for the most or the least effective strategies were used to explain the results. In addition, the types of difficulties in vocabulary learning or the students' needs of teacher's assistance were classified into several major categories, which served as hints for improvement or dedication in vocabulary teaching. As for the coding system, each extract from a student was encoded. For instance, C1S2 in an extract means that the source was from Class 1 Student 2. The numbers of female students range from 1 to 20, and those of male students are from 21 to 40.

CHAPTER FOUR

RESULTS

This chapter attempts to report the results of the statistical analysis collected from 203 ninth graders in a junior high school in Taipei City. The participants in the present study were divided into three scoring groups according to the scores of English Vocabulary Proficiency Test (Chang, 2009). The High-Scoring level (H-S) contains 75 participants who answered 25 to 36 items correctly, the Intermediate-Scoring level (I-S) consists of 81 students who accurately responded to 13 to 24 items, and the Low-Scoring level (L-S) comprises 47 subjects who got 0 to 12 right items. The chapter consists of five sections. Section 4.1 presents the frequencies of vocabulary learning strategy (VLS) use of the three vocabulary levels. Section 4.2 shows how often male and female junior high school students use VLS. The third section displays gender differences on strategy use. The next section provides the results of independent sample t-Test of gender differences and vocabulary level on strategy use. Section 4.5 offers the difficulties, the most effective and least effective strategies, reasons, and needs for teachers' assistance from the participants' points of view.

4.1 Vocabulary Level Differences of Vocabulary Strategy Use

This section displays the results of the relationship between vocabulary strategy use and vocabulary level. The effect of vocabulary levels on overall strategy use and the use of strategy categories will be presented, followed by the effect of vocabulary level on the sixty individual strategies.

4.1.1 Vocabulary Level and Use of Overall Strategy and Five Strategy Categories

One-way ANOVA was applied to show the differences on vocabulary strategy use

among the three vocabulary levels. As in Table 4.1, overall strategy use differed significantly

among three scoring groups (F = 11.550, p< .005). H-S shows the highest frequency of

overall strategy use ($\overline{\text{X}}$= 2.72), followed by I-S ($\overline{\text{X}}$= 2.50) and L-S ($\overline{\text{X}}$= 2.33). In other words,

only students in H-S and I-S could be regarded as moderate users of overall strategies. To see

how the three groups differed from one another in overall strategy use, the results of the

post-hoc Scheffé test shows the significance was between H-S, and I-S and L-S (i.e., H> I,

H> L).

Table 4.1 ANOVA Results of Vocabulary Level and Overall Strategy Use

Strategy	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Overall	High	2.72	0.42	11.550**	H > I,
	Intermediate	2.50	0.46		H > L
	Low	2.33	0.50		

** p < .005

As for the strategy used by the three groups (see in Table 4.2), apart from cognitive

strategies, significance was found in four categories: determination strategies (F = 14.116,

p< .005), social strategies (F = 4.692, p< .05), memory strategies (F = 7.950, p< .005), and

metacognitive strategies (F =17.094, p< .005). The results of the post-hoc Scheffé test

displayed that the use of the four categories was slightly different. In the use of two strategy

categories, determination strategies and metacognitive strategies, L-S differed eminently

from either H-S or I-S (i.e., H > L, I > L). As for social strategies, only H-S used them

slightly more often than L-S prominently (i.e., H > L). Regarding the use of memory

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strategies, H-S used them significantly more often than I-S and L-S, sharing the same pattern

with that of overall strategy use (i.e., H > I, I > L).

Table 4.2 ANOVA Results of Vocabulary level and Strategy Categories Use

Strategy Description	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Determination Strategies	High	3.19	0.54	14.116**	H > L, I > L
	Intermediate	2.97	0.71		
	Low	2.57	0.60		
Social Strategies	High	2.43	0.56	4.692*	H > L
	Intermediate	2.34	0.58		
	Low	2.11	0.56		
Memory Strategies	High	2.77	0.56	7.950**	H > I, H > L
	Intermediate	2.50	0.54		
	Low	2.38	0.63		
Cognitive Strategies	High	2.66	0.63	0.090	
	Intermediate	2.66	0.52		
	Low	2.62	0.69		
Metacognitive Strategies	High	2.58	0.62	17.094 **	H > I, I > L
	Intermediate	2.14	0.56		
	Low	2.03	0.55		

* p < .05, ** p < .005

In brief, the use of the three vocabulary levels tended to differ from one another in the

use of overall strategy and the four strategy categories, except cognitive strategies. Generally

speaking, H-S used vocabulary strategies more often than L-S prominently, except in

metacognitive strategies. Moreover, I-S used slightly more often than L-S in determination

strategies and metacognitive strategies, while they employed fewer strategies than H-S in

overall strategy, memory strategies and metacognitive strategies.

4.1.2 Vocabulary Level and Individual Strategy Use

In order to know the effect of vocabulary levels on individual strategy use, the mean

scores of the three levels in each strategy were compared by adopting one-way ANOVA

analysis. The following will present the results of each category respectively.

4.1.2.1 Determination Strategies

The results in Table 4.2 showed that over half of the determination strategies were

found to be significant, including analyzing part of speech (F =25.495, p< .005), analyzing

affixes and roots (F =7.347, p< .005), guessing from textual context (F =21.813, p< .005),

English-Chinese dictionary (F =4.822, p< .05), and English-English dictionary

(F =9.573, p< .005).

Table 4.3 ANOVA Results of Vocabulary Level and Determination Strategy Use

Strategy Description	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Analyze part of speech	High	3.39	1.05	25.495**	H > I, H > L
	Intermediate	2.52	1.12		
	Low	2.09	0.88		
Analyze affixes and roots	High	3.39	1.05	7.347**	H > I, H > L
	Intermediate	2.86	1.09		
	Low	2.68	1.14		
Analyze any available pictures and gestures	High	3.83	1.11	1.953	
	Intermediate	3.85	1.10		
	Low	3.47	1.23		
Guess from textual context	High	4.49	0.72	21.813**	H > L, I > L
	Intermediate	4.28	0.85		
	Low	3.47	1.04		
English-Chinese dictionary	High	3.25	1.32	4.822*	H > L
	Intermediate	3.02	1.34		
	Low	2.51	1.16		
English-English dictionary	High	1.92	0.90	9.573**	H > I, H > L
	Intermediate	1.49	0.78		
	Low	1.34	0.56		
Bilingualized dictionary	High	2.39	1.30	1.814	
	Intermediate	2.30	1.32		
	Low	1.96	0.98		
Electronic dictionary	High	3.17	1.30	0.992	
	Intermediate	3.43	3.62		
	Low	2.79	1.27		
Online dictionary	High	2.84	1.25	0.352	
	Intermediate	2.96	1.26		
	Low	2.79	1.18		

* p < .05, ** p < .005

After the post-hoc Scheffé test, all the results showed that H-S significantly had higher frequencies of strategy use than L-S. As for the differences between H-S and I-S, the former was found to significantly use three strategies, analyzing part of speech, analyzing affixes and roots and English-English dictionary, more often than the latter. Besides the relationship of H-S with the other two groups, I-S and L-S were found to have significant difference only on the use of guessing from textual context.

In other words, H-S tended to use more strategies that require analysis of lexical knowledge or look-up in dictionaries than the other two groups (i.e., H > I, H > L). Besides, H-S and I-S both guessed from the context more often than L-S (i.e., H > L, I > L).

4.1.2.2 Social Strategies

The results in Table 4.4 show that significance was found in five social strategies, including asking teacher for paraphrase of new word (F =4.687, p< .05), asking teacher for synonym of new word (F =3.443, p< .05), asking teacher for a sentence including the new word (F =4.440, p< .05), discovering new meaning through group work activity (F =3.846, p< .05), and interacting with native speakers (F =15.542, p< .005).

Table 4.4 ANOVA Results of Vocabulary Level and Social Strategy Use

Strategy Description	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Ask teacher for L1 translation	High	2.95	1.10	1.927	
	Intermediate	2.96	1.22		
	Low	2.57	1.17		
Ask teacher for paraphrase of new word	High	2.17	1.02	4.687*	H > L
	Intermediate	2.01	0.94		
	Low	1.64	0.82		
Ask teacher for synonym of new word	High	2.44	0.99	3.443*	H > L
	Intermediate	2.31	1.15		
	Low	1.94	0.94		
Ask teacher for a sentence including the new word	High	2.64	1.09	4.440*	H > L
	Intermediate	2.33	1.20		
	Low	2.02	1.05		
Ask classmates for meaning	High	3.35	1.07	2.671	
	Intermediate	3.75	1.02		
	Low	3.53	1.27		
Discover new meaning through group work activity	High	2.67	1.21	3.846*	H > L
	Intermediate	2.30	1.19		
	Low	2.11	0.98		
Ask family members for meaning	High	2.55	1.36	2.377	
	Intermediate	2.81	1.37		
	Low	2.30	1.14		
Study and practice meaning in a group	High	2.56	1.02	0.381	
	Intermediate	2.62	1.15		
	Low	2.45	1.00		
Teacher checks students flash cards or word lists for accuracy	High	1.31	0.54	1.206	
	Intermediate	1.23	0.68		
	Low	1.43	0.83		
Interact with native speakers	High	2.28	1.28	15.542**	H > I, H > L
	Intermediate	1.54	0.85		
	Low	1.40	0.54		
Practice new words with family members	High	1.84	1.01	0.003	
	Intermediate	1.83	1.08		
	Low	1.83	1.05		

* $p < .05$, ** $p < .005$

After the post-hoc Scheffé test, significant differences occurred between H-S and L-S

mainly in strategies related to asking teachers for help (i.e., H > L). However, apart from the

strategy of interacting with native speakers (i.e. H > I), no significance was found between

H-S and I-S in the other eight strategies. As can be seen, there is no significance between I-S

and L-S in all strategies.

4.1.2.3 Memory Strategies

Table 4.5 presents the results of memory strategies use of the three groups. Among the

twenty-two memory strategies, significance was found in twelve strategies. These were

associating the word with its coordinates (F = 3.217, p< .05), connecting the word to its

synonym and antonyms (F = 17.143, p< .005), using scales for gradable adjectives (F =

8.997, p< .005), grouping words together to study them (F =5.024, p< .05), using new word

in sentences (F = 15.272, p< .005), grouping words together within a storyline (F = 10.266,

p< .005), studying the sound of a word (F = 7.275, p< .005), image word form (F =3.766,

p< .05), affixes and roots (remembering) (F = 13.699, p< .005), part of speech (remembering)

(F = 8.168, p< .005), paraphrasing the words meaning (F = 15.654, p< .005), and learning

the words of an idiom together (F = 6.906, p< .005).

Table 4.5 ANOVA Results of Vocabulary Level and Memory Strategy Use

Strategy Description	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Study word with a pictorial presentation of its meaning	High	2.35	1.21	1.479	
	Intermediate	2.68	1.46		
	Low	2.64	1.01		
Image words meaning	High	2.79	1.28	1.596	
	Intermediate	2.62	1.39		
	Low	3.04	1.16		
Connect word to a personal experience	High	2.41	1.14	1.164	
	Intermediate	2.28	1.25		
	Low	2.62	1.17		
Associate the word with its coordinates	High	3.37	1.29	3.217*	None
	Intermediate	2.99	1.13		
	Low	2.85	1.23		
Connect the word to its synonyms and antonyms	High	3.16	1.05	17.143**	H > I > L
	Intermediate	2.57	1.09		
	Low	2.04	0.93		
Use scales for gradable adjectives	High	3.49	1.03	8.997**	H > L, I > L
	Intermediate	3.27	1.14		
	Low	2.62	1.24		
Group words together to study them	High	3.33	1.20	5.024*	H > I, H > L
	Intermediate	2.84	1.21		
	Low	2.68	1.30		
Group words together spatially on a page	High	2.19	1.06	0.000	
	Intermediate	2.19	1.14		
	Low	2.19	1.15		
Use new word in sentences	High	2.89	1.15	15.272**	H > I > L
	Intermediate	2.36	1.11		
	Low	1.81	0.82		
Group words together within a storyline	High	2.23	1.19	10.266**	H > I, H > L
	Intermediate	1.65	0.90		
	Low	1.47	0.80		
Study the spelling of a word	High	3.97	1.08	0.315	
	Intermediate	4.05	1.02		
	Low	3.89	1.18		
Study the sound of a word	High	4.01	0.95	7.275**	H > L
	Intermediate	3.57	1.13		
	Low	3.23	1.37		
Say new word aloud when studying	High	3.01	1.28	2.317	
	Intermediate	2.77	1.23		
	Low	2.51	1.32		

* p < .05, ** p < .005

Table 4.5 ANOVA Results of Vocabulary Level and Memory Strategy Use (Continued)

Strategy Description	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Image word form	High	1.49	0.86	3.766*	L > I
	Intermediate	1.49	0.71		
	Low	1.89	1.13		
Underline initial letter of the word	High	1.75	1.08	0.514	
	Intermediate	1.91	1.21		
	Low	1.77	0.94		
Configuration	High	1.29	0.63	1.255	
	Intermediate	1.17	0.47		
	Low	1.34	0.84		
Use Keyword Method	High	2.24	1.32	2.438	
	Intermediate	2.26	1.16		
	Low	2.72	1.44		
Affixes and roots (remembering)	High	3.72	1.02	13.699**	H > I, H > L
	Intermediate	2.95	1.18		
	Low	2.77	1.15		
Part of speech (remembering)	High	3.60	1.22	8.168**	H > L, I > L
	Intermediate	3.21	1.35		
	Low	2.60	1.48		
Paraphrase the words' meaning	High	2.67	1.20	15.654**	H > I, H > L
	Intermediate	1.86	0.95		
	Low	1.74	0.94		
Learn the words of an idiom together	High	3.16	1.23	6.906**	H > L
	Intermediate	2.74	1.10		
	Low	2.38	1.07		
Use physical action when learning a word	High	1.84	0.85	2.691	
	Intermediate	1.63	0.97		
	Low	1.47	0.78		

* p < .05, ** p < .005

After the post-hoc Scheffé test, the significance of memory strategies use could be classified into 5 types. Firstly, H-S applied two strategies significantly more frequently than the other groups, while I-S had a higher frequency than L-S too (i.e. H > I > L). Secondly, when it comes to grouping words together either to study them or within a storyline, remembering affixes and roots and paraphrasing the words' meaning, H-S eminently used

them more often than the other two groups; however, no significance was found between I-S and L-S (i.e. H > I, H > L). Thirdly, as for the two strategies, using scales for gradable adjectives and remembering parts of speech, L-S employed them significantly different from H-S or I-S (i.e. H > L, I > L). Fourthly, imaging word form was used differently and significantly between I-S and L-S. Unexpectedly, the latter used the strategy more often than the former (i.e., L > I). Lastly, no significance among the three levels was found in associating the word with its coordinates.

4.1.2.4 Cognitive Strategies

As stated in Section 4.1.1, the results in Table 4.6 showed that cognitive strategies were the only category without significant vocabulary level differences on strategy use. To further explore each individual cognitive strategy, only listening to the CD of word lists (F =3.105, p< .05) contained significant vocabulary level difference. It should be noted that the post-hoc Scheffé test results showed no significant difference among three groups. Put in another way, the three groups seemed to differ prominently from one another, but no relationship could be found to explain which group listened to CD of the word lists significantly more often.

Table 4.6 ANOVA Results of Vocabulary Level and Cognitive Strategy Use

Strategy Description	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Verbal repetition	High	3.93	1.17	1.677	
	Intermediate	4.25	0.90		
	Low	4.06	1.19		
Written repetition	High	2.99	1.30	1.193	
	Intermediate	3.20	1.35		
	Low	3.36	1.37		
Word lists	High	1.92	1.02	1.057	
	Intermediate	1.85	1.01		
	Low	2.13	1.13		
Take notes in class	High	3.76	1.15	1.333	
	Intermediate	3.85	1.16		
	Low	3.51	1.12		
Use the vocabulary section in your textbook	High	3.28	1.30	0.372	
	Intermediate	3.22	1.42		
	Low	3.06	1.36		
Listen to the CD of word lists	High	2.31	1.01	3.105*	None
	Intermediate	2.01	0.99		
	Low	1.89	0.84		
Put English labels on physical objects	High	1.36	0.69	0.773	
	Intermediate	1.32	0.59		
	Low	1.47	0.69		
Keep a vocabulary notebook	High	1.71	0.93	1.355	
	Intermediate	1.59	0.82		
	Low	1.45	0.77		

* $p < .05$

4.1.2.5 Metacognitive Strategies

While no significance was found in the strategy of testing oneself with word list, nine

metacognitive strategies revealed significant vocabulary level differences on strategy use. In

contrast to the results found in other categories, not only this category itself reached

significant level on the frequencies of strategy use among three vocabulary levels, but also

the significant levels were higher than others.

Table 4.7 ANOVA Results of Vocabulary Level and Metacognitive Strategy Use

Strategy Description	Vocabulary-Scoring	Mean	SD	F-value	Post-hoc
Watch English movies	High	3.37	1.29	10.511**	H > I,
	Intermediate	2.53	1.26		H > L
	Low	2.49	1.33		
Read English magazines	High	2.83	1.26	22.758**	H > I,
	Intermediate	1.98	1.02		H > L
	Low	1.57	0.77		
Read English novels	High	1.97	1.04	12.178**	H > I,
	Intermediate	1.42	0.72		H > L
	Low	1.32	0.59		
Read English newspapers	High	1.69	0.93	8.098**	H > I,
	Intermediate	1.32	0.61		H > L
	Low	1.21	0.46		
Listen to English songs	High	3.76	1.23	8.723**	H > I,
	Intermediate	2.98	1.36		H > L
	Low	2.96	1.32		
Listen to English broadcast	High	2.59	1.40	11.805**	H > I,
	Intermediate	1.80	1.09		H > L
	Low	1.66	1.01		
Watch English TV news	High	1.93	1.04	7.320**	H > I,
	Intermediate	1.46	0.81		H > L
	Low	1.43	0.68		
Test oneself with word lists	High	1.65	0.85	0.230	
	Intermediate	1.77	1.11		
	Low	1.72	1.17		
Skip or pass new word	High	3.28	1.07	3.744*	*None*
	Intermediate	3.72	1.09		
	Low	3.74	1.26		
Continue to study new word over time	High	2.75	1.09	5.025*	H > L
	Intermediate	2.41	0.95		
	Low	2.17	0.99		

* $p < .05$, ** $p < .005$

After post-hoc Scheffé test, seven strategies, concerning English media use, were found

that H-S differed from either I-S or L-S (i.e. H > I, H > L), while the other two groups did

not differ from each other significantly in these strategies. Moreover, H-S differed

significantly from L-S in continuing to study new word over time (i.e. H > L). Significance

was only found between H-S and L-S. However, no significance was found in the strategy of skipping or passing new word among the three levels.

4.2 Use of Strategies by Male and Female Students

This section shows the frequencies of strategy use by male and female students. First of all, the overall strategy use and the five category strategy use are displayed. Compared with one another, the five categories were ranked from 1 to 5 according to the frequencies of the strategy use by male and female students. Based on Oxford's (1990), the average of Strategy Inventory to Language Learning (SILL) (see Table 4.8) was adopted to describe the frequency of strategy use. As can be seen, the mean scores range from 1.0 to 5.0, and the frequency is divided into high ($\overline{X}$= 3.5-5.0), medium ($\overline{X}$= 2.5-3.4) and low use ($\overline{X}$= 1.0-2.4).

Table 4.8 Oxford's Key to Understanding SILL Averages

Frequency	Range	Description
High Use	4.5 to 5.0	Always or almost 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

4.2.1 Use of Overall Strategy and Strategy Categories by Male and Female Students

Average mean scores between genders are illustrated in Table 4.9 below. The results showed that the strategy use of male ($\overline{X}$= 2.46) and female students ($\overline{X}$= 2.66) reached medium use. In other words, both male and female students sometimes used overall strategies; therefore, they are likely to be moderate users VLS in general.

Table 4.9 Frequencies of Overall Strategy Use by Male and Female Students

		N	Mean	SD	Comments
Overall Strategy Use	Male	116	2.46	0.48	Medium Use
	Female	87	2.66	0.45	

Figure 4.1 below showed how frequently male and female students use the five strategy categories. The results could be seen from four aspects. First, female students had higher mean scores than male students in all the five categories. Second, male and female students shared the same pattern of preference on strategy categories: determination strategies were used the most, followed by cognitive strategies, memory strategies, social strategies and metacognitive strategies. Moreover, the mean scores of most categories were lower than 3.0, except that of determination strategies by female students. The top three categories belonged to medium use, while the other two cateogires belonged to low use. Fourth, the mean scores of social strategies and metacognitive strategies by both genders were lower than 2.4, which indicates male and female did not generally use these two strategy categories.
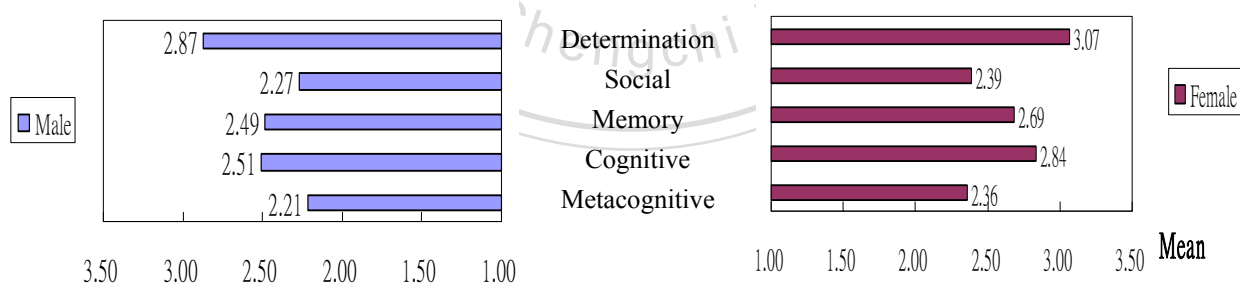
Figure 4.1 Frequencies of Strategy Category Use by Male and Female Students

4.2.2 Use of Individual Strategies by Male and Female Students

In the following subsections, the frequencies of individual strategy use by male and female students are presented.

4.2.2.1 Frequencies of Determination Strategies by Male and Female Students

The nine determination strategies used by male and female students are displayed in Figure 4.2 below. Generally speaking, female students had a higher frequency use than male students, except the strategy of analyzing affixes and roots. To examine each individual strategy in detail, the mean score of guessing from the textual context and analyzing any available pictures and gestures of both male and female was higher than 3.5. This indicates that male and female students both frequently applied these two determination strategies. Besides the two strategies, male and females students just sometimes utilized another five strategies with mean scores ranging from 2.73 to 3.57. As for the remaining two strategies, the use of bilingualized dictionary and English-English dictionary of both male and female students was lower than 2.5.
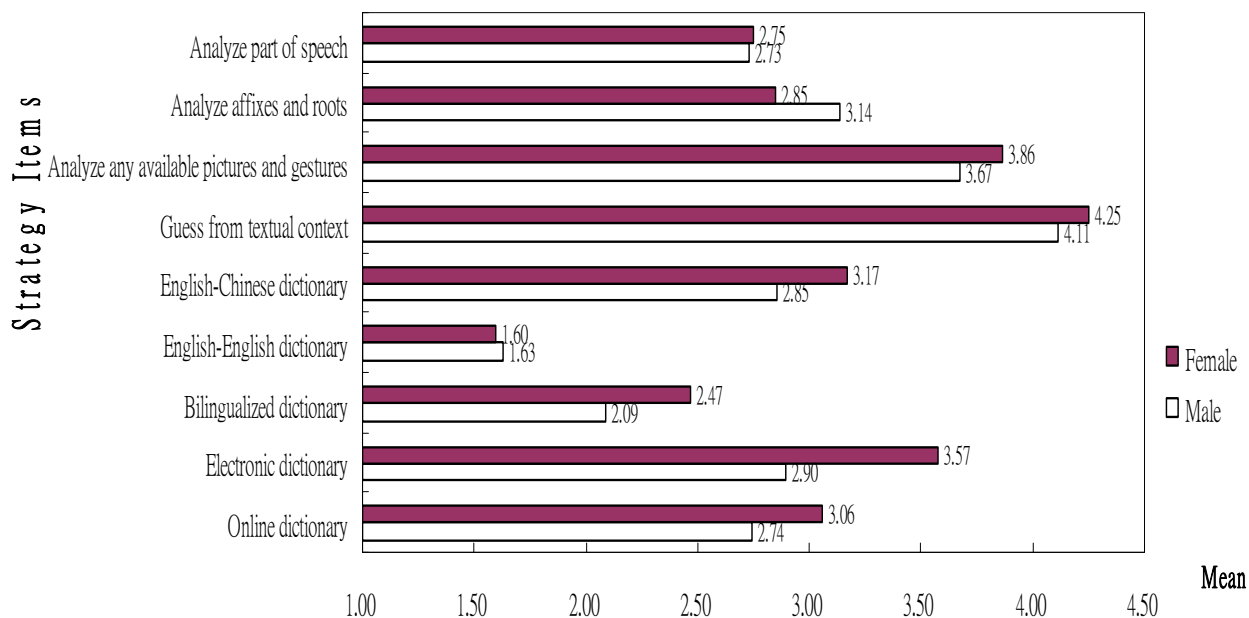
Figure 4.2 Frequencies of Determination Strategies Use by Male and Female Students

It should also be mentioned that male students showed their various preferences on

dictionary use and so did female students. Of the five dictionary strategies, electronic

dictionary was favored the most by male and female students, followed by conventional

Chinese-English dictionary and online dictionary. However, dictionaries which contain

English explanations were favored the least by both groups, especially English-English

dictionary.

4.2.2.2 Frequencies of Social Strategies by Male and Female Students

Figure 4.3 below shows the results of frequencies of social strategies by male and

female students. In this category, the use of all strategies by female students was higher than

male students. Among these strategies, asking classmates for meaning was the most frequent

use strategy by both male and female students. By contrast, teacher's checking students flash

cards or word lists for accuracy, interacting with native speakers, and practicing new words

with family members were regarded as the least frequent use.
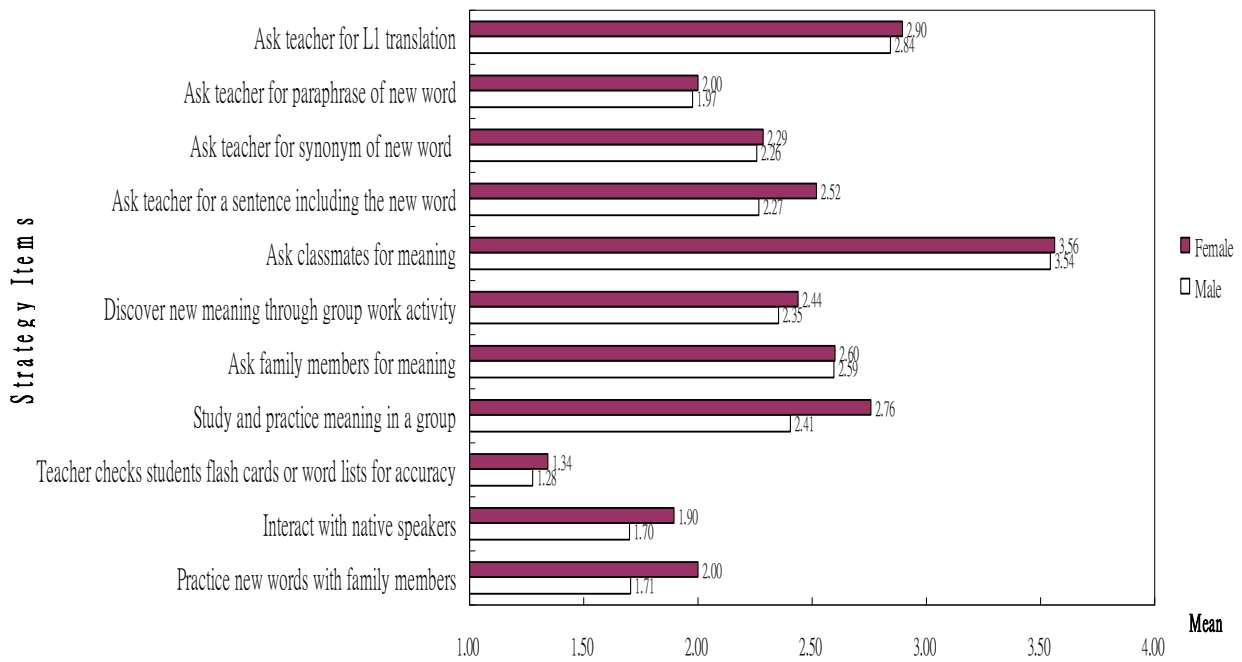
Figure 4.3 Frequencies of Social Strategy Use by Male and Female Students

In addition, three points deserve more attention. First, among strategies that involve interacting with others, classmates were the first choice, followed by teachers, family members and native speakers. Second, among strategies that require teacher's help, the strategy, asking teacher for L1 translation, was favored the most while the strategy, teacher checks students flash cards or word lists for accuracy, was employed the least. Moreover, the use of asking family members for meaning by both male and female students belonged to medium use, while practicing new words with family members only belonged to low use.

4.2.2.3 Frequencies of Memory Strategies by Male and Female Students

As can be seen in Figure 4.4, the results displayed that both male and female students favored studying the spelling of a word the most, followed by studying the sound of a word. As for the seldom used strategies, five strategies were reported with mean scores even lower

than 2.0 by both genders. The least one is configuration, followed by image word form, use

physical action when learning a word, group words together within a storyline, and underline

initial letter of the word.

Strategy Item	Female	Male
Study word with a pictorial presentation of its meaning	2.55	2.54
Image words meaning	2.66	2.87
Connect word to a personal experience	2.30	2.49
Associate the word with its coordinates	3.23	3.00
Connect the word to its synonym and antonyms	2.85	2.53
Use scales for gradable adjectives	3.43	3.03
Group words together to study them	3.26	2.78
Group words together spatially on a page	2.52	1.94
Use new word in sentences	2.62	2.28
Group words together within a storyline	1.84	1.81
Study the spelling of a word	4.10	3.90
Study the sound of a word	3.86	3.50
Say new word aloud when studying	3.25	2.46
Image word form	1.67	1.53
Underline initial letter of the word	1.94	1.72
Configuration	1.30	1.22
Use Keyword Method	2.37	2.35
Affixes and roots (remembering)	3.23	3.16
Part of speech (remembering)	3.16	3.25
Paraphrase the word's meaning	2.28	2.03
Learn the words of an idiom together	2.89	2.76
Use physical action when learning a word	1.82	1.56

Figure 4.4 Frequencies of Memory Strategy Use by Male Students

In addition to the results presented above, two aspects deserve more attention. First,

generally speaking, female students had higher frequency use of most strategies than male

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students, except three strategies, imaging word's meaning, connecting word to a personal experience, and part of speech (remembering). Second, three strategies showed large mean differences between male and female students: grouping word together to study them, grouping words together spatially on a page, and saying new word aloud when studying. The mean differences of these strategies not only favor female students but also show that male students might differ from their female counterpart in a great deal, especially on the strategy, saying new word aloud when studying, which had mean difference at 0.79.

4.2.2.4 Frequencies of Cognitive Strategies by Male and Female Students

Figure 4.5 below shows the frequencies of cognitive strategies by male and female students. Of the eight strategies, male and female students employed verbal repetition and taking notes in class the most frequently. However, the findings also showed that male and female students favored two cognitive strategies the least: putting English labels on physical objects and keeping a vocabulary notebook. The mean scores of the two strategies were lower than 2.0, indicating that they were seldom applied by both genders. In addition to the most and the least frequently used strategies, two strategies showed large mean differences between male and female students: word list and written repetition. This might demonstrate that male students are not likely to use written strategies as often as female students.
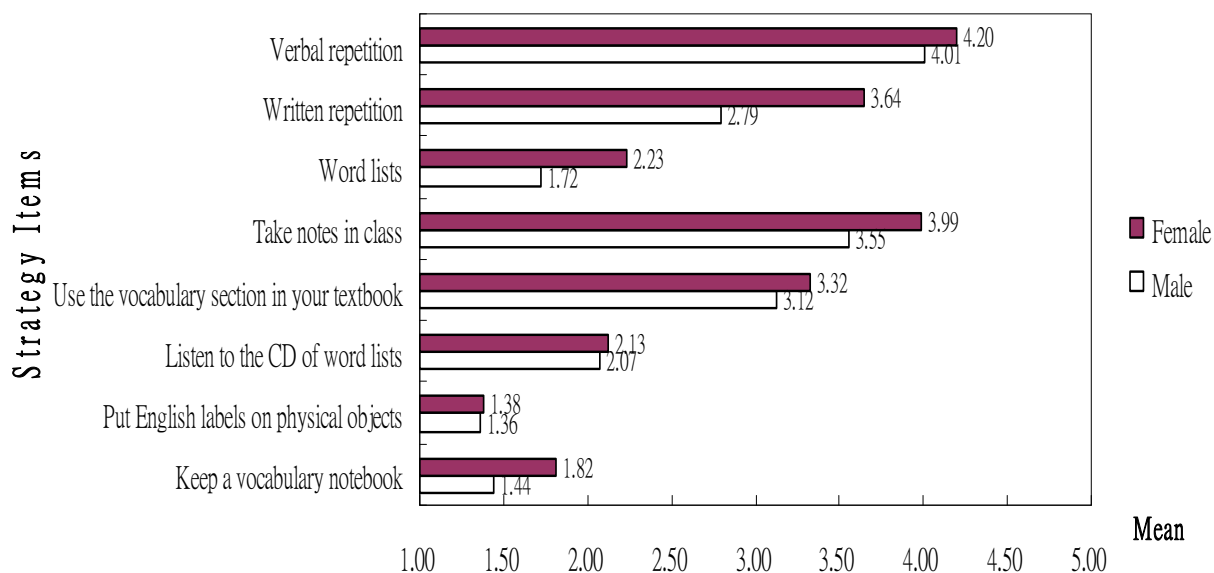
Figure 4.5 Frequencies of Cognitive Strategy Use by Male and Female Students

4.2.2.5 Frequencies of Metacognitive Strategies by Male and Female Students

As Figure 4.6 shows, male and female students generally did not use metacognitive strategies frequently. The mean score of six strategies was lower than 2.4, which is considered as low use of the strategies. Among them, reading English newspaper was the least used strategy, followed by watching TV news and reading English novels. In contrast, skipping or passing new word was the most frequently used, and the second frequently used strategy by both gender is listening to English songs. Interestingly, except the most frequently used one, female students had higher frequency use of most strategies than male students.
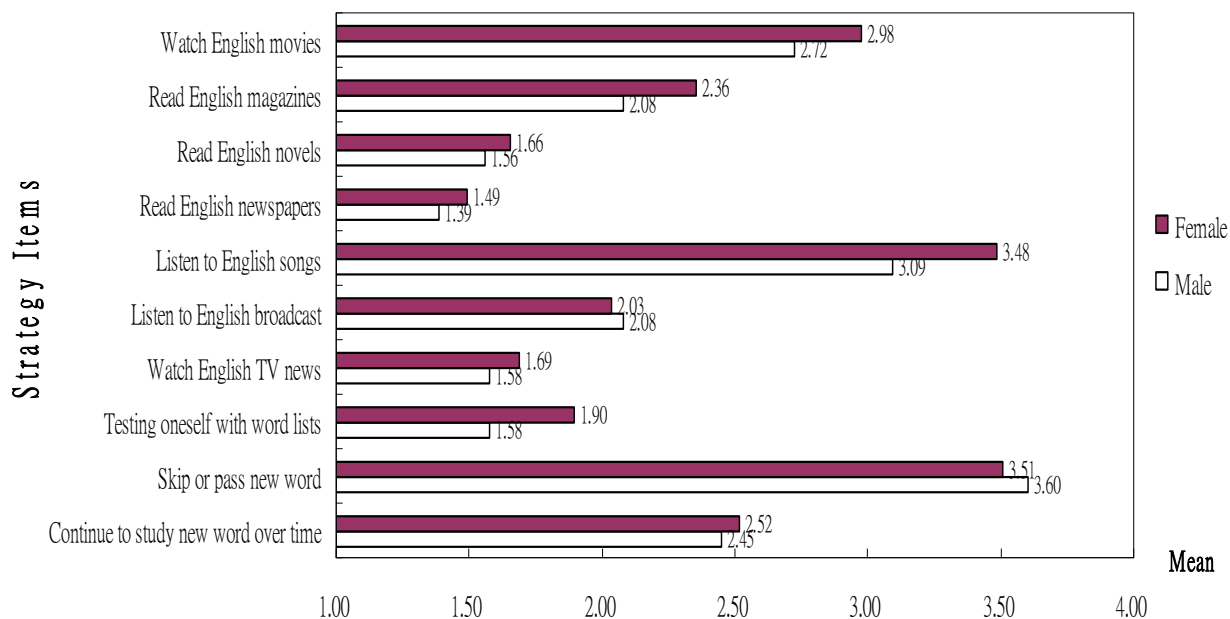
Figure 4.6 Frequencies of Metacognitive Strategy Use by Male and Female Students

4.3 Gender Differences of Vocabulary Strategy Use

This section reports the results of gender differences on vocabulary strategy use. The frequencies of the strategy use by male and female students were compared by the independent-samples t-Test. The overall strategy use was examined first, and then the use of the five strategy categories. Finally, each strategy was further scrutinized to examine the differences between genders.

4.3.1 Comparison of Overall Strategy Use between Male and Female Students

A comparison of general frequencies of the overall strategy use between male and female students was shown in Table 4.10. With significant differences (t = -.2.994, p < .005) on the overall strategy use, female students ($\overline{X}$= 2.66) had a higher average mean score of strategy use than their male peers ($\overline{X}$= 2.46). In other words, the female students tended to apply strategy significantly more frequently than the male students.

Table 4.10 t-Test Results of Gender Differences on Overall Strategy Use

	Gender	Mean	SD	t-value	df
Overall Strategy Use	M (n = 116)	2.46	0.48	-2.944**	191
	F (n = 87)	2.66	0.45		

** p < .005

As for the use of the five strategy categories (see in Table 4.10), female students had

higher frequency use than male students in all categories, but significant gender differences

were found in three categories, including determination strategies (t = -2.047, p < .05),

memory strategies (t = -2.448, p < .05), and cognitive strategies (t = -3.915, p < .005).

Among the three categories, the significant level of cognitive strategies than the other two

categories.

Table 4.11 t-Test Results of Gender Differences on Strategy Categories

Strategy Category	Gender	Mean	SD	t-value	df
Determination Strategies	M	2.87	0.67	-2.047*	188
	F	3.07	0.65		
Social Strategies	M	2.27	0.56	-1.516	178
	F	2.39	0.60		
Memory Strategies	M	2.49	0.60	-2.448*	193
	F	2.69	0.55		
Cognitive Strategies	M	2.51	0.55	-3.915**	172
	F	2.84	0.62		
Metacognitive Strategies	M	2.21	0.60	-1.656	176
	F	2.36	0.65		

* p < .05, ** p < .005

In short, female participants in the present study tended to have a significantly higher

frequency of overall strategy use and the main strategy categories, except that of social and

metacognitive strategies.

4.3.2 Comparison of Individual Strategy Use between Male and Female Students

Since the results of gender differences on the overall strategy use and the five strategy

category use have been presented above, this subsection tends to examine the sixty

individual strategies respectively.

4.3.2.1 Determination Strategies

As shown in Table 4.12, only one out of the nine strategies was reported with strong

gender variations which fell on bilingualized dictionary" (t = -2.156, p < .05).

Table 4.12 t-Test Results of Gender Differences on Determination Strategies Use

Determination Strategies	Gender	Mean	SD	t-value	df
Analyze part of speech	M	2.73	1.20	-.088	191
	F	2.75	1.12		
Analyze affixes and roots	M	3.14	1.16	1.836	193
	F	2.85	1.06		
Analyze any available pictures and gestures	M	3.67	1.24	-1.213	200
	F	3.86	0.99		
Guess from textual context	M	4.11	0.99	-1.076	196
	F	4.25	0.87		
English-Chinese dictionary	M	2.85	1.34	-1.730	190
	F	3.17	1.27		
English-English dictionary	M	1.63	0.82	.273	186
	F	1.60	0.81		
Bilingualized dictionary	M	2.09	1.16	-2.156*	171
	F	2.47	1.33		
Electronic dictionary	M	2.90	1.32	-1.730	105
	F	3.57	3.47		
Online dictionary	M	2.74	1.25	-1.828	190
	F	3.06	1.19		

* p < .05

4.3.2.2 Social Strategies

When it comes to social strategy use, gender seemed to have no significant variations

on it as a whole. However, out of the expectation, one strategy in this category was found to

be significantly different on the frequencies of strategy use by male and female students (see

Table 4.13): studying and practice meaning in a group (t = -2.344, p < .05). The results

suggested that grouped practice and learning was more popular with female students ($\overline{\text{X}}$=

2.76) than with male students ($\overline{\text{X}}$= 2.41).

Table 4.13 t-Test Results of Gender Differences on Social Strategies Use

Social Strategies	Gender	Mean	SD	t-value	df
Ask teacher for L1 translation	M	2.84	1.25	-.317	197
	F	2.90	1.07		
Ask teacher for paraphrase of new word	M	1.97	0.97	-.190	187
	F	2.00	0.95		
Ask teacher for synonym of new word	M	2.26	1.10	-.193	193
	F	2.29	1.01		
Ask teacher for a sentence including the new word	M	2.27	1.15	-1.547	187
	F	2.52	1.13		
Ask classmates for meaning	M	3.54	1.10	-.127	183
	F	3.56	1.13		
Discover new meaning through group work activity	M	2.35	1.14	-.498	180
	F	2.44	1.21		
Ask family members for meaning	M	2.59	1.34	-.015	187
	F	2.60	1.32		
Study and practice meaning in a group	M	2.41	1.01	-2.344*	177
	F	2.76	1.10		
Teacher checks students flash cards or word lists for accuracy	M	1.28	0.71	-.736	195
	F	1.34	0.63		
Interact with native speakers	M	2.84	1.25	-1.295	161
	F	2.90	1.07		
Practice new words with family members	M	1.97	0.97	-1.948	168
	F	2.00	0.95		

* p < .05

4.3.2.3 Memory Strategies

After comparing the mean scores of male and female students' use of memory

strategies as a whole, the results showed that gender had a more significant effect on the

choice and use of this strategy category (see Table 4.14). Significant gender differences were

found in eight memory strategies: connecting the word to its synonym and antonyms (t = -2.087, p < .05), using scales for gradable adjectives (t = -2.391, p < .05), grouping words together to study them (t = -2.811, p < .05), grouping words together spatially on a page (t = -3.740, p < .005), using new word in sentences (t = -2.088, p < .05), studying the sound of a word (t = -2.274, p < .05), saying new word aloud when studying (t = -2.344, p < .05), and using physical action when learning a word (t = -2.001, p < .05). Among the eight strategies, the significant level of grouping words together spatially on a page was higher than the other seven strategies.

Table 4.14 t-Test Results of Gender Differences on Memory Strategy Use

Memory Strategies	Gender	Mean	SD	t-value	df
Study word with a pictorial presentation of its meaning	M	2.54	1.27	-.047	183
	F	2.55	1.30		
Image words meaning	M	2.87	1.34	1.177	191
	F	2.66	1.26		
Connect word to a personal experience	M	2.49	1.28	1.169	198
	F	2.30	1.07		
Associate the word with its coordinates	M	3.00	1.28	-1.338	194
	F	3.23	1.16		
Connect the word to its synonym and antonyms	M	2.53	1.17	-2.087*	195
	F	2.85	1.04		
Use scales for gradable adjectives	M	3.03	1.17	-2.391*	188
	F	3.43	1.14		
Group words together to study them	M	2.78	1.25	-2.811*	189
	F	3.26	1.21		
Group words together spatially on a page	M	1.94	1.03	-3.740**	176
	F	2.52	1.13		
Use new word in sentences	M	2.28	1.11	-2.088*	181
	F	2.62	1.15		
Group words together within a storyline	M	1.81	1.01	-.192	178
	F	1.84	1.09		

* p < .05, ** p < .005

Table 4.14 t-Test Results of Gender Differences on Memory Strategy Use (Continued)

Memory Strategies	Gender	Mean	SD	t-value	df
Study the spelling of a word	M	3.90	1.11	-1.368	191
	F	4.10	1.03		
Study the sound of a word	M	3.50	1.24	-2.274*	199
	F	3.86	1.02		
Say new word aloud when studying	M	2.46	1.18	-4.574**	179
	F	3.25	1.26		
Image word form	M	1.53	0.80	-1.084	161
	F	1.67	1.00		
Underline initial letter of the word	M	1.72	1.04	-1.382	174
	F	1.94	1.16		
Configuration	M	1.22	0.59	-.816	170
	F	1.30	0.68		
Use Keyword Method	M	2.35	1.29	-.078	183
	F	2.37	1.32		
Affixes and roots (remembering)	M	3.16	1.24	-.398	194
	F	3.23	1.12		
Part of speech (remembering)	M	3.25	1.47	.463	197
	F	3.16	1.27		
Paraphrase the words meaning	M	2.03	1.11	-1.579	185
	F	2.28	1.12		
Learn the words of an idiom together	M	2.76	1.20	-.759	189
	F	2.89	1.16		
Use physical action when learning a word	M	1.56	0.84	-2.001*	172
	F	1.82	0.95		

* $p < .05$, ** $p < .005$

   In summary, over one-third of memory strategies reached the significant level of gender differences on the strategy use, and this showed higher frequencies of strategy use by female students than by male students. In addition, mean differences on the strategy of saying new words aloud when studying reached a highest significant level of $p < .005$.

4.3.2.4 Cognitive Strategies

The results in Table 4.15 showed significance in four strategies: written repetition ($t = 1.177$, $p < .005$), word lists ($t = 1.169$, $p < .005$), taking notes in class ($t = -1.338$, $p < .05$), and keep a vocabulary notebook ($t = -3.740$, $p < .005$). Interestingly, they are all related to written forms of vocabulary. It can be said that male students were less willing to write than female students in practicing and learning new words. Also, once when it needs the organization ability or takes time to make learning instruments, both male and female students showed little concern in such strategies, as word lists and vocabulary notebooks.

Table 4.15 t-Test Results of Gender Differences on Cognitive Strategies Use

Cognitive Strategies	Gender	Mean	SD	t-value	df
Verbal repetition	M	4.01	1.16	-.047	199
	F	4.20	0.95		
Written repetition	M	2.79	1.28	1.177**	187
	F	3.64	1.27		
Word lists	M	1.72	0.95	1.169**	168
	F	2.23	1.11		
Take notes in class	M	3.55	1.17	-1.338*	193
	F	3.99	1.07		
Use the vocabulary section in your textbook	M	3.12	1.38	-2.087	188
	F	3.32	1.33		
Listen to the CD of word lists	M	2.07	1.04	-2.391	198
	F	2.13	0.89		
Put English labels on physical objects	M	1.36	0.64	-2.811	181
	F	1.38	0.67		
Keep a vocabulary notebook	M	1.44	0.69	-3.740**	145
	F	1.82	0.99		

* $p < .05$, ** $p < .005$

4.3.2.5 Metacognitive Strategies

Two individual strategies in this category were found to contain significant differences between male and female students (see Table 4.16): listening to English songs ($t = -2.071$, p

< .05) and testing oneself with word lists (t = -2.1281, p < .05). In the former strategy, male

($\overline{\text{X}}$= 3.09) and female ($\overline{\text{X}}$= 3.48) students reached a level of medium use, which indicated

that both gender sometimes learned new words by listening to English songs. As the number

of mean score showed, female students' strategy use approached the high use and was

significantly higher than male students' frequency of strategy use. Next, male ($\overline{\text{X}}$= 1.48) and

female ($\overline{\text{X}}$= 1.90) students were reported to have low use of testing oneself with word lists;

in other words, they did generally not use word lists as a tool to test themselves when

reviewing new words. In spite of the low use by both groups, female students still applied

the strategy significantly more often than male students.

Table 4.16 t-Test Results of Gender Differences on Metacognitive Strategies Use

Metacognitive Strategies	Gender	Mean	SD	t-value	df
Watch English movies	M	2.72	1.35	-1.328	186
	F	2.98	1.34		
Read English magazines	M	2.08	1.10	-1.646	171
	F	2.36	1.26		
Read English novels	M	1.56	0.77	-.736	157
	F	1.66	1.00		
Read English newspapers	M	1.39	0.63	-.963	149
	F	1.49	0.87		
Listen to English songs	M	3.09	1.40	-2.071*	195
	F	3.48	1.26		
Listen to English broadcast	M	2.08	1.30	.244	192
	F	2.03	1.21		
Watch English TV news	M	1.58	0.83	-.848	164
	F	1.69	1.00		
Test oneself with word lists	M	1.58	0.92	-2.128*	160
	F	1.90	1.15		
Skip or pass new word	M	3.60	1.13	.601	182
	F	3.51	1.16		
Continue to study new word over time	M	2.45	1.10	-.481	198
	F	2.52	0.94		

* p < .05

4.3.3 Conclusion of Strategy Use between Gender

After all strategies were examined on gender variation in detail, a summary of significance between genders was displayed in Table 4.17. As for the sixty individual strategies, sixteen strategies were found to reach significant level on the strategy use between genders. Among them, most significant gender differences on strategy use appeared in the category of memory strategies, while only one strategy reached significant level in determination and social strategies.

The results also show that female students used all the sixteen strategies more frequently than male students. As far as the significant level is concerned, five strategies reached a higher level ($p < .005$) than the other eleven strategies ($p < .05$).

Table 4.17 Summary of Significance in Strategy Use between Gender

Category	Strategy Description	Mean		t-value
		M	F	
DET	Bilingualized dictionary	2.09	2.47	-2.156*
SOC	Study and practice meaning in a group	2.41	2.76	-2.344*
MEM	Connect the word to its synonym and antonyms	2.53	2.85	-2.087*
MEM	Use scales for gradable adjectives	3.03	3.43	-2.391*
MEM	Group words together to study them	2.78	3.26	-2.811*
MEM	Group words together spatially on a page	1.94	2.52	-3.740**
MEM	Use new word in sentences	2.28	2.62	-2.088*
MEM	Study the sound of a word	3.50	3.86	-2.274*
MEM	Say new word aloud when studying	2.46	3.25	-4.574**
MEM	Use physical action when learning a word	1.56	1.82	-2.001*
COG	Written repetition	2.79	3.64	1.177**
COG	Word lists	1.72	2.23	1.169**
COG	Take notes in class	3.55	3.99	-1.338*
COG	Keep a vocabulary notebook	1.44	1.82	-3.740**
MET	Listen to English songs	3.09	3.48	-2.071*
MET	Test oneself with word lists	1.58	1.90	-2.128*

* $p < .05$, ** $p < .005$

4.4 Vocabulary Strategy Use between Gender and Vocabulary Level

This section displays the relationship of gender differences and vocabulary level on

strategy use. First, the use of overall strategy and the five strategy categories are scrutinized

on whether gender differences existed in the three scoring groups by independent-samples

t-Test. Next, with the same procedure, the sixty individual strategies are examined in terms

of gender and vocabulary ability.

4.4.1 Overall Strategy Use and the Five Strategy Categories

The results in Table 4.18 shows gender differences of overall strategy use among the

three scoring groups. Generally speaking, significant gender differences were only found in

L-S, indicating that male students of lowest level applied strategies significantly less

frequently than female students.

Table 4.18 t-Test Results of Gender Differences on the Use of Overall Strategy among Three
Scoring Groups

	Gender	Male		Female		t-value	df
Vocabulary Level		Mean	SD	Mean	SD		
High (n = 75)		2.69	0.42	2.76	0.42	-0.671	73
Intermediate (n = 81)		2.44	0.46	2.59	0.46	-1.397	69
Low (n = 47)		2.21	0.46	2.55	0.50	-2.261*	28

* $p < .05$

As for the five strategy categories, only cognitive strategies were reported to contain

significant gender differences in I-S and L-S (see Table 4.19). In both groups, female

students used the strategies significantly more often than their male peers. In the former,

male and female students both had medium use of cognitive strategies, but in the latter, only

female students had medium use of cognitive strategies.

Table 4.19 t-Test Results of Gender Differences on the Use of Strategy Categories among Three Scoring Groups

Gender	Male		Female		t-value	df
Vocabulary Level	Mean	SD	Mean	SD		
Determination Strategies						
High	3.21	0.61	3.16	0.47	0.391	67
Intermediate	2.89	0.65	3.08	0.78	-1.162	61
Low	2.44	0.52	2.80	0.69	-1.801	24
Social Strategies						
High	2.41	0.51	2.45	0.61	-0.359	71
Intermediate	2.31	0.59	2.38	0.57	-0.562	70
Low	2.03	0.51	2.26	0.64	-1.245	25
Memory Strategies						
High	2.70	0.55	2.84	0.58	-1.027	73
Intermediate	2.47	0.56	2.55	0.51	-0.711	73
Low	2.26	0.65	2.61	0.52	-1.977	37
Cognitive Strategies						
High	2.52	0.49	2.79	0.72	-1.931	66
Intermediate	2.54	0.50	2.83	0.52	-2.509*	67
Low	2.44	0.68	2.95	0.59	-2.663*	35
Metacognitive Strategies						
High	2.65	0.53	2.52	0.70	0.910	69
Intermediate	2.06	0.54	2.25	0.58	-1.482	66
Low	1.93	0.47	2.22	0.64	-1.591	24

* $p < .05$

4.4.2 Individual Strategies

The sixty individual strategies were examined to see whether gender differences did exist among the three vocabulary levels. The comparison of mean scores by both genders in three vocabulary levels is illustrated in the following sub-sections.

4.4.2.1 Determination Strategies

As shown in Table 4.20, the t-Test results displayed that gender differences on determination strategies in any of the three scoring levels were only found in the strategy,

bilingualized dictionary, by I-S (t = 2.754, p < .05).

Table 4.20 t-Test Results of Gender Differences on Determination Strategy Use among
Three Vocabulary Levels

Determination Strategies	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Analyze part of speech						
High	3.57	0.99	3.21	1.09	1.484	73
Intermediate	2.58	1.11	2.42	1.15	0.622	67
Low	1.97	0.95	2.31	0.70	-1.408	39
Analyze affixes and roots						
High	3.59	1.04	3.18	1.04	1.712	73
Intermediate	3.13	1.10	2.48	0.97	2.754*	74
Low	2.61	1.17	2.81	1.11	-0.573	32
Analyze any available pictures and gestures						
High	3.81	1.15	3.84	1.08	-0.121	72
Intermediate	3.83	1.23	3.88	0.89	-0.193	79
Low	3.26	1.29	3.88	1.02	-1.786	37
Guess from textual context						
High	4.46	0.80	4.53	0.65	-0.397	69
Intermediate	4.31	0.88	4.24	0.83	0.364	71
Low	3.39	1.02	3.63	1.09	-0.725	29
English-Chinese dictionary						
High	3.16	1.44	3.34	1.19	-0.588	70
Intermediate	2.92	1.38	3.18	1.29	-0.885	72
Low	2.39	1.02	2.75	1.39	-0.923	24
English-English dictionary						
High	2.05	0.91	1.79	0.87	1.282	73
Intermediate	1.54	0.80	1.42	0.75	0.674	72
Low	1.26	0.44	1.50	0.73	-1.214	21
Bilingualized dictionary						
High	2.41	1.28	2.37	1.34	0.122	73
Intermediate	2.04	1.24	2.67	1.36	-2.106*	64
Low	1.77	0.76	2.31	1.25	-1.578	21
Electronic dictionary						
High	3.03	1.19	3.32	1.40	-0.965	72
Intermediate	2.92	1.44	4.18	5.36	-1.322	35
Low	2.71	1.30	2.94	1.24	-0.589	32
Online dictionary						
High	2.81	1.37	2.87	1.14	-0.197	70
Intermediate	2.75	1.23	3.27	1.26	-1.856	68
Low	2.65	1.17	3.06	1.18	-1.151	30

* p < .05

4.4.2.2 Social Strategies

The t-Test results in Table 4.21 showed that gender differences on social strategies in any of the three scoring levels were only found in three strategies, including studying and practice meaning in a group by H-S (t = -2.278, p < .05), teacher checks students' flash cards or word lists for accuracy by L-S (t = -2.352, p < .05) and practicing new words with family members by I-S (t = -2.250, p < .05).

Table 4.21 t-Test Results of Gender Differences on Social Strategy Use among Three Vocabulary Levels

Social Strategies	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Ask teacher for L1 translation						
High	2.92	1.14	2.97	1.08	-0.214	73
Intermediate	3.00	1.34	2.91	1.04	0.343	78
Low	2.52	1.21	2.69	1.14	-0.479	32
Ask teacher for paraphrase of new word						
High	2.16	1.07	2.18	0.98	-0.093	72
Intermediate	2.10	0.97	1.88	0.89	1.076	73
Low	1.55	0.72	1.81	0.98	-0.952	24
Ask teacher for synonym of new word						
High	2.54	1.04	2.34	0.94	0.865	72
Intermediate	2.33	1.14	2.27	1.18	0.231	67
Low	1.81	0.98	2.19	0.83	-1.396	35
Ask teacher for a sentence including the new word						
High	2.68	1.18	2.61	1.00	0.278	70
Intermediate	2.19	1.12	2.55	1.30	-1.285	62
Low	1.90	1.04	2.25	1.06	-1.065	30
Ask classmates for meaning						
High	3.41	1.04	3.29	1.11	0.466	73
Intermediate	3.67	1.06	3.88	0.96	-0.937	73
Low	3.52	1.23	3.56	1.36	-0.114	28
Discover new meaning through group work activity						
High	2.59	1.14	2.74	1.29	-0.507	72
Intermediate	2.35	1.23	2.21	1.14	0.534	72
Low	2.06	0.96	2.19	1.05	-0.392	28
Ask family members for meaning						
High	2.51	1.37	2.58	1.37	-0.207	73
Intermediate	2.85	1.41	2.76	1.32	0.314	72
Low	2.29	1.13	2.31	1.20	-0.061	29

Table 4.21 t-Test Results of Gender Differences on Social Strategy Use among Three
Vocabulary Levels (Continued)

Social Strategies	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Study and practice meaning in a group						
High	2.30	0.85	2.82	1.11	-2.278*	69
Intermediate	2.50	1.11	2.79	1.19	-1.097	66
Low	2.39	1.05	2.56	0.89	-0.599	35
Teacher checks students' flash cards or word lists for accuracy						
High	1.32	0.53	1.29	0.57	0.276	73
Intermediate	1.27	0.79	1.18	0.46	0.636	77
Low	1.23	0.76	1.81	0.83	-2.352*	28
Interact with native speakers						
High	2.19	1.17	2.37	1.38	-0.605	72
Intermediate	1.50	0.80	1.61	0.93	-0.532	62
Low	1.42	0.56	1.38	0.50	0.276	34
Practice new words with family members						
High	1.86	1.06	1.82	0.98	0.208	72
Intermediate	1.60	1.01	2.15	1.12	-2.250*	64
Low	1.68	0.75	2.13	1.45	-1.154	19

* p < .05

4.4.2.3 Memory Strategies

The t-Test results displayed that gender differences on memory strategies in any of the
three scoring levels were found in six strategies (see Table 4.22). They are imaging word's
meaning by H-S (t = 2.007, p < .05), using scales for gradable adjectives by H-S (t = -2.617,
p < .05), grouping words together to study them by L-S (t = -2.618, p < .05), grouping words
together spatially on a page by L-S (t = -3.621, p < .005), saying new word aloud when
studying by H-S (t = -3.380, p < .005) and by I-S (t = -2.623, p < .05), and using physical
action when learning a word by L-S (t = -2.298*, p < .05).

Table 4.22 t-Test Results of Gender Differences on Memory Strategy Use among Three Vocabulary Levels

Memory Strategies	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Study word with a pictorial presentation of its meaning						
High	2.30	1.15	2.39	1.28	-0.346	73
Intermediate	2.69	1.48	2.67	1.45	0.063	70
Low	2.61	1.02	2.69	1.01	-0.238	31
Image words meaning						
High	3.08	1.34	2.50	1.16	2.007*	71
Intermediate	2.73	1.47	2.45	1.28	0.894	75
Low	2.84	1.10	3.44	1.21	-1.659	28
Connect word to a personal experience						
High	2.59	1.28	2.24	0.97	1.362	67
Intermediate	2.35	1.30	2.18	1.18	0.619	73
Low	2.58	1.26	2.69	1.01	-0.314	37
Associate the word with its coordinates						
High	3.24	1.42	3.50	1.16	-0.856	69
Intermediate	2.96	1.15	3.03	1.13	-0.280	70
Low	2.77	1.28	3.00	1.15	-0.611	33
Connect the word to its synonyms and antonyms						
High	3.14	1.13	3.18	0.98	-0.200	71
Intermediate	2.46	1.11	2.73	1.07	-1.095	71
Low	1.90	0.94	2.31	0.87	-1.481	33
Use scales for gradable adjectives						
High	3.19	1.00	3.79	0.99	-2.617*	73
Intermediate	3.08	1.22	3.55	0.97	-1.895	77
Low	2.77	1.28	2.31	1.14	1.261	34
Group words together to study them						
High	3.11	1.15	3.55	1.22	-1.622	73
Intermediate	2.79	1.25	2.91	1.16	-0.434	72
Low	2.35	1.28	3.31	1.14	-2.618*	34
Group words together spatially on a page						
High	1.97	0.93	2.39	1.15	-1.749	71
Intermediate	2.00	1.11	2.45	1.15	-1.774	67
Low	1.81	1.05	2.94	1.00	-3.621**	32
Use new word in sentences						
High	2.76	1.19	3.03	1.10	-1.018	72
Intermediate	2.23	1.08	2.55	1.15	-1.249	66
Low	1.81	0.83	1.81	0.83	-0.024	30
Group words together within a storyline						
High	2.27	1.17	2.18	1.23	0.311	73
Intermediate	1.60	0.84	1.73	0.98	-0.588	62
Low	1.58	0.89	1.25	0.58	1.539	42

* p < .05, ** p < .005

Table 4.22 t-Test Results of Gender Differences on Memory Strategy Use among Three
Vocabulary Levels (Continued)

Memory Strategies	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Study the spelling of a word						
High	3.84	1.12	4.11	1.03	-1.074	72
Intermediate	4.04	1.01	4.06	1.06	-0.081	67
Low	3.74	1.24	4.19	1.05	-1.298	35
Study the sound of a word						
High	3.92	0.98	4.11	0.92	-0.846	72
Intermediate	3.50	1.15	3.67	1.11	-0.655	71
Low	3.00	1.48	3.69	1.01	-1.869	41
Say new word aloud when studying						
High	2.54	1.12	3.47	1.27	-3.380**	72
Intermediate	2.48	1.18	3.18	1.18	-2.623*	69
Low	2.32	1.28	2.88	1.36	-1.347	29
Image word form						
High	1.51	0.80	1.47	0.92	0.200	72
Intermediate	1.42	0.68	1.61	0.75	-1.163	64
Low	1.71	0.94	2.25	1.39	-1.399	22
Underline initial letter of the word						
High	1.73	1.07	1.76	1.10	-0.133	73
Intermediate	1.81	1.20	2.06	1.22	-0.905	68
Low	1.58	0.72	2.13	1.20	-1.661	21
Configuration						
High	1.22	0.58	1.37	0.67	-1.046	72
Intermediate	1.21	0.54	1.12	0.33	0.894	78
Low	1.26	0.68	1.50	1.10	-0.807	21
Use Keyword Method						
High	2.16	1.32	2.32	1.34	-0.500	73
Intermediate	2.38	1.20	2.09	1.10	1.102	73
Low	2.55	1.39	3.06	1.53	-1.128	28
Affixes and roots (remembering)						
High	3.86	0.95	3.58	1.08	1.219	72
Intermediate	2.94	1.23	2.97	1.13	-0.122	72
Low	2.68	1.22	2.94	1.00	-0.783	36
Part of speech (remembering)						
High	3.70	1.22	3.50	1.22	0.718	73
Intermediate	3.33	1.43	3.03	1.21	1.025	76
Low	2.58	1.59	2.63	1.31	-0.102	36
Paraphrase the words' meaning						
High	2.59	1.17	2.74	1.25	-0.511	73
Intermediate	1.81	1.00	1.94	0.86	-0.608	75
Low	1.68	0.98	1.88	0.89	-0.699	33

* $p < .05$, $p < .005$

Table 4.22 t-Test Results of Gender Differences on Memory Strategy Use among Three
Vocabulary Levels (Continued)

Strategy Description	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Learn the words of an idiom together						
High	2.95	1.31	3.37	1.13	-1.496	71
Intermediate	2.90	1.10	2.52	1.09	1.538	69
Low	2.32	1.14	2.50	0.97	-0.561	35
Use physical action when learning a word						
High	1.81	0.74	1.87	0.96	-0.291	69
Intermediate	1.58	1.01	1.70	0.92	-0.526	73
Low	1.23	0.50	1.94	1.00	-2.686*	19

4.4.2.4 Cognitive Strategies

As shown in Table 4.23, the t-Test results displayed that gender differences on cognitive

strategies in any of the three scoring levels were found in 4 strategies: written repetition by

H-S ($t = -2.690$, $p < .05$), by I-S ($t = -.2.723$, $p < .05$) and by L-S ($t = -4.007$, $p < .005$), word

lists by I-S ($t = -3.544$, $p < .005$), taking notes in class by H-S ($t = -2.303$, $p < .05$), and

keeping a vocabulary notebook by L-S ($t = -2.298*$, $p < .05$).

Table 4.23 t-Test Results of Gender Differences on Cognitive Strategy Use among Three
Vocabulary Levels

Cognitive Strategies	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Verbal repetition						
High	3.73	1.24	4.13	1.07	-1.501	71
Intermediate	4.25	1.00	4.24	0.75	0.039	78
Low	3.97	1.25	4.25	1.06	-0.810	35
Written repetition						
High	2.59	1.14	3.37	1.34	-2.690*	72
Intermediate	2.88	1.35	3.67	1.24	-.2.723*	72
Low	2.90	1.35	4.25	0.93	-4.007**	41
Word lists						
High	1.84	0.99	2.00	1.07	-0.684	73
Intermediate	1.52	0.74	2.33	1.16	-3.544**	50
Low	1.90	1.14	2.56	1.03	-2.006	33
Take notes in class						
High	3.46	1.04	4.05	1.18	-2.303*	72
Intermediate	3.73	1.23	4.03	1.05	-1.183	75
Low	3.39	1.23	3.75	0.86	-1.180	41
Use the vocabulary section in your textbook						
High	3.08	1.28	3.47	1.31	-1.314	73
Intermediate	3.19	1.42	3.27	1.44	-0.263	68
Low	3.06	1.46	3.06	1.18	0.005	37
Listen to the CD of word lists						
High	2.43	1.01	2.18	1.01	1.062	73
Intermediate	2.00	1.11	2.03	0.81	-0.142	79
Low	1.74	0.86	2.19	0.75	-1.838	34
Put English labels on physical objects						
High	1.46	0.77	1.26	0.60	1.231	68
Intermediate	1.29	0.58	1.36	0.60	-0.535	67
Low	1.35	0.55	1.69	0.87	-1.388	21
Keep a vocabulary notebook						
High	1.54	0.77	1.87	1.04	-1.553	68
Intermediate	1.50	0.74	1.73	0.91	-1.187	60
Low	1.23	0.43	1.88	1.09	-2.298*	17

* p < .05, ** p < .005

4.4.2.5 Metacognitive Strategies

The t-Test results in Table 4.24 showed that gender differences on metacognitive

strategies in any of the three scoring levels were found only in 2 strategies: listening to

English songs by L-S (t = -3.439, p < .005) and listening to English broadcast by H-S (t =

2.625, p < .05).

Table 4.24 t-Test Results of Gender Differences on Metacognitive Strategy Use among
Three Vocabulary Levels

Metacognitive Strategies	Male		Female		t-value	df
	Mean	SD	Mean	SD		
Watch English movies						
High	3.46	1.28	3.29	1.31	0.567	73
Intermediate	2.44	1.34	2.67	1.14	-0.830	75
Low	2.29	1.10	2.88	1.67	-1.267	22
Read English magazines						
High	2.76	1.09	2.89	1.41	-0.475	69
Intermediate	1.92	1.07	2.06	0.97	-0.631	73
Low	1.52	0.72	1.69	0.87	-0.674	26
Read English novels						
High	2.05	0.94	1.89	1.13	0.663	71
Intermediate	1.35	0.56	1.52	0.91	-0.907	49
Low	1.29	0.53	1.38	0.72	-0.417	24
Read English newspapers						
High	1.65	0.79	1.74	1.06	-0.410	68
Intermediate	1.33	0.56	1.30	0.68	0.211	60
Low	1.16	0.37	1.31	0.60	-0.917	21
Listen to English songs						
High	3.92	1.16	3.61	1.28	1.109	73
Intermediate	2.81	1.39	3.21	1.29	-1.324	72
Low	2.55	1.26	3.75	1.06	-3.439**	35
Listen to English broadcast						
High	3.00	1.43	2.18	1.25	2.625*	71
Intermediate	1.71	1.01	1.94	1.20	-0.908	61
Low	1.55	0.93	1.88	1.15	-0.985	25
Watch English TV news						
High	1.97	0.96	1.89	1.13	0.323	72
Intermediate	1.38	0.73	1.58	0.90	-1.060	59
Low	1.42	0.62	1.44	0.81	-0.078	24
Test oneself with word lists						
High	1.70	0.91	1.61	0.79	0.495	71
Intermediate	1.46	0.77	2.21	1.36	-2.875	46
Low	1.61	1.12	1.94	1.29	-0.855	27
Skip or pass new word						
High	3.19	1.10	3.37	1.05	-0.721	73
Intermediate	3.83	1.00	3.55	1.20	1.134	60
Low	3.74	1.24	3.75	1.34	-0.020	28
Continue to study new word over time						
High	2.78	1.06	2.71	1.14	0.289	73
Intermediate	2.38	1.04	2.45	0.79	-0.389	78
Low	2.16	1.16	2.19	0.54	-0.106	45

* p < .05, ** p < .005

4.4.2.6 Summary of Individual Strategies with Gender Differences

As shown in Table 4.20 to Table 4.24, the findings of the sixty strategies displayed that gender differences were found in at least one vocabulary level in seventeen strategies, which were summarized in Table 4.26. Among the three scoring groups, H-S reported gender differences in seven strategies, I-S in six strategies, and L-S in seven strategies. Furthermore, when it comes to significant level, H-S showed a higher significant level ($p < .005$) in the strategy of saying new word aloud when studying, I-S in word lists, and L-S in three strategies, grouping words together spatially on a page, written repetition, and listening to English songs.

What is worth-noting is that gender differences were found in at least two vocabulary levels in two individual strategies: saying new word aloud when studying and written repetition. Two groups, H-S and I-S, reported gender differences in the strategy of saying new word aloud when studying; that is, female students, of either high or intermediate vocabulary level, tended to say new word aloud more often than male students when studying. As for written repetition, three groups all reported significance in the strategy, the result of which echoed with the findings in Section 4.3.2.4 and illustrated that female students favored writing the words repeatedly more frequently than male students of all levels. It also deserved more attention that the mean differences between genders got higher as their vocabulary level decreased.

In addition, female students generally applied strategy more frequently than male

students even after vocabulary level differences were taken into account. However, surprisingly different from the results presented above, male students tended to significantly employed three strategies more often than female students: analyzing affixes and roots, imaging word's meaning and listening to English broadcast. Male students in H-S had higher preferences and frequencies on the latter two strategies, imaging word's meaning and listening to English broadcast, and male students in I-S applied the former strategy, analyzing affixes and roots, more frequently than female students.

Table 4.26 Summary of t-Test Results of Gender Differences on Individual Strategy Use among Three Vocabulary Levels

CAT	Strategy Description	Male		Female		t-value	df
		Mean	SD	Mean	SD		
DET	Analyze affixes and roots						
	High	3.59	1.04	3.18	1.04	1.712	73
	Intermediate	3.13	1.10	2.48	0.97	2.754*	74
	Low	2.61	1.17	2.81	1.11	-0.573	32
DET	Bilingualized dictionary						
	High	2.41	1.28	2.37	1.34	0.122	73
	Intermediate	2.04	1.24	2.67	1.36	-2.106*	64
	Low	1.77	0.76	2.31	1.25	-1.578	21
SOC	Study and practice meaning in a group						
	High	2.30	0.85	2.82	1.11	-2.278*	69
	Intermediate	2.50	1.11	2.79	1.19	-1.097	66
	Low	2.39	1.05	2.56	0.89	-0.599	35
SOC	Teacher checks students' flash cards or word lists for accuracy						
	High	1.32	0.53	1.29	0.57	0.276	73
	Intermediate	1.27	0.79	1.18	0.46	0.636	77
	Low	1.23	0.76	1.81	0.83	-2.352*	28
SOC	Practice new words with family members						
	High	1.86	1.06	1.82	0.98	0.208	72
	Intermediate	1.60	1.01	2.15	1.12	-2.250*	64
	Low	1.68	0.75	2.13	1.45	-1.154	19
MEM	Image words meaning						
	High	3.08	1.34	2.50	1.16	2.007*	71
	Intermediate	2.73	1.47	2.45	1.28	0.894	75
	Low	2.84	1.10	3.44	1.21	-1.659	28

* $p < .05$

Table 4.26 Summary of t-Test Results of Gender Differences on Individual Strategy Use among Three Vocabulary Levels (Continued)

CAT	Strategy Description	Male		Female		T-value	df
		Mean	SD	Mean	SD		
MEM	Use scales for gradable adjectives						
	High	3.19	1.00	3.79	0.99	-2.617*	73
	Intermediate	3.08	1.22	3.55	0.97	-1.895	77
	Low	2.77	1.28	2.31	1.14	1.261	34
MEM	Group words together to study them						
	High	3.11	1.15	3.55	1.22	-1.622	73
	Intermediate	2.79	1.25	2.91	1.16	-0.434	72
	Low	2.35	1.28	3.31	1.14	-2.618*	34
MEM	Group words together spatially on a page						
	High	1.97	0.93	2.39	1.15	-1.749	71
	Intermediate	2.00	1.11	2.45	1.15	-1.774	67
	Low	1.81	1.05	2.94	1.00	-3.621**	32
MEM	Say new word aloud when studying						
	High	2.54	1.12	3.47	1.27	-3.380**	72
	Intermediate	2.48	1.18	3.18	1.18	-2.623*	69
	Low	2.32	1.28	2.88	1.36	-1.347	29
MEM	Use physical action when learning a word						
	High	1.81	0.74	1.87	0.96	-0.291	69
	Intermediate	1.58	1.01	1.70	0.92	-0.526	73
	Low	1.23	0.50	1.94	1.00	-2.686*	19
COG	Written repetition						
	High	2.59	1.14	3.37	1.34	-2.690*	72
	Intermediate	2.88	1.35	3.67	1.24	-.2.723*	72
	Low	2.90	1.35	4.25	0.93	-4.007**	41
COG	Word lists						
	High	1.84	0.99	2.00	1.07	-0.684	73
	Intermediate	1.52	0.74	2.33	1.16	-3.544**	50
	Low	1.90	1.14	2.56	1.03	-2.006	33
COG	Take notes in class						
	High	3.46	1.04	4.05	1.18	-2.303*	72
	Intermediate	3.73	1.23	4.03	1.05	-1.183	75
	Low	3.39	1.23	3.75	0.86	-1.180	41
COG	Keep a vocabulary notebook						
	High	1.54	0.77	1.87	1.04	-1.553	68
	Intermediate	1.50	0.74	1.73	0.91	-1.187	60
	Low	1.23	0.43	1.88	1.09	-2.298*	17
MET	Listen to English songs						
	High	3.92	1.16	3.61	1.28	1.109	73
	Intermediate	2.81	1.39	3.21	1.29	-1.324	72
	Low	2.55	1.26	3.75	1.06	-3.439**	35
MET	Listen to English broadcast						
	High	3.00	1.43	2.18	1.25	2.625*	71
	Intermediate	1.71	1.01	1.94	1.20	-0.908	61
	Low	1.55	0.93	1.88	1.15	-0.985	25

* p < .05, ** p < .005

4.5 Students' Reflection on Strategy Use

This section displays the results of open-ended questions in the Vocabulary Learning Strategy Questionnaire (VLSQ). Section 4.5.1 reports the difficulties that students encounter when learning English vocabulary. The next section shows the five most effective and the five least effective strategies in terms of male and female students' viewpoints, and possible reasons for their choices. The last section demonstrates the students' needs of in-service teachers' assistance in learning vocabulary.

4.5.1 Difficulties in Learning English Vocabulary

According to the participants, the difficulties they had in learning vocabulary could be categorized into pronunciation, meanings, spelling, part of speech, usage and others. The results in Table 4.21 showed male and female students' overall difficulties in vocabulary acquisition. It can be seen that the top three difficulties were pronunciation, meanings and spelling, which occupied around ninety percent of the total difficulties. Without obvious gender differences, the findings showed that most male and female students found pronunciation, meanings and spelling the hardest aspects in learning vocabulary. As for the ranking of difficulties, male students regarded meanings of the words the most difficult followed by pronunciation, but female students thought just opposite.

Table 4.27 Learning Difficulties by Male and Female Students

Gender	Male		Female	
Difficulties	Number	%	Number	%
Pronunciation	39	32.50	37	36.27
Meanings	48	40.00	32	31.37
Spelling	24	20.00	20	19.61
Part of Speech	6	5.00	8	7.84
Usage	2	1.67	5	4.90
Others	1	0.83	0	0.00
Total	120	100.00	102	100.00

4.5.2 Effectiveness of Vocabulary Learning Strategies

This subsection focuses on the most and the least effective strategies to the participants. To answer the question, participants were encouraged to offer more than one answers with reasons why they chose this strategy. A total of 137 answers were offered by male students in replying the most effective strategies and 122 by female students. At the same time, male students also provided 125 answers about the least effective strategies and female students offered 96. All these strategies were ranked according to the percentage of appearance in the total amount. The overall results shown in Table 4.22 illustrated only the five most effective strategies and those in Table 4.23 displayed the five least effective strategies.

4.5.2.1 Five Most Effective Strategies

The top five most effective strategies were mentioned by both male and female students, including verbal repetition, listen to English songs, study the spelling of a word, study the sound of a word, and written repetition. To male and female students, the five top effective strategies were the same ones but with a different ranking order. Except the third and fifth strategy, the other three were in the identical order. Whereas male students thought written repetition the fifth, female students regarded it as the third.

Table 4.28 Five Most Effective Strategies by Male and Female Students

Rank	Male		Female	
	Strategy	%	Strategy	%
1	Verbal repetition (COG)	18.25	Verbal repetition (COG)	18.03
2	Listen to English songs (MET)	11.68	Listen to English songs (MET)	13.93
3	Study the spelling of a word (MEM)	8.76	Written repetition (COG)	13.93
4	Study the sound of a word (MEM)	5.84	Study the sound of a word (MEM)	10.66
5	Written repetition (COG)	5.54	Study the spelling of a word (MEM)	6.56

In addition, both male and female students shared the same reasons for the most effective strategies. In verbal and written repetition, they both agreed that these two strategies were helpful, efficient and easier in enhancing their impression and memory of new words. It is evidenced by the student's answers below:

"*When I say the word, the impression of the word is enhanced, consequently helping the retention of the word*" (C3S8).

"*It is easier to memorize the word by writing it many times*" (C6S32).

With similar reasons, studying the spelling or the sound of a word also made the word more impressive, simple and convenient to remember. It also seemed useful to spell the word correctly if they knew how to say the word accurately. This could be seen from the students' replies:

"*Easy, convenient, and time-saving*" (C4S26).

"*After knowing the sound, I will know how to spell the word correctly*" (C1S11).

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* The coding system in the present study code-names all the students. C represents the class they belong to and S shows the numbers of the students. S1 to S20 are female students and S21 to S40 are male students.

As for listening to English songs, both groups thought that it could arouse their interests in finding out the meanings of unknown words if they intended to understand the lyrics. They might also sing along with the melody and learn new words at the same time. Here are two replies from one male student and one female student.

"*I love to listen to English songs and sing with the melody*" (C5S28).

"*When listening to English songs, I would look up the new words in the dictionary actively in order to understand the lyrics*" (C6S15).

4.5.2.2 Five Least Effective Strategies

On the other hand, the choices of the least effective strategies were different between male and female students. The results in Table 4.23 showed that two out of the five strategies were the same but in different ranking order by both male and female students: configuration, using keyword method, and reading English novels. Male students regarded reading English novels the least effective strategies, while female students believed configuration to be the least one. As for the other two different strategies, male students thought listening to English songs and imaging word form as two of the least effective strategies. Nevertheless, female students' list of the least effective strategies included English-English dictionary and asking family members for meaning.

Table 4.29 Five Least Effective Strategies by Male and Female Students

Rank	Male			Female		
	Description	%		Description	%	
1	Read English novels (MET)	10.4		Configuration (MEM)	8.33	
2	Configuration (MEM)	7.2		English-English dictionary (DET)	6.25	
3	Listen to English songs (MET)	6.4		Use Keyword Method (MEM)	6.25	
4	Use Keyword Method (MEM)	5.6		Read English novels (MET)	5.21	
5	Image word form (MEM)	5.6		Ask family members for meaning (SOC)	4.17	

When it comes to the reasons for the least effective strategies, male and female students shared slightly different opinions. In configuration, male students believed it was less useful and less effective while female students thought it was complicated and confusing. The differences could be seen from their replies below:

"*I would rather spend time on the spelling than notice the rising or the falling of the letters in the word*" (C2S34).

"*Words with similar configuration might cause confusion*" (C5S1).

As for reading English novels, male students supposed it was too difficult to understand the story while female students believed the contents were very hard and it was time-consuming to look up such many unknown words. The following students' answers show the differences.

"*Too difficult for me to understand the content*" (C4S25).

"*If I don't understand any words, I have to look them up in the dictionary or ask teachers' for meanings. It takes too much time*" (C6S4).

In using keyword method, male students did not consider it was common to match Chinese sounds with English words; nevertheless, female students thought Chinese sounds might blur the real pronunciation of the English words, probably causing incorrect spellings. The differences could be illustrated as follows.

"*Not every English word could be created with a similar Chinese word*" (C3S29).

"*The keyword method is likely to cause confusion*" (C1S7).

In addition to the three strategies above, male students, especially those in I-S, believed English songs were sung so fast that the contents were beyond their comprehension. Consequently, they could not acquire vocabulary efficiently.

"*English songs are too fast. I couldn't understand them at all*" (C3S31).

They also treated imaging word form as an impractical and arduous strategy to use, only resulting with a short-term memory.

"*It is time-consuming. It is not suitable for abstract words*" (C4S39).

For female students, English-English dictionary not only reduced their interests but also caused trouble in understanding the English explanation of the word they tended to know. Moreover, they expressed that their family members either spent little time answering their English questions or had lower English proficiency than themselves.

"*I look up words in the dictionary because I don't understand the word. If the explanation is in English, then I have to look up more words*" (C3S10).

"*My parents' English is not better than mine*" (C4S1).

To conclude the findings above, male and female students did not reach a consensus as strongly as they did on the most effective strategies. On one hand, while male and female students shared all the most effective strategies, only three out of the five least ones were shared by them. On the other hand, the percentages of the five least effective strategies were not as high as those of the most effective ones. Over 50% of answers by male and female agreed to the five most effective strategies, but the total of the five least effective strategies were only slightly higher than 30% by male (35.2%) and female students (30.21 %). This might indicate that opinions on the least effective strategies varied a lot among not only male students but also female students. It is also interesting to note that the strategy, listening to English songs, was regarded as the most effective and the least effective strategy at the same time by male students.

4.5.3 Vocabulary Learning Strategies Found by Students

This subsection focuses on the strategies found by the participants. To answer the question, the participants were encouraged to offer more than one answers. Fifty strategies were mentioned by both male and female students, and were counted by percentage (see appendix D).

The top five strategies use most frequently are shown in Table 4.24. As can be seen, on the one hand, listening to English songs was the most frequent use strategy by both male (12.79%) and female (11.06%) students. It seems that both of them also use verbal repetition strategy. On the other hand, the other three strategies found by male students were studying

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the spelling of a word, imaging word form and watching English movies, while those by

female students were written repetition, guessing from textual context and electronic

dictionary. Though not much similarity was shared by both genders on strategies found by

the students themselves, the total percentage of the top five strategies by male students

(36.99%) and female students (35.58%) also showed that there was still a large percentage of

each gender having different opinions.

Table 4.30 Strategies Found by Male and Female Students

Rank	Male		Female	
	Description	%	Description	%
1	Listen to English songs (MET)	12.79	Listen to English songs (MET)	11.06
2	Verbal repetition (COG)	8.68	Written repetition (COG)	8.17
3	Study the spelling of a word (MEM)	5.48	Verbal repetition (COG)	7.21
4	Image word form (MEM)	5.02	Guess from textual context (DET)	4.81
5	Watch English movies (MET)	5.02	Electronic dictionary (DET)	4.33

4.5.4 Needs for Teachers' Assistance

To answer the last question, students expressed various needs for teacher's assistance.

Both male and female students reached agreements in three ways. First, they hoped that

teachers could offer more relating vocabulary, synonyms or antonyms. Besides, both male

and female students also expected that teachers could employ English songs into classrooms

for learning vocabulary, which would stimulate their learning interest and enrich their

learning experiences. It could be clearly seen from the answers below:

"*Teach English songs which include newly taught words. Through the help of*

music, it could enhance the retention of the word" (C2S26).

"*Teach more English songs, and learn more English words*" (C5S20).

What is more, they regarded pronunciation practice and teachers' explanation, either in English or in Chinese, as helpful teaching activities. This could be seen from their answers:

"*Teach the pronunciation of the word again and again*" (C6S35).

"*Offer complete explanations of the word.*"(C6S22).

However, male students differed from their female peers from the following three aspects. First, male students would like teachers to play English movies where vocabulary was used in real contexts, but only one female student thought this way. One of the male students replied,

"*Watch English films. Because I want to know how foreigners speak English in authentic context*" (C3S27).

Also, some female students preferred sentence making while few male students did. This could be seen from one reply by a female student.

"*Have more activities of making sentences*" (C6S8).

Thirdly, in other answers, male students favored dynamic activities, such as vocabulary games or explanation with body language, visual aids like flash cards, or magazines. On the other hand, female students liked academic practice, such as analyzing part of speech or taking vocabulary tests. The following answers lend support to the results.

"*Play vocabulary games*" (C4S23).

"*Give more vocabulary quizzes*" (C1S7).

CHAPTER FIVE

DISCUSSION

This chapter discusses the findings of the current study. The chapter is comprised of five sections, which answer the five research questions. Section 5.1 discusses the differences of vocabulary strategy use among the three vocabulary levels. The following section discusses the frequencies of vocabulary learning strategy (VLS) use by male and female junior high school students. The next section discusses gender differences on strategy use. Section 5.4 discusses gender differences on strategy use in each vocabulary level according to data by conducting t-Test. Section 5.5 discusses students' difficulties of learning vocabulary, the most effective and least effective strategies with possible reasons, and their needs for teachers' help.

5.1 Vocabulary Level Differences of Vocabulary Strategy Use

This section aims to answer Research Question 1: Do junior high students of High-Scoring, Intermediate-Scoring and Low-Scoring vocabulary proficiency levels use vocabulary learning strategies differently? If they do, what would the differences of vocabulary learning strategy uses be? This section contains (1) the use of overall strategies and the five strategy categories, and (2) the use of individual strategies, and (3) a comparison of the findings of the current study and Cheng's (2006) study.

5.1.1 Vocabulary Level and the Use of Overall Strategy and the Five Strategy Categories

In Section 4.1.1, the one-way ANOVA results have shown significance on the overall strategy use that the High-Scoring level (H-S) has a more frequent use of overall strategy use than the other two levels (i.e., H>I, H>L). The finding corroborates with those of previous studies (Ahmed, 1989; Gu & Johnson, 1996; Cheng, 2006; Kung, 2004; Lin, 2006; Nasajji, 2006; Tung, 2007; Wang, 2004) that learners of larger word size tend to use overall strategies more often. As Green and Oxford (1995) suggested in their study on language learning strategies (LLS), the lowest proficiency level tend to apply strategies less often than the other proficiency levels.

In addition to overall strategy use, significances were found in four strategy categories, including determination strategies, social strategies, memory strategies and metacognitive strategies. Wang's (2004) findings also lend support to the results in the present study that learners of higher vocabulary scoring levels use the main strategy categories more often than those lower ones, except cognitive strategies. After the post-hoc test, the results show that H-S used determination strategies, social strategies and memory strategies significantly more frequently than the Low-Scoring level (L-S), who also used determination strategies and metacognitive strategies less frequently than the Intermediate-Scoring level (I-S). Notably, most differences on strategy use occurred between L-S and H-S. The possible reason for the result here might be the so called "bipolar distribution phenomenon" in Taipei city, which stands for the great difference between good learners and poor learners in terms of general

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English proficiency. As Chang (2006) stated, Taiwanese learners vary in a great deal on their

English proficiency, even if they live in the same administrative district. The obvious

differences on proficiency levels might play the main role on the variations of strategy use.

5.1.2 Vocabulary Level and Individual Strategy Use

In addition to the use of overall strategy use and the five strategy categories, vocabulary

level differences on individual strategies are discussed in the sequence of the four strategy

categories with significances: determination strategies, social strategies, memory strategies

and metacognitive strategies. Cognitive strategies, which show no significant vocabulary

level differences in overall, are discussed last.

5.1.2.1 Determination Strategies

The one-way ANOVA results have shown that significances appeared in five

determination strategies which concern mostly analyzing lexical features, such as part of

speech and affixes and roots, conventional dictionary use, like English-English dictionary

and English-Chinese dictionary, and meaningful contextual guessing. Of the five strategies,

L-S employed all the strategies less frequently than H-S, who only had a more frequent use

on the former three strategies than I-S. A further discussion on the results is as follows.

First, in analyzing part of speech and affixes and roots, H-S used the strategy

significantly more often than the other two groups (i.e., H>I, H>L). The possible reason

might be that the former's lexical knowledge is rich enough for them to do further analyses

which directly and effectively assist in determining the meanings of unknown words.

Besides, compared with the other two groups, L-S significantly guessed from the textual context less frequently (i.e., H>L, I>L). The finding is in agreement with Rubin's (1975) suggestion that higher proficient learners tend to make more sophisticated guessing from contextual clues at hands when meeting unknown words. Being highly aware of the importance of learning words in context, good learners are able to learn new words more effectively by adopting the strategy (Ahmed, 1989).

To find the meanings of new words, dictionary use is popular with language learners (Schmitt, 1997; Jiménez Catalán, 2006). The findings in the current research have discovered vocabulary level differences on the use of conventional dictionary, which is supported by Ahmed's (1989) finding that good learners use bilingual (English-Chinese) dictionary and monolingual (English-English) dictionary more in an effective way. H-S significantly used English-Chinese dictionary more frequently than L-S (i.e., H>L), but they used English-English dictionary more often than the other two levels (i.e., H>I, H>L). Two possible reasons might be able to explain the differences among the three levels. First, H-S had a greater motivation in knowing a new word; as a result, they looked up the new word for its L1 translation, especially more actively than those underachievers. Second, I-S and L-S used English-English dictionary less often because their word bank might not be large enough for them to understand the English explanation of the word entry. Kirkness (2004) reviewed three advanced learners' dictionaries and suggested that learners need to have a vocabulary size as many as 2000 words at least in order to use a monolingual dictionary

effectively and successfully, lending support to the explication of the result.

5.1.2.2 Social Strategies

According to the results, significances took place in five social strategies, three of

which concern active inquiries for teachers' help, one of which involves the discovery of

meanings through group work, and the other of which is the interaction with native speakers.

The following paragraphs will discuss the results from three aspects.

Firstly, when it comes to the strategies of asking for teachers' assistance, the

significances lied between H-S and L-S by showing that the former had a higher frequency

use than the latter (i.e., H>L). Griffiths (2008) suggested that "the strategies reportedly used

highly frequently by higher level students relate in some way to the use of resources,

including human resources" (p. 91). In the case, good learners in the study used their

teachers as a resource for paraphrase or synonyms of the new word and for a sentence

involving the new word.

Moreover, L-S tended to work with others to discover the meaning of new words less

frequently than H-S (i.e. H>L). In other words, unsuccessful students might not cooperate

with others as often as their more successful peers in learning or practicing vocabulary. After

reviewing earlier research findings, Oxford (1990) concluded that "cooperative strategies

might not be second nature to all language learners" (p. 146). Therefore, she went on

suggesting that learners who accept special instruction or encouragement on cooperative

strategies may tend to improve their language learning through peer work.

In addition, H-S had a more frequent use of interacting with English native speakers than the other two levels (i.e., H>I, H>L). The finding corroborates with Griffiths' (2008) discovery that learners of higher levels tend to talk to native speakers more frequently. The possible reason might be that the more advanced learners have the access to the environment where native speaks show up. Chang (2006) noticed a phenomenon that some advanced students, particularly those in a metropolis like Taipei City, have received extra English instruction by native speakers since childhood, therefore, having more opportunities to interact with native speakers.

5.1.2.3 Memory Strategies

As the ANOVA results have shown, significances occurred in twelve strategies, one of which, associating the word with its coordinates, was not significantly different between the three groups after the post-hoc test. The following discussion could be divided into six parts.

First of all, the higher vocabulary levels students belong to, the more frequently they report to use the two strategies of connecting the word to its synonyms and antonyms and using new word in sentences (i.e., H>I>L). The result implies that good learners build links between a new word and its synonyms or antonyms to help increase the retention of the word. Also, students of lower levels seemed to pay less attention to the value of a word's usage in a sentence. Cook (2008) expressed that learning to know how to use a word in a sentence is not only important but also crucial in enhancing the overall knowledge of a word.

Besides, four strategies were applied significantly more often by H-S than by the other

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two scoring levels (i.e., H>I, H>L). Two of the four strategies concern grouping new words together, either to study them or to make up a story with them. The finding indicates that good learners aim to memorize new words encountered with the help of grouping strategies. This could be considered as what Nation (2001) suggested as deliberate vocabulary learning that participants are focused and goal-directed to acquire certain words in groups. However, though H-S grouped words within a storyline more often, the result that reports the low use of the three groups might be because the strategy is time-consuming and difficult to make up an impressive story with the available new words.

Thirdly, the other two strategies, remembering affixes and roots and paraphrasing the word's meaning, shared the same pattern above (H>I, H>L). They both concern the help of meaning in enhancing the retention of the target words. Cook (2008) suggested learners deduce the word forms to understand the meaning; that is, affixes and roots play the key roles in the acquisition of word's meaning, directly helping learners memorize the word. What is more, through personalized paraphrase of the word's meaning, students could easily remember what the word means and store it in the long-term memory.

Furthermore, as for the other memory strategies, L-S used two strategies less often than the other two higher levels: using scales for gradable adjectives and remembering part of speech (i.e., H>L, I>L). The finding implies that L-S were not aware of the importance of grammatical knowledge of a word as much as the two more successful groups. Without enough grammatical knowledge of English words, poor learners might fail to distinguish the

part of speech of a word, not to mention the three scales in an adjective.

In addition, the remaining three memory strategies showed significances between only L-S and H-S. L-S used the two strategies, studying the sound of the word and learning the words of an idiom together, less frequently than H-S (i.e., H>L). With a consistent result, Cheng (2006) suggested the lowest level students "pay much more attention to the sound of the word" (p.124) because knowing the pronunciation of a word helps remember correct spelling in long-term memory. Also, after reviewing former research, Schmitt (1997) suggested that learning new words in "multi-word chunks" (p. 215), such as idioms or phrases, is a good way to broaden one's vocabulary size. Therefore, it might be necessary for those unsuccessful learners to employ the strategies as mnemonic devices for the retention of a word.

Last but not least, it is interesting to see that L-S used imaging word form more often than I-S (i.e., L>I). Even though having a slightly higher frequency use of the strategy, both groups seldom used the strategy and no students from L-S considered the strategy effective. As a result, it is likely to conclude that imaging word form as a VLS might benefit vocabulary learners but not those in the present study.

5.1.2.4 Metacognitive Strategies

The results have displayed that significances were found in nine metacognitive strategies, most of which concern the use of English-language media. After the post-hoc test, these strategies were applied significantly more often by H-S than the other two levels

(i.e., H>I, H>L). The finding is also in agreement with those of Cheng's (2006) and Wang's (2004) studies. Griffiths' (2008) statement again supports the finding that good learners do resort to various resources more frequently. In other words, good learners increase their word bank through the use of English-language media, especially English movies, magazines, songs and broadcasts in a greater deal. "Learner's initiative and independence, along with the amount of extracurricular time spent on language (and vocabulary) learning," as Kojic-Sabo and Lightbown (1999) stated, "are seen as two crucial factors related to higher levels of achievement" (p. 190). Therefore, it seems of great importance for the poor learners to employ various resources at hands with an active attitude to enlarge their vocabulary size in their free time.

In addition, as far as continuous and repetitive review on new words is concerned, H-S significantly used the strategy more often than L-S (i.e., H>L). According to Naiman et al. (1978), one of the strategies that good language learners apply is to pay attention to their vocabulary learning constantly (cited in Cook, 2008, p. 95), which could explain the finding here. Consequently, those of lower levels should review new words more often to improve their vocabulary bank.

5.1.2.5 Cognitive Strategies

Though the results have shown no significance in cognitive strategies, the use of the strategy, listening to the CD of word lists, seemed to vary among the three levels. However, after the post-hoc test, none of three groups did use the strategy differently from each other.

The result is in accord with Wang's (2004) finding that good learners do not use the category significantly more often than poor learners. The result might be supported by the claim in a study (O'Malley et al., 1985) that Asian learners depend much on strategies for rote memorization which play a major part in cognitive strategies. As a result, little significance could be found between vocabulary levels in the use of this category.

5.1.3 Comparison between the Present Study and Cheng's (2006) Study

As reviewed in Chapter Two, VLS have been studied by some researchers in Taiwan, focusing on participants of different ages or the relationship between the use of VLS and English proficiency or vocabulary proficiency. Cheng's (2006) study and the present study both examined how vocabulary proficiency affected the choice of VLS use by junior high school students. The similarities and differences between the two studies are discussed as follows.

Generally speaking, vocabulary level significances took place when it comes to overall strategy use. As for the use of the strategy categories, both studies found that significances occurred in three categories: determination strategies, memory strategies and metacognitive strategies. L-S used overall strategy and the three strategy categories less frequently than H-S (i.e., H>L). However, the results in the present study have shown that significances existed in social strategies, whereas Cheng's (2006) study found no differences in the category.

The differences between the findings here and Cheng's might be well explained from

two aspects. The first possible factor is different learning backgrounds. A former study (Chang et al., 2005) examined the scores on the Basic Competence English Test (BCET), an achievement test which is designed to evaluate Taiwanese junior high school students' English ability, and concluded that students from urban areas scored significantly higher than those from rural areas. The present study examined participants in a city context, Taipei, while Cheng's participants were from a rural county, Maoli. In other words, participants in the present study may have different vocabulary ability than those of Cheng's, probably resulting with differences on English proficiency, which, according to Green and Oxford (1995), might cause differences on the use of strategies.

Besides, contextual factor is another key variable that might potentially affect the choice of strategy (Larson-Freeman, 2001), which illustrates the difference on social strategy use between the present study and Cheng's. With students from a different geographical region from those in Cheng's, Wang (2004) investigated VLS use by senior high students, who were also from Taipei City, and found corroborative results as those in the present study. Provided with the results of the three studies, the inference might be pointed out that the use of social strategies tended to show greater variations between students of different vocabulary levels in a city context.

5.2 Use of Strategies by Male and Female Students

This section discusses the frequencies of strategy use by male and female students, aiming to answer Research Question 2: What are the vocabulary learning strategy uses of

male and female students in junior high school in Taipei? The section contains two main

parts: (1) the use of overall strategy and strategy categories, and (2) the use of individual

strategies by male and female students.

5.2.1 Use of Overall Strategy and Strategy Categories by Male and Female Students

The results in Section 4.2.1 have shown that both male and female students could be

regarded as moderate users of overall strategy. In other words, male students and female

students did not apply VLS very frequently. The finding corroborates with those of prior

studies (Gu & Johnson, 1996; Kudo, 1999; Fan, 2003; Wang, 2004; Cheng, 2006) that Asian

students use overall strategies moderately. One possible reason for this might be that

Taiwanese junior high students are seldom introduced with or are less aware of these VLS in

formal instruction at school (Cheng, 2006). Also, O'Malley et al. (1985) stated that Asian

learners rely most on certain strategies concerning rote learning and are reluctant to use more

deep-processing strategies. Therefore, both male and female participants in the current study

only reached a medium use of VLS in overall.

As for the five strategy categories, both male and female students used determination

strategies the most, followed by cognitive strategies, memory strategies, social strategies,

and metacognitive strategies, which were favored the least. Both male and female students

used the former three categories moderately but the latter two with low use. In other words,

male and female students only sometimes used determination strategies, cognitive strategies

and memory strategies; however, they both seldom employed social strategies and

metacognitive strategies in learning vocabulary. The results are similar to those in Wang's (2004) and Cheng's (2006) that determination strategies, cognitive strategies and memory strategies are used moderately, whereas social strategies are seldom applied. The results suggest that not only male students but also female students might favor the strategies in looking for the meaning of a word by themselves the most but the strategies which take self-oriented studying the least.

5.2.2 Use of Individual Strategies by Male and Female Students

In this subsection, the frequencies of individual strategy use by male and female students are discussed. Based on the frequencies of the five categories, the category with the highest mean score is discussed first, and the one with the lowest the last. That is, determination strategies are discussed the first, followed by cognitive strategies, memory strategies, social strategies, and metacognitive strategies. Also in each category, the top most frequently used strategies are discussed first, followed by the least frequently favored strategies.

5.2.2.1 Frequencies of Determination Strategies by Male and Female Students

As the results in Section 4.2.1 have displayed, determination strategies were the most frequently used strategy category not only by male students but also by female students. The finding implies that both male and female students preferred finding out the meaning of a word on their own. To examine individual determination strategies further, male and female students in the present study shared a similar pattern on the strategy use. Both of them used

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the strategy, guessing from textual context, the most, followed by analyzing any available

pictures and gestures. The finding is consistent with those of Wang's (2004) and Cheng's

(2006) that guessing strategies are the most frequently used strategies. Cook's (2008)

statements not just lend support to the finding but warn us that "[g]uessing is a much-used

strategy in a second language. But of course it can go wrong" (p. 57). Therefore, as Schmitt

(2000) suggests, learners may apply several strategies at the same time to discover correct

meanings of unknown words carefully. As a result, male and female students resort to

available pictures or gestures in determining a word's meaning besides guessing strategies.

The possible reasons for this could be that, on one hand, there are a lot of pictures which

illustrate concrete vocabulary in today's textbooks. On the other hand, junior high students

are trained to take a pile of quizzes, tests and exams which contain many pictures as clues in

reading comprehension tests (Cheng, 2006).

When it comes to determination strategies reported the least frequently used,

English-English dictionary was favored the least often, followed by another dictionary use,

bilingualized dictionary, which contains both English and Chinese explanations. According

to students' response, these two strategies of dictionary use may cause more trouble in

figuring out unknown words in English explanation, especially those in English-English

dictionary. Their response seems to corroborate with Kirkness's (2004) suggestion that

learners with a vocabulary size as many as 2000 are capable of using monolingual dictionary

(English-English dictionary) in a more effective way.

However, among all dictionary strategies, electronic dictionary is most popular one to both male and female students. According to students' response in open questions, both genders regarded electronic dictionary as a useful, portable and time-saving device that offers not only Chinese explanation but also the articulation of the word. Based on the findings of dictionary use above, when training strategies of dictionary use, teacher should keep in mind that no dictionary use is perfect to every student unless he or she is capable of using it effectively.

5.2.2.2 Frequencies of Cognitive Strategies by Male and Female Students

As stated earlier, cognitive strategies were the secondly frequently used category by male and female students. Even though previous studies (Cheng, 2006; Kudo, 1999; Oxford, 1990; Wang, 2004) advocated that cognitive strategies are the most frequently used strategies by language learners, the finding of the current study revealed no coincidence, however.

The frequencies of individual cognitive strategies could also be seen from two views: the most frequently used strategies and the least ones. Firstly, both male and female students used verbal repetition the most often, followed by taking notes in class. The two strategies were reported with a high use by both genders. Cook (2008) suggested that learners write or say a word repeatedly until they know it by heart. Therefore, male and female students favored repetitive practice like verbal repetition quite frequently to maintain the target word. Besides verbal repetition, both genders also took notes in class quite often. According to

students' response, they benefited from taking notes in class because it was more convenient to review new words by jotting down notes. Schmitt (1997) confirmed the response by stating that "[t]aking notes in class invites learners to create their own person structure for newly learned words, and also affords the chance for additional exposure during review" (p. 215). In addition to the effectiveness and convenience, male and female students rely much on rote learning and the use of individualized study aids possibly due to strategy training they have received in class (Moir & Nation, 2008). This also suggests that verbal repetition after teachers and taking notes in class might be two of those popular activities in language classrooms now.

Secondly, the two least frequently used strategies by both genders are keeping a vocabulary notebook and putting English labels on physical objects. The result is consistent with Cheng's (2006) finding that students tended to pay little attention to strategies of applying study aids which are not ready-made. She continued to illustrate the discovery by stating that junior high school learners are reluctant to spend extra time or efforts creating study aids, such as a vocabulary notebook or English labels. Besides, the participants are ninth graders of junior high school whose vocabulary size covers most concrete words in their daily life, thus lessening their needs or motivation to create English labels on physical objects. From the findings above, it is reasonable to conclude that young male and female learners tended to depend a lot on cognitive strategies related to practicing repeatedly but not those on which study aids might cause inconvenience.

5.2.2.3 Frequencies of Memory Strategies by Male and Female Students

As stated earlier in Section 4.2, memory strategies, the third most frequently used category, were sometimes applied by male and female students. The finding is in consistent with those in previous Taiwanese studies that college students and senior high school students favor the category in the third place (Liao, 2004; Wang, 2004). Besides, the medium use of memory strategies implies that male and female students both preferred memorization techniques in vocabulary learning. Compared with other categories, memory strategies contain the most items which belong to medium use: 12 items by male and 14 by female. That is, male and female learners rely much on memory strategies in retrieving new information from the place where they store verbal materials (Oxford, 1990). Through the help of these strategies, students could recall necessary lexical items easily in order to communicate with others successfully.

After examining the twenty-two strategies closely, the researcher found three noteworthy findings of the strategy use by both genders. First, the strategy, studying the spelling of a word, was the most frequently used, followed by studying the sound of a word. The two strategies belonged to high frequency use. The finding corroborates with the results in Cheng's research (2006) that junior high school students "favor explicitly studying the form of a word, i.e. spelling and pronunciation, to facilitate recall" (p. 107). The possible explanation could be that, according to students' response, it is easier and more convenient to remember the word if they directly dig into the spelling or pronunciation of the word.

Their response seems to corroborate with Wang's (2004) finding that both male and female students treat the two strategies as instant mnemonics, which only take them little effort and could be processed with ease. Despite that the effect of the strategies might not last long, the intricate application of the two, spelling and pronunciation, are found to be the most popular combination of strategy use among students (Cheng, 2006; Gu & Johnson, 1996; Schmitt, 1997; Fan, 2003; Wang, 2004).

Secondly, the five least frequently used memory strategies by both genders are the same. The least favored is configuration, followed by imaging word form, using physical action when learning a word, grouping words together within a storyline and underlining initial letter of the word. The mean scores of these strategies, lower than 2, imply that they attract little attention from both genders. The possible explanation could be that the participants were not familiar with configuration, a strategy which students were surprised at when knowing it could be one strategy. As for the other four least used strategies, they are known by the participants but thought to be time-consuming, ineffective and impractical when learning a word. The participants even expressed that they would rather study the spelling or the sound of a word directly than create an image based on the form of the word or make up a story with several words.

Moreover, female students generally used memories strategies more frequently than male students, except three strategies, imaging word's meaning, connecting word to a personal experience, and part of speech (remembering). The findings are consistent with the

results in Jiménez Catalán's (2003) study that male students had a higher percentage on the use of part of speech (remembering) and imaging word's meaning. Being the third frequently used memory strategy, part of speech (remember) could be considered as an important strategy to male students in vocabulary learning. As for the other two strategies, imaging word's meaning and connecting word to a personal experience, were used more often by male students, but the mean differences did not indicate much differences between both genders. Taking the result into consideration that the two strategies both belong to medium use by both genders, male and female students might not differ much from each other on the use of the two strategies.

5.2.2.4 Frequencies of Social Strategies by Male and Female Students

Based on the results, social strategies were the second least frequently used strategy category with a low use by both male and female students. The finding is in agreement with those in previous studies that learners do not apply social strategies very often (Cheng, 2006; Kudo, 1999; Schmitt, 1997; Wang, 2004). Two possible factors could explain the result. First, Schmitt (1997) claims that the corporative work on vocabulary learning is not commonly believed to be achieved by learners themselves. Therefore, compared with other strategy categories, social strategies are favored less because learners could not benefit on their own. Besides, another explanation of the result could be cultural factors. Social interaction is not highly encouraged in Taiwanese classrooms while it is part of learning behaviors in western classrooms. It can also be seen from Politzer and Mcgroaty's (1985)

and Bremner's (1999) statements that interaction with others is not a popular learning style to Asian students.

With the regard to the frequency use of individual social strategies by male and female students, the discussion could stress on three foci. First, the strategy, asking classmates for meaning, was the most used social strategy, followed by asking teacher for L1 translation, studying and practicing meaning in a group and asking family members for meaning. The finding agrees with those of Cheng's (2006) and Wang's (2004) that students interact with classmates, teachers or family members for the meaning of a word. Nation and Meara (2002) recommended learning vocabulary from meaning-focused output and stated that students could positively and successfully enlarge vocabulary size by negotiating the meanings of unknown words with each other.

Nevertheless, with a main focus on meaning negotiation, male and female students almost never apply the strategies, teacher checks students' flash cards or word lists for accuracy or interacting with native speakers. The possible reason for the former strategy might be that few male students or female students favor strategies which take extra effort to make study aids, such as word lists or flash cards, not to mention the interaction involving teachers' check the accuracy of the study aids. As for the latter strategy, students have less access to native speakers than to classmates, teachers, or family members, resulting with less interaction with English native speakers.

Moreover, it is noteworthy that both male and female students tended to ask classmates

for meaning the most, teachers the next, and family members the last. The possible reason

could be seen from another frequently favored strategy, practice meaning in a group,

especially with their peers. Also, among strategies involving teachers, male and female

students both turn to teachers for L1 translation the most often, instead of synonyms or

antonyms, which may cause larger vocabulary load to them.

5.2.2.5 Frequencies of Metacognitive Strategies by Male and Female Students

Metacognitive strategies are the least frequently used category by male and female

students (see Section 4.2). The category was only reported to belong to low use, which

means that male and female students seldom apply metacognitive strategies to control and

evaluate their own learning. Cheng's (2006) result also lends support to the finding in the

present study that junior high students do not make an overview of their learning process by

planning or monitoring. It might be that most junior high students are still not aware of the

importance of autonomy. In Taiwan, junior high school students depend heavily on teacher's

instruction which is usually teacher-oriented. Students are encouraged to reach the mastery

of knowledge from textbooks, thus ignoring the importance of learner independence or

learner initiative, according to Kojic-Sabo and Lightbown (1999), which is especially true in

language learning.

After the further examination of individual metacognitive strategies, there are three

important findings worth more discussion. First, of the eight strategies, the most frequently

used one is skipping or passing new word, which reached the high use. The finding implies

that learners tend to skip unknown words when meeting them for the first time. As stated in

Schmitt's (1997) study, the strategy is popular with his Japanese participants; however, he

also found that the strategy is frequently used but not helpful to the users. It is reasonable to

infer from Schmitt's discovery that skipping the unknown words might not hinder the

fluency of vocabulary learning but it might not be beneficial to learners if they do not come

back to the new words later.

Secondly, the second and third most frequently used metacognitive strategies are

listening to English songs and watching English movies. These two strategies include the use

of English-language media. In line with the results in Wang's (2004), the finding could be

that western music, especially those in USA, is popular with Taiwanese. The participants

expressed that, unlike the use of other English-language media, English songs and movies

brought them joy of entertainment instead of pressure of studying.

Nevertheless, the least frequently used strategies in this category are also related to the

use of English-language media: reading English newspapers, reading English novels and

watching English TV news. A possible explanation for the result is that the contents in

English newspaper, English novels and English TV news are far beyond junior high

students' comprehension in general. Though these three strategies could offer much input,

Nation and Meara (2002) cautioned that unknown vocabulary in a learning passage, either

through reading or listening, should only contain a small portion, "preferably around two

percent" (p. 40). Therefore, the three strategies attracted little attention from both male and

female students due to the overwhelming difficulty in the content.

5.3 Gender Differences of Vocabulary Strategy Use

This section discusses gender differences on the use of VLS in answering Research

Question 3: Are there any differences of the use of vocabulary learning strategies between

genders of junior high school students in Taipei? If yes, what would the differences of

vocabulary learning strategy uses be? The discussion contains two parts: (1) gender

differences on the use of overall strategy and strategy categories, and (2) gender differences

on individual strategy use.

5.3.1 Gender Differences on the Use of Overall Strategy and Strategy Categories

In Section 4.3.1, the results of t-Test have shown that male and female students varied

significantly when it comes to the overall use of VLS. The finding is consistent with those of

previous studies which also found female participants have a higher frequency of strategy

use than their male counterparts (Jiménez Catalán, 2003; Gu, 2002; Kaylani, 1996; Oxford &

Erhman, 1989; Oxford and Green, 1995; Oxford & Nyikos, 1989). Two reasons could

illustrate the more frequent use of VLS by female students than by male students. First,

female students averagely scored higher than male students in EVPT in the current research.

As Cheng (2006) stated, Taiwanese junior high students with larger vocabulary size apply

more VLS in vocabulary learning. In the present study, female students averagely scored

higher than male students on EVPT; therefore, inferring from Cheng's results, the higher use

of overall strategy might be that female students had a bigger vocabulary size than male

students. Second, Oxford and Nyikos (1989) assumed that, in order to learn the language well, female students were more self-motivated in language learning, consequently out-performing on the frequency use of strategies than male students. Therefore, the results might suggest that female students in the present study utilized VLS significantly more frequently than male students because the former had a higher motivation in vocabulary learning than the latter.

Besides significant gender differences on overall strategy use, the results of strategy categories have suggested two important findings. Firstly, significant gender differences were found on three strategy categories, determination strategies, memory strategies and cognitive strategies. Secondly, male students did not significantly differ from female students in the other two categories: social strategies and metacognitive strategies. In the following subsections, the three categories with significances were discussed first, followed by the two categories without gender differences.

5.3.1.1 Strategy Categories with Gender Differences

When it comes to determination strategies, female students used the category more frequently than male students. The result might borrow support from Jiménez Catalán's (2003) findings that reported a greater use of discovery strategies by female students. In her study, the discovery category contained eight determination strategies, six of which were reported a higher percentage of strategy use by female students. Her findings seem to confirm the result in the present study. Therefore, it is reasonable to conclude that female

students tended to discover the meanings of unknown words more often than did male students.

As for memory strategies, the more frequent use of the category by female students is consistent with Jiménez Catalán's (2003) and Green and Oxford's (1995) findings. Jiménez Catalán explained in her study that the difference on memory strategies use between males and females might be due to different learning styles and strategy preferences. Also, after reviewing former studies, Nyikos (1990) concluded that "the use of multiple coding of materials" (p. 276) extends the retention of target words into long-term memory. Therefore, the more frequent application of many memory strategies might serve as an important factor in female's more success in vocabulary learning.

Moreover, female students also reported a more frequent use of cognitive strategies, which is supported by the findings of previous investigations (Kaylani, 1996; Erhman & Oxford, 1989; Green & Oxford, 1995; Oxford & Nyikos, 1989). The possible reasons for the significance might be that, on one hand, there are half strategies reported to be significantly different by genders. On the other hand, the category contains many rote learning strategies or the use of study aids, such as repetition strategies or note-taking, which are in favor of female students. Therefore, female students tended to apply cognitive strategies more frequently than did male students.

5.3.1.2 Strategy Categories without Gender Differences

Another valuable finding is that there were no gender differences on the use of social

strategies and metacognitive strategies. The result of the social strategies coincides with

Kaylani's (1996) findings. The possible reason for no differences on social strategies might

be that social status between boys and girls are not obviously different, which might be one

of the main reasons that cause gender differences in other contexts. Besides, most boys and

girls in Taiwan have received formal education in a coeducational environment since they

were still little. The ways they are treated and required in classrooms seem no particularly

different in light of gender, resulting with no salient gender-related differences in

interpersonal classroom interaction. Therefore, male and female students might not

significantly vary from each other when it comes to the application of overall social

strategies into their vocabulary learning.

In addition to social strategies, no gender differences were found in metacognitive

strategies, the result of which is in harmony with several prior investigations (Erhman &

Oxford, 1989; Green & Oxford, 1995; Kaylani, 1996; Oxford & Nyikos, 1989). As stated in

Section 5.1.2.5, metacognitive strategies concern students' awareness of learner

independence and learner initiatives which most junior high school students lack of. As a

result, male and female students did not differ in general when using metacognitive

strategies as a whole.

5.3.2 Gender Differences on Individual Strategy Use

This subsection discusses the sixteen individual strategies which were reported to have

gender differences on the strategy use: one determination strategy, one social strategy, eight

memory strategies, four cognitive strategies and two metacognitive strategies. These

strategies could be categorized into several parts according to similar features of them:

grouping related words, writing practice with study aids, auditory practice, and other

strategies, including studying and practicing meaning in a group, bilingualized dictionary,

using new word in sentences, and using physical action when learning a word.

5.3.2.1 Grouping Related Words

This part contains four strategies of grouping related words: connecting the word to its

synonym and antonyms, using scales for gradable adjectives, grouping words together to

study them and grouping words together spatially on a page. The result is similar to Jiménez

Catalán's (2003) findings that female report a more frequent use of grouping strategies.

Schmitt (1997) stated that "grouping is an important way to aid recall" (p. 213); in other

words, putting similar words together or excluding unrelated words might help learners

acquire vocabulary systematically. Vasijević (2010) also advocated that learning to associate

related words together may bring a longer benefit. As suggested in the two studies above,

female students might benefit from grouping related words in vocabulary learning more than

male students. However, this should also be treated in caution, as Nation (2008) warned, that

such grouping may cause interference in vocabulary learning as well because of similarities

between two words. Therefore, grouping strategies should be introduced with care after the

avoidance of intriguing words is informed.

5.3.2.2 Writing Practice with Study Aids

The part consists of five strategies, involving the use of study aids which require

learners to write repeatedly, make word lists, take notes in class, keep a vocabulary notebook

and test themselves with word lists. It is interesting to find that female students seemed to

have a more frequent use of strategies which are related to written form. Jiménez Catalán

(2003) also discovered a similar pattern that female students had a higher percentage of

strategy use related to writing tasks, such as taking notes or written repetition. Though males

tended to more like tactile style, according to Reid (1987), they do not seem to have a higher

interest in written practice or making study aids. The possible reason might be that male

students might not be patient enough to make study aids, especially those involving writing

practice. Boys, considered more dynamic-oriented than girls, might not have the patience for

completing study aids like these. Besides, as Schmitt (1997) stated, study aids are

personalized and offer extra exposure for review, which are meant to be helpful in

vocabulary learning. To conclude the suggestions from the studies above, male students in

the present study might not favor constant and self-initiated study as much as female

students.

5.3.2.3 Auditory Practice

This part includes two strategies: studying the sound of a word and saying new word

aloud when studying and listen to English songs. Jiménez Catalán (2003) found that female

students had a more frequent use of studying and articulating the sound of a word. As she

continued to explain, this could be due to different learning styles that male and female

students belong to. Whereas males are believed to be more like visual and tactile style,

females tend to be like auditory style; thus, female students in the present study tended to

have a more frequent use of strategies related to sound. Graham (1996) also suggested

teachers to ask their students to say new word aloud when studying, the way of which could

offer extra exposure of listening input. Besides classroom aural practice, female students also

listened to English songs more frequently than male students, consequently increasing

listening practice in their free time. From the findings above, it is necessary for teachers to

bear in mind that male students might need more practices with sound.

5.3.2.4 Study and Practice Meaning in a Group

As Oxford (1995) reported, female tended to be more cooperative learning style

whereas male students were more independent learners. When it comes to working with

others, it seems that female students have a higher tendency of doing so than do male

students. Besides the favor of practicing in groups, two studies also have found that females,

as feelers, tend to communicate for meanings more often (Erhman & Oxford, 1989) and use

practice strategies more often (Nyikos, 2008). After combining the findings in the present

study and two studies above, we might infer that female students are likely to practice the

meanings of new words through cooperative work.

Even though female might gain vocabulary positively from cooperating learning,

DaSilva Iddings (2006) still warned that successful cooperation does not always occur in all

occasions. In other words, teachers should take possible situations into consideration when

they encourage either male or female students to apply such a cooperative learning strategy.

5.3.2.5 Bilingualized Dictionary and Use New Word in Sentences

As discussed earlier in Section 5.2.1, female students seemed to prefer dictionary use. A

bilingualized dictionary offers not just Chinese translation but English illustration, both of

which show the meanings of the unknown words. As reported in Nyikos's (1990) research,

females put an emphasis on knowing the meanings of the words. Thus, female students could

get the complete meanings more easily through L1 translation and L2 explanation at the

same time when using a bilingualized dictionary. In addition to meaning-focused inquiry,

each entry in the dictionary also offers example sentences, which help learners instantly

understand the usage of the target word. With higher frequencies of looking up in the

dictionaries, female students might benefit more than male students from the by-product of

learning proper usage of the word, consequently resulting with a more frequent use of

putting the word into a sentence.

5.3.2.6 Use Physical Action When Learning a Word

The results have shown that females used physical action when learning a word

significantly more often than males; however, the mean scores of the strategy implied that

both male and female students seldom used the strategy. According to students' response, it

is ineffective and time-consuming to think of physical actions to represent a word. Besides,

the strategy is not applicable to every new word and might cause trouble in distinguishing

the connection between the actions and the words.

5.4 Vocabulary Strategy Use, Gender Differences and Vocabulary Level

This section aims to reply Research Question 4: Will learners' vocabulary proficiency relate to the choices of vocabulary learning strategies between genders? To examine how gender differences affect the use of VLS in each vocabulary level, independent-sample t-Test was applied. Unlike the greater variations by vocabulary proficiency or by gender, the results have not shown lots of gender differences on strategy use in each of the three vocabulary scoring levels. The results are similar to Green and Oxford's (1995) findings that the strategies with significant level differences are not likely to have much overlapping with the strategies with significant gender differences. The results have displayed that significant gender differences were only found in L-S on overall strategy use and in I-S and L-S on cognitive strategies. As for individual strategies, only seventeen strategies contained significant gender differences in at least one vocabulary level. Provided with the results, the discussion will be put from two aspects: gender differences on (1) overall strategy and cognitive strategies, and (2) seventeen individual strategies in terms of vocabulary level.

5.4.1 Overall Strategy Use and Cognitive Strategy Use

As the results have shown, significance was only found in L-S when it comes to overall strategy use. This means that female students in L-S seemed to use more strategies than their male peers in general. Also, whereas female students in L-S could be considered as moderate users of overall strategies, male students in L-S did not seem to apply them very frequently.

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As for cognitive strategies, gender differences were found in I-S and L-S. The result indicates that, except students in H-S, female students tended to have a more frequent use of cognitive strategies than their male peers.

5.4.2 Seventeen Individual Strategies

In each vocabulary level, the frequencies of individual strategy use by male and female students were compared. According to the findings, the discussion below will be divided into three parts, including (1) gender differences in each vocabulary level, (2) strategies reported at a higher significant level ($p < .005$), and (3) strategies that male students applied significantly more often than female students.

5.4.2.1 Gender Differences in Each Vocabulary Level

As the results in Section 4.4.2 have displayed, significances in at least one vocabulary level were found in seventeen strategies. Among them, seven strategies were reported with significances in H-S, six strategies in I-S and seven strategies in L-S. To conclude the results here and those in Section 4.3.2, four important inferences could be reasonably made. First, gender differences in grouping related words together primarily took place in L-S, which differed significantly between genders in two strategies. Secondly, writing practice with study aids showed significances by genders in the three vocabulary levels, all of which had gender differences in two strategies. Moreover, all the three vocabulary levels reported gender differences in auditory practice. H-S reported with significances in two strategies, I-S in two strategies, and L-S in one strategy. Fourthly, while male and female students in H-S

were significantly different in studying and practicing meanings in groups, those in I-S

showed gender differences in using bilingualized dictionary and those in L-S differed by

gender on the strategy, using physical action when learning a word.

5.4.2.2 Strategies with a Higher Significant Level

Among the seventeen strategies with significant gender differences, it deserves to note

that four strategies were found to contain gender differences at a higher significant level

($p < .005$). First, one of the four strategies fell on the use of saying new word aloud when

studying by students in H-S. In using the strategy, the mean difference between male and

female students in H-S is 0.93. The higher significant level could also be seen from the result

that female students in H-S were frequent users and their male counterparts were only

moderate users of the strategy. The result could be confirmed by their attitudes toward the

effectiveness of the strategy. Whereas more female students regarded the strategy as the most

effective one, one male student thinks in the opposite way. The possible reason that more

advanced female students tended to say the word loud when learning might be well

illustrated by one of their responses:

"*When I learn a word, saying it loud not only helps memorize the word but also*

makes it easier to spell the word correctly" (C3S9).

Therefore, gender differences on the strategy are likely to take place when the students

are more advanced.

Besides, another strategy, word lists, used by students in I-S reported gender differences

with a higher significant level (p < .005), too. The mean difference between both genders, 0.81, indicates that female students in I-S not only had a higher application of the individualized and structured study aids but also favored the portability of word lists according to their responses.

As for the other two strategies, written repetition and listening to English songs, both of them were found with a higher significant level (p < .005) of gender differences in L-S. In written repetition, female students used it more frequently than male students by a mean difference at 1.35. The mean scores of both groups showed that female students wrote a word many times in a quite frequent way whereas male students only sometimes did so. The result is confirmed by the findings in Section 5.3.2 that the use of strategies related to writing practice is in favor of female students, especially to those underachievers as it could be inferred here.

In addition to written repetition, variations by gender on the use of listening to English songs are quite salient because the mean difference is as high as 1.20. One of the possible reasons is that female students might be more auditory while male students more visual. Another reason could be that, although the melody might be attractive, lyrics in English songs are sung so fast that male students in L-S expressed to be beyond their comprehension. To sum up, gender might be an important variable on written repetition or listening to English songs among poorer learners.

5.4.2.3 Strategies in Favor of Male Students

Among the seventeen strategies, female students generally had a more frequent application of these strategies than male students, except three strategies, analysing affixes and roots, imaging words meaning and listening to English broadcast. Further discussions about the three strategies are presented as follows.

First, male students in I-S reported more frequent application of the strategy, analyzing affixes and roots, which was the third most preferred determination strategy by male students. One of the possible reasons is that men tend to favor analytic strategies (Oxford, 1995, cited in Osanai, 2000). For example, male students are likely to divide a word into several units through the analysis of affixes or roots, which might help construct the meaning of the word. Also, as Nation (1990) argued, the use of word parts, like affixes or roots, is one of the key strategies for students to become independent learners. This suggests that male students in I-S, compared with their female peers, tended to take more advantages of affixes and roots and used them quite frequently to know a word's meaning.

Second, it is interesting to discover that male students in H-S not just had a more frequent use of imaging word's meaning, but also sometimes used the strategy to memorize the word. As stated earlier that men tend to be more visual, they might favor strategies related to the use of pictures or images. Once when they are in short of realia, they might tend to form a mental image according to what they have in mind; thus, offered with the meaning, it is possible for male students to draw an image in order to lengthen the retention

of the word. According to Schmitt (1997), this kind of deep processing strategies involves more sophisticatedly cognitive efforts, the value of which might be appreciated by more mature or more advanced learners. Therefore, it is reasonable that the differences occur in H-Ss, instead of the other two lower levels.

Third, it is noteworthy that male students in H-S reported a higher use of listening to English broadcast. The result here could be confirmed by Bacon's (1992) report that men tended to listen to authentic texts more often than women. Therefore, authentic texts from English broadcast might be in favor of male students in the present study. Gender differences only occur in H-S probably due to a possible reason: Students in the other two groups might not be capable of understanding the contents in English broadcast, resulting with no significances on the strategy used by both genders. According to Bacon, she continued to state that the more difficult the authentic texts are, the more interested men tend to become. Therefore, English broadcast is hard enough that gender differences might occur, especially in H-S.

5.5 Students' Reflection on Strategy Use

According to the students' responses to open-ended questions in the VLSQ, this section aims to answer Research Question 5: What are students' difficulties in vocabulary learning and reasons for using vocabulary learning strategies in a gender perspective? Section 5.5.1 discusses the difficulties that students encounter when learning English vocabulary. The next sub-section discusses the five most and least effective strategies from male and female

students' viewpoints along with some possible reasons. Section 5.5.3 discusses the strategies found by the participants themselves. The last sub-section discusses students' needs for teachers' help in learning vocabulary.

5.5.1 Difficulties in Learning English Vocabulary

Based on the results in Table 4.22, the discussion would focus on four aspects of difficulty, including meanings, pronunciation, spelling and part of speech. Firstly, the findings have shown that meanings of vocabulary were complicated to 40 % male students and to almost one-third female participants. To them, matching the meanings with the words correctly is always challenging and confusing. Two factors that might cause difficulty in learning meanings of words are concreteness and frequency of the meanings. As de Groot (2006) stated, difficulty of lexicons lies on the concreteness of their meanings. In other words, learners might excel better and more easily on words with concrete images than those with abstract concepts. Besides concreteness, a word with various meanings causes confusion to learners as well. According to Schmitt (2010a), language learners "typically acquire the most frequency meaning senses before less frequent ones" (p.54). That is, participants easily ignore meanings that appear less often in the texts. After learning multiple meanings of a word, learners easily fail to remember some of the meanings, especially those abstract ones or those of lower frequency.

Secondly, male and female students both believed pronunciation is one of the major difficulties in learning vocabulary. According to Laufer (1997), difficulty of learning a new

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word is influenced by "facilitating factors" or "difficulty-inducing factors" (p. 154). Among them, what makes a difference is due to either the relationship between a word and others in the target language or the morphological or phonetic similarity/ dissimilarity between L1 and L2. Over 36% of female participants and 32% male students in the study regard pronunciation one of the difficult factors in learning vocabulary. What makes pronunciation hard to both groups could be phonetic dissimilarity between Chinese and English.

Thirdly, in addition to meanings and pronunciation of new words, a similar percentage of male and female students believed spelling to cause difficulty in learning vocabulary, especially those with more letters. Cook (2008) and Schmitt (1997) both suggested that the deduction of a long word based on its affix or root is a helpful strategy in learning the word. Provided with the results in the study that two strategies concerning affixes and roots only belong to medium use by male and female students, Cook's and Schmitt's statements might encourage male and female students to apply the strategies more often in order to reduce the difficulty in vocabulary spelling.

Moreover, other factors of difficulty were part of speech and usage, which were regarded as the fourth and the fifth difficult in vocabulary learning by both male and female participants. The finding seems to be concurrent to Laufer's (1997) conclusion that the effect of part of speech is not obvious on the difficulty of a lexical item. In addition, junior high students are usually trained to articulate the sound of a word in class, to write the correct spelling in quizzes or to recognize the meaning of a word in multiple choice questions during

entrance exam, all of which put little emphasis on the usage of a word. Therefore, male and female students may not regard usage as the hardest aspect in vocabulary learning.

5.5.2 Effectiveness of Vocabulary Learning Strategies

As for the effectiveness of VLS, the five most effective strategies by both genders will be discussed first, followed by the five least effective strategies. On one hand, both male and female students regarded verbal repetition the most effective strategy, followed by listening to English songs. Besides, the other three most effective strategies by both groups are the same but in a different order, including studying the spelling of a word, studying the sound of a word, and written repetition. It is easy to note that the five strategies are related either to the sound or to the spelling of a word. While the studying of spelling and sound is of great importance, male and female prefer rote learning better, such as verbal or written repetition. The finding could also be confirmed by the results presented in Section 4.2.2 that these strategies are frequently employed by both male and female students. According to both genders, it is helpful, efficient and easy to apply verbal repetition and written repetition.

On the other hand, three of the least effective strategies are shared by both genders, including configuration, reading English novels and using keyword method. The possible reasons for the former two strategies might be the unfamiliarity of configuration or the overwhelmingly difficult content in English novels. Another strategy, Keyword Method, deserve more discussion because it has been not only one of most discussed vocabulary learning strategies but gained lots of positive supports in literature. In using Keyword

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Method, male students did not consider it common to match Chinese sounds with English words; nevertheless, female students thought Chinese sounds might blur the real pronunciation of the English words, probably causing incorrect spellings. The finding that the strategy is one of the least effective strategies might echo with the results reported in Section 4.2.: the Keyword Method is seldom used by male and female students. As Ellis and Beaton's (1995) suggested, it is not always possible to use the Keyword Method in all cases. They continued to claim that the Keyword Method is useful when an image of the keyword is possibly and successfully created in learners' minds, or when L1 and L2 are similar phonologically and orthographically. In other words, male students regarded the Keyword Method as the least effective because they might have trouble imagining a clear picture between Chinese and English. As for female students, they might succeed in finding out phonological likeness between Chinese and English, but they still failed to remember the word correctly due to their orthographical divergence. Besides, according to Vinjia (2009), sufficient trainings are necessary to make good use of the Keyword Method, consequently keeping a long-term retention. Therefore, to encourage a more frequent use of the strategy, both male and female students might need more training of the Keyword Method.

5.5.3 Vocabulary Learning Strategies Found by Students

Regarding the VLS found by the participants themselves, the results showed that fifty strategies were discovered by the participants. Of the fifty strategies, most were reported by less than five participants, except the top five. Of the top five strategies, two were shared by

the both groups: listening to English songs and verbal repetition. It is interesting to note that the two strategies were reported to be frequently used and to be the most effective by both male and female students. The use of listening to English songs by both genders approximated high use, while the use of verbal repetition belonged to high use. Besides frequency use of these two strategies, almost one-third male and female students believed them to be two most effective strategies. To conclude from the results, it is reasonable to infer that strategies found by the participant themselves might be more frequently used due to the effectiveness of the strategies.

As for the other three strategies, apart from one strategy by male students, most strategies contained similar features with the two strategies discussed in the previous paragraph: effective and frequently used. However, it deserves more attention that male students found the strategy, imaging word form, by themselves but they thought it one of the least effective strategies and seldom used it because it was impractical and time-consuming to use the strategy according to students' response.

5.5.4 Needs for Teachers' Assistance

When it comes to the needs for teachers' help in vocabulary acquisition, male and female students share four similar viewpoints and two different perspectives. The four similar needs shared by both genders are instruction on more relating vocabulary, the application of English songs in class, pronunciation practice, and teacher's explanation. First of all, both male and female students, especially those of higher vocabulary proficiency,

hoped that teachers could offer more relating vocabulary, synonyms or antonyms in order to

enlarge their word bank. The finding indicates that teacher's direct instruction or illustration

on new vocabulary is helpful and necessary for students. According to Schmitt's (2010b)

suggestion, teachers should "provide their students with plenty of vocabulary to learn and to

use right from the beginning" (p. 40). That is, junior high school students, who are beginners

of vocabulary learning in their entire lives, would broaden their vocabulary size with

teachers' direct instruction in vocabulary teaching.

Secondly, besides the extension of word bank, both male and female students prefer

more frequent employment of English songs into classroom activities, thus promoting their

learning motivation and enriching their vocabulary learning. The need is also consistent with

the results in the study that both male and female students used a metacognitive strategy,

listening to English songs, very often. According to the participants, English songs with

beautiful melodies could arouse their interest in knowing what the lines mean, therefore

resulting that they tended to consult unknown English words more actively.

In addition to two needs talked above, both genders thought pronunciation practice and

teachers' explanation, either in English or in Chinese, as helpful teaching activities. Their

need for these two could be inferred from their reported difficulty in vocabulary learning:

pronunciation and meaning. To decrease the difficulty of vocabulary learning, they directly

seek teachers for help in common classroom activities.

Nevertheless, male students expected teachers' help differently from female students,

particularly assistances which involve classroom activities. For instance, boys hoped

teachers to utilize more interesting classroom activities, including playing English movies,

playing dynamic games or employing visual aids. The finding is consistent with that of Jones

and Jones' (2000) research in UK that boys prefer an exciting language class when learning a

foreign language (cited in Palchler et al., 2009). As for their female peers, academic practice

is preferred, such as analyzing part of speech or taking vocabulary tests. This might also be

supported by Oxford and Nyikos's (1989) explanation that female students use more study

strategies and are more motivated than male students in language learning, aiming to get

better grades on tests.
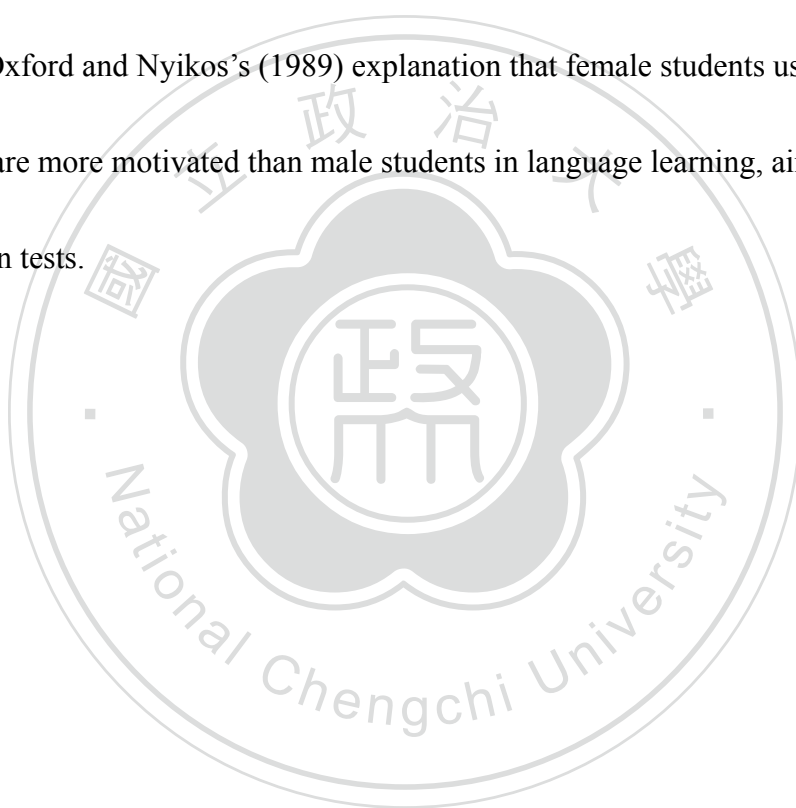
CHAPTER SIX

CONCLUSION

This chapter contains four sections. Section 6.1 summarizes the major findings of the

current study. The next section presents the pedagogical implications for in-service teachers.

Section 6.3 shows the limitations of the research and some suggestions for further studies.

6.1 Summary of the Major Findings

As stated in the earlier chapters, several important and worth-noting results were found

in terms of the effect of vocabulary level variations and gender differences on the use of

vocabulary learning strategies (VLS) by junior high school students. The main findings are

summarized in concise as follows.

First, vocabulary level differences were found in the use of overall strategies and most

strategy categories: determination strategies, social strategies, memory strategies and

meta-cognitive strategies, except cognitive strategies. The findings are in accordance with

Wang's (2004) students in Taipei. The results showed a tendency of higher strategy use by

students of higher vocabulary proficiency. In other words, the larger vocabulary size the

learners have, the more frequently they tend to apply VLS. As for individual strategies, there

were a great amount of strategies that reported vocabulary level variations on strategy use.

The use of over half individual strategies (53.33%) differed when they were examined by

taking vocabulary proficiency into consideration. It deserves more attention that greater

vocabulary level variations on strategy choice fell between two extreme groups: the

High-Scoring level (H-S) and the Low-Scoring level (L-S), the latter of which showed a less

application of individual strategies. Most of these strategies include the use of dictionary use

with English explanation, the analysis of lexical knowledge, the elicitation and practice with

others, the categorization of related words, and the independent learning by using English

media.

Secondly, as the mean scores of frequencies indicated, male and female students in the

present study could be regarded as moderate users of overall strategies. The result is

consistent with Cheng's (2006) that junior high school students only use VLS moderately in

general. As for the strategy categories, determination strategies, cognitive strategies and

memory strategies were applied moderately, while social strategies and metacognitive

strategies were consulted with a low frequency. When it comes to the preferences of strategy

use, the results showed very small difference if the rank order of the most and least

frequently used strategy categories or individual strategies in each category is taken into

account. From the discussion in the previous chapter, there seemed to be more similarity

than differences, which corroborates with Jiménez Catalán's, (2003) findings. Both male and

female students favored determination strategies the most, followed by cognitive strategies,

memory strategies, social strategies and meta-cognitive strategies. As for individual

strategies in each category, the most two and least two frequently used strategies by both

gender are alike only with a minor difference on the rank order of other strategies in the

same category. On one hand, the two most used ones from each category belonged to the

high use; in other words, both genders applied the ten strategies quite frequently. On the

other hand, the two least used strategies from each category only belonged to the low use;

that is, not only male students but female students had low preference on these ten strategies.

In contrast to strategies with high frequency use, the possible reasons for the low use of these

strategies might be due to the lack of familiarity, in short of the access to English native

speakers, ineffectiveness of strategy use, or the difficult contents in dictionary use or in

English media.

In addition, after comparing the mean scores of strategy use by male and female

students, the t-Test results displayed that differences on strategy use occurred in terms of

gender. Consistent with the findings in prior research (Jiménez Catalán, 2003; Gu, 2002;

Kaylani, 1996; Oxford & Erhman, 1989; Oxford and Green, 1995; Oxford & Nyikos, 1989),

female students reported a more frequent use of overall strategy than their male peers. As for

the five strategy categories, three categories were found to contain gender variations:

determination strategies, memory strategies and cognitive strategies, all of which implied

higher uses by female students than male in a significant way. Several conceivable reasons

could be girls' better performance on English Vocabulary Proficiency Test (EVPT), female's

higher motivation toward language learning (Jiménez Catalán, 2003; Oxford & Nyikos,

1989), and different learning styles which male and female students tend to belong to. With

the regard to individual strategies, a total of sixteen reported to have gender differences.

Similarly, the mean scores of these strategies indicated female students, as they did on

overall strategy, had a more frequent use of these strategies. What strategies gender differences might have effects on concern grouping related words, writing practice with study aids, auditory practice, and other strategies, such as studying and practicing meanings with others, the use of bilingualized dictionary, listening to English songs and the use of physical actions.

Fourthly, to examine how male and female students differ from each other on the choice of VLS in terms of vocabulary proficiency, only students in L-S reported gender differences in overall strategy use, indicating that female students in L-S significantly had a more frequent use than their male peers. As for strategy categories, only cognitive strategies were found to contain gender differences in the Intermediate-Scoring level (I-S) and L-S; similarly, female students in the two groups again used cognitive strategies significantly more often than their male counterparts. Regarding individual strategies, gender differences were found in seventeen strategies in at least one vocabulary level. Three main findings were concluded as follows. First, the three vocabulary levels all showed gender differences in strategies concerning auditory practice or writing practice with study aids. Different by vocabulary levels, H-S reported gender differences in studying and practicing meanings in groups, whereas I-S found significances in using bilingualized dictionary and L-S differed in the use of grouping related words together by genders. Second, a higher significant level of gender differences were found in the use of saying new word aloud when studying by H-S, word lists by I-S, and written repetition and listen to English songs by L-S. Thirdly, the results

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have shown that three strategies were in favor of male students. Male students in I-S

analyzed affixes and roots significantly more frequently than their female peers. As for the

other two strategies, image word's meaning and listening to English broadcast were in favor

of male students in H-S, indicating that female students of the advanced level tend to use the

two strategies significantly less often.

Last, according to students' responses, the results could be divided into three parts. First,

both male and female students regarded pronunciation, meanings, spelling, part of speech,

usage of words as the difficulties in learning vocabulary. Whereas male students think

meanings the most difficult aspect, female students believed pronunciation to be the hardest

part. Second, both genders thought the same strategies as the five most effective strategies.

To them, verbal repetition is the most effective strategy and listening to English songs is the

second one. As for the least effective strategies, male and female students had slightly

different beliefs that the former regarded reading English novels and configuration the top

least effective strategies and the latter viewed configuration and English-English dictionary

the top least ones. Thirdly, both male and female students need teacher's assistance on the

extension of relating vocabulary, the employment of English songs, the pronunciation

practice and detailed explanation on new words. With a small difference, male students

preferred more dynamic teaching activities, such as vocabulary games, while female students

favored academic practice, like vocabulary quizzes.

6.2 Pedagogical Implications

This section presents the pedagogical implications of the current study for EFL teachers in Taiwan. From the implications below, teachers might help their students learn vocabulary better with the help of VLS.

First, teachers should introduce various VLS to junior high school students, especially to those of lower levels. According to the findings in the present study, students in H-S reported a more frequent use than the other two groups, particularly those in L-S. This indicates that the more frequently students apply VLS, the better they might acquire vocabulary. Also, it is important to enhance students' awareness of VLS which could facilitate students' vocabulary learning to consciously select available and suitable strategies. According to Cohen (1998), "the most efficient way for learner awareness to be heightened is by having teachers provide strategies-based instruction to students as a part of the foreign language curriculum" (p. 7). Therefore, teachers should not only introduce a number of VLS but also help increase learner awareness of VLS use.

Secondly, teachers should take gender differences into account when carrying a strategies-based instruction. As the results have shown, female students had a more frequent application of overall strategies, determination strategies, memory strategies, cognitive strategies, and sixteen individual strategies. Combined with the responses in open-ended questions, teachers should encourage male students to use VLS more often, especially those they believed to be effective strategies but used less often than female students, in order to

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enhance male students' vocabulary learning outcome. However, though teachers should take

male students' need for application of visual aids into consideration when designing

strategies-based instruction, Pachler et al. (2009) remind teachers should employ the

instruction strategy with caution only when two circumstances are met: applying a suitable

amount of visual aids and maintaining a class in a good order.

Thirdly, teachers should guide students in using VLS effectively based on both

vocabulary level differences and gender differences. Provided that the choices of VLS might

differ by levels and by genders, students in different levels might also show different types

of gender differences from those by the whole students examined together. For instance,

male students as a whole generally had a lower frequency use of strategies than female

students; nevertheless, male students in H-S listened to English broadcast more often than

female students. In other words, gender differences may also differ when taking vocabulary

level into consideration. Therefore, when employing strategies-based instruction into

classroom, teacher should bear in mind that it could be important for teachers to be aware of

students' preferences of VLS use by levels and genders.

6.3 Limitations of the Present Study and Suggestions for Further Research

This section displays limitations of the current study, followed by suggestions for

further research.

Though the present study has found differences on VLS use by junior high school

students in terms of vocabulary level and gender, there are still some limitations in the

research. First of all, the results may not be over-generalized into all teaching circumstances in Taipei City because the research was only a case study with participants chosen from a single school. To be more representative, further research should include more participants from various schools in Taipei City.

Secondly, the numbers of students in three vocabulary levels or in both genders are not exactly the same, probably causing slight differences on the results. To collect a truer result, further investigators had better take the number in each group, either vocabulary levels or genders, into consideration.

Thirdly, the data in this study was collected only through a questionnaire, VLSQ. Although it is convenient to gather a great deal of statistical information through questionnaires, the 5-scale rating might not truly show the reality. Due the disadvantage of questionnaires, Chamot (2004) also suggests interviews or diaries should also be included, serving as another tools to elicit students' strategy use. Therefore, for the following investigators or teachers, more research instruments on gathering data of strategy use should be included as well.

Lastly, the present study investigates the use of VLS by taking only two variables, vocabulary levels and gender, into consideration. What might influence strategy use, according to Oxford (1990), are age, motivation, culture, learning styles, and so on. Therefore, to research on gender differences on the use of VLS, further studies should examine on how the other variables relate to gender on the choice of strategy use.

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Schmitt's Taxonomy of Vocabulary Learning Strategies (1997, p. 207-208)

Strategy Categories	Individual Strategies
Strategies for the discovery of a new word's meaning	
Determination strategies	Analyze part of speech
	Analyze affixes and roots
	Check for L1 cognate
	Analyze any available pictures or gestures
	Guess from textual context
	Bilingual dictionary
	Monolingual dictionary
	Word lists
	Flash cards
Social Strategies	Ask teacher for L1 translation
	Ask teacher for paraphrase or synonym of the new word
	Ask teacher for a sentence including the new word
	Ask classmates for meaning
	Discover new meaning through group work activity
Strategies for consolidating a word once it has been encountered	
	Study and practice meaning in a group
	Teacher checks students' flash cards or word lists for accuracy
	Interact with native-speakers
Memory Strategies	Study word with a pictorial representation of its meaning
	Image word's meaning
	Connect word to a personal experience
	Associate the word with its coordinates
	Connect the word to its synonyms and antonyms
	Use semantic maps
	Use 'scales' for gradable adjectives
	Peg Method
	Loci Method
	Group words together to study them
	Group words together spatially on a page
	Use new word in sentences

Schmitt's Taxonomy of Vocabulary Learning Strategies (1997, p. 207-208) (Continued)

Strategy Categories	Individual Strategies
Memory Strategies	Group words together within a storyline
	Study the spelling of a word
	Study the sound of a word
	Say new word aloud when studying
	Image word form
	Underline initial letter of the word
	Configuration
	Use Keyword Method
	Affixes and roots (remembering)
	Part of speech (remembering)
	Paraphrase the word's meaning
	Use cognates in study
	Learn the words of an idiom together
	Use physical action when learning a word
	Use semantic feature grids
Cognitive Strategies	Verbal repetition
	Written repetition
	Word lists
	Flash cards
	Take notes in class
	Use the vocabulary section in your textbook
	Listen to tape of word lists
	Put English labels on physical objects
	Keep a vocabulary notebook
Meta-cognitive Strategies	Use English-language media (songs, movies, newscast, etc.)
	Testing oneself with word tests
	Use spaced word practice
	Skip or pass new word
	Continue to study word over time

APPENDIX B

Vocabulary Learning Strategy Questionnaire
國中生英語字彙學習策略問卷

各位同學，你(妳)好：

　　這是一份單字策略使用的問卷，其目的在調查台北市國中生，經常使用哪些策略來學習英語單字，以作為日後教師在教學上的參考。

　　你(妳)的作答將對本研究有相當大的意義及幫助。此外，本份問卷裡所有的資訊、數據及調查結果，將僅供學術研究使用，絕對會受保密且不公開，所以請你(妳)放心地填寫。

　　為了使本研究順利發展，並得到的客觀結果，請你(妳)**仔細閱讀問卷內容，並誠實地作答**。請根據你(妳)平常學習單字的實際方式，選出最符合自己學習狀況的選項。本份問卷並非考試，無標準答案，請你(妳)**勿考慮理想答案**或**以他人期待的結果作答**。

　　非常感謝你(妳)願意抽空填寫問卷，謝謝你(妳)的協助。

<div style="text-align:right">

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一、個人基本資料 (僅作研究參考)

1. 性別：□ 男生　　　□ 女生

2. 年齡：＿＿＿＿＿歲

3. 是否曾經在**英語系國家**居住或就讀？□ 是；約＿＿＿年　　　　□ 否

4. 大約學英語學了多久？　　□２年以下(國中才學)　　　　□４年以下(小五開始學)
□６年以下(小三開始學)　　　□８年以下(小一開始學)　□ 超過８年(約＿＿＿＿年)

5. 現在平均**一星期**花多少時間學習(練習)英文單字？(上課時間除外)
□１小時以下　　□３小時以下　　　　□５小時以下　　□７小時以下
□７小時以上 (約＿＿＿＿小時)

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二、英語單字的學習策略

(請務必要誠實、仔細地作答，小心可不要漏掉任何一題喔！)

英語單字的學習策略	總是使用	常常使用	偶爾使用	很少使用	從未使用
1. 分析詞性(如名詞、動詞、形容詞...等)來推測生字的意思。 例如：decorate(裝飾)是動詞；decoration(裝飾)則為名詞。	5	4	3	2	1
2. 分析字根、字首、字尾來推測單字的意思。 例如：不懂 preschool，可從字首 pre-(先；前)和字根 school(學校)，推論學前教育的大概意思。	5	4	3	2	1
3. 從圖片或手勢來推測生字的意思。例如：看到 No crossing 和禁止穿越地標誌時，可從圖片推出 crossing 是穿越的意思。	5	4	3	2	1
4. 從上下文的內容中推測生字的意思。例如：讀文章時，遇到不懂的單字，從前後文裡，推測、猜想單字可能的意思。	5	4	3	2	1
5. 使用英漢字典來查生字的意思。(字典裡的單字只有中文解釋)	5	4	3	2	1
6. 使用英英字典來查生字的意思。(字典裡的單字只有英文解釋)	5	4	3	2	1
7. 使用英英、英漢雙解字典來查生字的意思。 (字典裡的單字有英文解釋和中文解釋)	5	4	3	2	1
8. 使用電子字典來查生字的意思。 例如：用無敵 CD 或快譯通來查單字解釋。	5	4	3	2	1
9. 使用網路線上字典來查生字的意思。 例如：用 yahoo 的線上字典查單字解釋。	5	4	3	2	1
10. 請老師提供生字的中文翻譯。	5	4	3	2	1
11. 請老師重新用英文解釋生字的意思。	5	4	3	2	1
12. 請老師提供生字的同義字。例如：請老師提供 great 的同義字。	5	4	3	2	1
13. 請老師造出包含生字的例句。	5	4	3	2	1
14. 請問同學生字的中文意思。	5	4	3	2	1
15. 透過和同學的互動或活動，推測生字的意思。	5	4	3	2	1
16. 請教家人(父母或兄弟姐妹)生字的意思。	5	4	3	2	1
17. 跟同學們一起研讀或練習生字意思。 例如：同學口頭上互相抽問某個單字的英文。	5	4	3	2	1
18. 請老師訂正我自己做的字卡或生字表。	5	4	3	2	1
19. 和英語為母語的外國人互動來學習單字。	5	4	3	2	1
20. 和家人(父母或兄弟姐妹)一起練習生字。	5	4	3	2	1

	英語單字的學習策略	總是使用	常常使用	偶爾使用	很少使用	從未使用
21.	把單字的意思和**實際圖畫**相結合來記住單字。 例如：學 sunflower 時，就跟向日葵的圖片相連結。	5	4	3	2	1
22.	心裡**想像**單字的**畫面**來幫助記憶。 例如：學 giant(巨人)時，心中就想像一個很高很高的人。	5	4	3	2	1
23.	將單字與個人以前的**生活經驗**結合。 例如：學 typhoon 的時候，就跟莫拉克颱風和所造成的 88 水災連結在一起。	5	4	3	2	1
24.	將單字跟其他**同類或相關的單字**一起聯想，幫助記憶。 例如：把 purple 和其他顏色的 white、pink 聯想在一起。	5	4	3	2	1
25.	結合單字的**同義字和反義字**。 例如：學 joyful 的時候，連結同義字 happy，反義字 sad。	5	4	3	2	1
26.	將**形容詞分等級**來幫助學習單字。 例如：把 better 的形容詞三級(good, better, best)一起做練習。	5	4	3	2	1
27.	將**單字分類**，以方便學單字。 例如：把球類的單字分成同一組練習，把水果類的單字分成同一組練習。	5	4	3	2	1
28.	把單字**分類並寫在同一張紙**上。 例如：把單字分類球類、蔬果類、月份等，並將同類寫在同一張紙上，方便一起練習。	5	4	3	2	1
29.	我會造出**包含生字的例句**。 例如：會造出 I ride a bicycle to school.的句子來學 bicycle。	5	4	3	2	1
30.	串連幾個單字，編出一個**故事**或**情節**來幫助記憶。 例如:學 prince(王子) 和 princess(公主)時，就編出 The prince lived happily with the princess.的圓滿情節。	5	4	3	2	1
31.	研讀單字的**拼法**。例如：dangerous，為 d-a-n-g-e-r-o-u-s。	5	4	3	2	1
32.	研讀單字的**發音**。例如：分辨 paper 和 pepper 發音的不同，來幫助記憶。	5	4	3	2	1
33.	練習單字時，**大聲地唸出來**。	5	4	3	2	1
34.	把單字看成一個**圖畫**來幫助記憶。例如：學 cup 時，就把它看成 C ⊍	5	4	3	2	1
35.	在單字第一個字母底下**劃線**或**做記號**。	5	4	3	2	1

英語單字的學習策略	總是使用	常常使用	偶爾使用	很少使用	從未使用
36. 將單字的高低起伏劃線,強調單字拼法。例如：earthquake 。	5	4	3	2	1
37. 用**中文的諧音**來記住英文單字。 例如：soon 念起來像中文『順』,進行很順的東西,相對地,『很快地』就能完成了,所以 soon 就是很快地。	5	4	3	2	1
38. 運用**字根、字首、字尾**來記住單字。 例如：review(複習),字首 re-是再一次的意思,字根 view 是看的意思,再看一次,就是複習的意思。	5	4	3	2	1
39. 記住單字的詞性。例如：記住 carry 是動詞,riverside 是名詞。	5	4	3	2	1
40. 用自己的話**重新解釋**單字的意思。 例如：學 mask(面具)時,自己解釋成 something you put on your face。	5	4	3	2	1
41. 用整個**片語**來學習單字。 例如：學 past 時,就以 in the past 來一起記。	5	4	3	2	1
42. 靠**肢體動作**來學習單字。例如：學 knock(敲)時,就用手敲敲桌子,發出的聲音就像 knock 的音,以此來練習。	5	4	3	2	1
43. 重複一直**唸**來學習單字。	5	4	3	2	1
44. 重覆一直**寫**來學習單字。	5	4	3	2	1
45. 製作**單字表**來學習單字。	5	4	3	2	1
46. 上課時**寫筆記**來學習單字。 例如：將老師所補充的單字寫在課本、講義或筆記本上。	5	4	3	2	1
47. 使用**教科書**上每單元的**生字表**來學習生字。 例如：利用每單元對話下的生字彙整,或課本後的每單元生字整理。	5	4	3	2	1
48. 聽 **CD 中的單字朗讀**來學習單字。	5	4	3	2	1
49. 在實際物品上,貼**英文標示**。例如：在書桌上,貼上寫有 desk 的標籤。	5	4	3	2	1
50. 製作一本可隨身攜帶的**單字筆記本**來練習生字。	5	4	3	2	1
51. 看**英文電影**或影集來學習單字。	5	4	3	2	1
52. 看**英文雜誌**來學習單字。 例如：平常看大家說英語或空中美語文摘來學單字。	5	4	3	2	1

英語單字的學習策略	總是使用	常常使用	偶爾使用	很少使用	從未使用
53. 看**英文小說**來學習單字。 例如：讀哈利波特或波西傑克森的原著小說來學單字。	5	4	3	2	1
54. 看**英文報紙**來學習單字。 例如：讀 Taipei Times 或 Student Post(週日郵報)來學單字。	5	4	3	2	1
55. 聽**英文歌曲**來學習單字。	5	4	3	2	1
56. 聽**英文廣播節目**來學習單字。例如：聽 ICRT 或 BBC 學單字。	5	4	3	2	1
57. 看**英文新聞**來學習單字。例如：看民視英文新聞或 CNN 學單字。	5	4	3	2	1
58. 自製**單字測驗**來做自我評量。	5	4	3	2	1
59. 看到不懂的生字時，先**略過**或**跳過**。	5	4	3	2	1
60. 一段時間後，便會複習學過的單字。 例如：學完單字後，每隔幾天或一週會再復習一次。	5	4	3	2	1

三、單字學習策略相關問題

1. 學習單字時，你(妳)覺得**最困難的部份**是什麼？(如發音、拼字、意思…等)

   _____

2. 上述的 60 個單字策略中，哪一個是你(妳)目前使用中，覺得**最有效的**？
   為什麼？

   _____

   _____

3. 上述的 60 個單字策略中，哪一個是你(妳)目前使用中，覺得**沒有效的**？
   為什麼？

   _____

   _____

4. 上述的 60 個單字策略中，哪些是**學校老師或補習班老師**教過的？

   _____

5. 上述的 60 個單字策略中，哪些是**你(妳)自己發現**的？

   _____

6. 在單字學習上，你希望英語老師在課堂上**提供什麼協助**？

   _____

   _____

English Vocabulary Proficiency Test
英語單字能力測驗

第一大題：字彙選擇

說明：

本大題為字彙選擇，共有 18 題，每題均為四選一的單選題。請依題意 ，從四個選項中選出一個正確或最佳的答案。

1. (   ) My parents never _____ me for not doing well on the tests.
   (A) blame   (B) design   (C) sweep   (D) repair
2. (   ) Tom had a car _____ and broke his leg. He is still in the hospital now.
   (A) accident   (B) recycle   (C) operation   (D) pollution
3. (   ) The teacher asked the students to _____ the words and the pictures on the blackboard.
   (A) allow   (B) match   (C) print   (D) argue
4. (   ) There will be a great movie on _____ 36 tonight. You should see it.
   (A) century   (B) motion   (C) symbol   (D) channel
5. (   ) I don't like rock and roll. I like _____ music better.
   (A) classical   (B) terrible   (C) available   (D) primary
6. (   ) The man keeps a dog to _____ his house.
   (A) divide   (B) remind   (C) select   (D) guard
7. (   ) The missing child was crying _____ when the police found him.
   (A) away   (B) along   (C) aloud   (D) around
8. (   ) Taipei 101 was the tallest _____ in the world before 2010.
   (A) ceiling   (B) highway   (C) village   (D) building
9. (   ) The _____ turned the hat into a rabbit.
   (A) customer   (B) manager   (C) magician   (D) diplomat
10. (   ) I think we should _____ more about the plan for the weekend.
   (A) review   (B) discuss   (C) invent   (D) travel
11. (   ) This bag is _____ to that one but with a different color.
   (A) similar   (B) unique   (C) likely   (D) regular
12. (   ) She looks _____ to see if there is anyone standing behind her.
   (A) straight   (B) backward   (C) forward   (D) through
13. (   ) The _____ says that the department store is having a big sale. Let's go shopping this weekend.
   (A) information   (B) temperature   (C) advertisement (D) environment
14. (   ) John doesn't like his job and _____ a lot about it.
   (A) indicates   (B) develops   (C) includes   (D) complains

15. (　　) It is impossible for David to _____ smoking.
　　(A) quit　　　　(B) lack　　　　(C) hire　　　　(D) cure

16. (　　) I can _____ believe that Bill has become a singer. He couldn't sing at all.
　　(A) hardly　　　(B) nearly　　　(C) likely　　　(D) probably

17. (　　) The news says that a typhoon is coming. I think we should _____ our picnic.
　　(A) cancel　　　(B) design　　　(C) bother　　　(D) handle

18. (　　) His _____ visiting really surprised me.
　　(A) social　　　(B) sharp　　　(C) instant　　　(D) sudden

第二大題：字彙填空

說明：
本大題為字彙填空，共有 18 題。請依題意及提示字母，寫出最適當的字彙。作答時，請連同字首提示字母一同寫入，並視需要做適當變化。
請看例題：
　　We are so **ex**_____ about the trip to Japan.
正確答案為 excited，則在題目前對應的格子中填入 **excited**。

19. _____ Dad went to bed really **l**_____ last night. That's why he looks so tired today.

20. _____ This is my **fa**_____ TV program. I watch it every night.

21. _____ It's raining **o**_____. Let's stay home and play computer games.

22. _____ You should **w**_____ a heavy jacket in such a cold weather.

23. _____ Changjiang (長江) is the longest **r**_____ in China.

24. _____ Chinese people eat with **c**_____, not forks or knives.

25. _____ Mr. Lee keeps some pigs and **ch**_____ on his farm.

26. _____ **Pr**_____ more, and you can play the piano well.

27. _____ Tom didn't answer my call. **M**_____ he is still on the way home.

28. _____ Don't **to**_____ the dog. It might bite you.

29. _____ I listen to the music on the **r**_____ every night before I go to bed.

30. _____ My house is too small, so I have to **sh**_____ a room with my sister.

31. _____ Jane has studied hard for three days, and she **fin**_____ passed the math test.

32. _____ I will come back **s**_____. Please wait for me.

33. _____ Mr. Lin is a good **h**_____. He always helps his wife clean the house.

34. _____ Are you free this weekend? How about going to the movies **tog**_____?

35. _____ I feel **t**_____. Would you please bring me some water?

36. _____ Many teenagers like to do shopping on the **In**_____.

APPENDIX D

List of Strategies Found by the Participants

Description	Male		Female	
	Number	%	Number	%
Determination Strategies	3	1.37	1	0.48
Analyze part of speech	3	1.37	3	1.44
Analyze affixes and roots	6	2.74	5	2.40
Analyze any available pictures and gestures	10	4.57	10	4.81
Guess from textual context	3	1.37	3	1.44
English-Chinese dictionary	1	0.46	0	0.00
English-English dictionary	1	0.46	1	0.48
Bilingualized dictionary	3	1.37	9	4.33
Electronic dictionary	6	2.74	9	4.33
Online dictionary	3	1.37	1	0.48
Social Strategies				
Ask teacher for L1 translation	3	1.37	0	0.00
Ask teacher for a sentence including the new word	1	0.46	0	0.00
Ask classmates for meaning	5	2.28	2	0.96
Discover new meaning through group work activity	1	0.46	1	0.48
Ask family members for meaning	2	0.91	2	0.96
Study and practice meaning in a group	3	1.37	4	1.92
Interact with native speakers	2	0.91	3	1.44
Practice new words with family members	1	0.46	0	0.00
Memory Strategies				
Study word with a pictorial presentation of its meaning	4	1.83	4	1.92
Image words meaning	11	5.02	3	1.44
Connect word to a personal experience	5	2.28	2	0.96
Associate the word with its coordinates	5	2.28	6	2.88
Connect the word to its synonym and antonyms	0	0.00	3	1.44
Use scales for gradable adjectives	1	0.46	1	0.48
Group words together to study them	2	0.91	3	1.44
Group words together spatially on a page	1	0.46	0	0.00
Use new word in sentences	1	0.46	0	0.00

Description	Male		Female	
	Number	%	Number	%
Memory Strategies	1	0.46	0	0.00
Group words together within a storyline	12	5.48	8	3.85
Study the spelling of a word	7	3.20	7	3.37
Study the sound of a word	5	2.28	8	3.85
Say new word aloud when studying	1	0.46	1	0.48
Image word form	0	0.00	2	0.96
Underline initial letter of the word	1	0.46	0	0.00
Configuration	5	2.28	7	3.37
Use Keyword Method	3	1.37	4	1.92
Affixes and roots (remembering)	1	0.46	2	0.96
Learn the words of an idiom together	0	0.00	1	0.48
Use physical action when learning a word	1	0.46	0	0.00
Cognitive Strategies				
Verbal repetition	19	8.68	15	7.21
Written repetition	9	4.11	17	8.17
Word lists	1	0.46	2	0.96
Take notes in class	4	1.83	2	0.96
Use the vocabulary section in your textbook	3	1.37	1	0.48
Listen to the CD of word lists	1	0.46	2	0.96
Keep a vocabulary notebook	0	0.00	6	2.88
Metacognitive Strategies				
Watch English movies	11	5.02	5	2.40
Read English magazines	1	0.46	0	0.00
Read English novels	2	0.91	1	0.48
Read English newspapers	3	1.37	0	0.00
Listen to English songs	28	12.79	23	11.06
Listen to English broadcast	8	3.65	5	2.40
Watch English TV news	2	0.91	1	0.48
Test oneself with word lists	2	0.91	5	2.40
Skip or pass new word	4	1.83	7	3.37
Continue to study new word over time	1	0.46	1	0.48