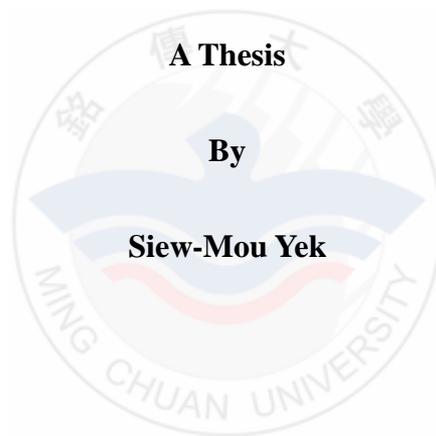


**Ming Chuan University  
College of Applied Languages  
Department of Applied English**

**Memory Enhancing Vocabulary Learning Strategy Instruction**



**Submitted in Partial Fulfillment  
of the Requirements  
for the Degree of**

**Master of Arts**

**June 2006**

**We approve the thesis of Siew-mou Yek**

**Date of Signature**

---

**Eva Salazar-Liu**  
**Chairperson of the Committee**  
**Associate Professor of Department of Applied English**

---

**Jia-Yeuan Lee**  
**Director, The Language Center**  
**Department of Applied Linguistics and Language Studies**  
**Chung Yuan Christian University**

---

**Li-Jiuan Tsay**  
**Member of the Committee**  
**Assistant Professor of Department of Applied English**

---

**Chaochang Wang**  
**Associate Professor of Department of Applied English**  
**Chairperson of Department of Applied English**



## ABSTRACT

This study explored the effects of Memory Enhancing Vocabulary Learning Strategy Instruction (MEVLSI) on vocabulary learning in a cram school in the Hsin-Chuang County area. The subjects consisted of 40 native ESL Chinese students, from 10 to 15 years old equally divided into Group A (control group), and Group B (experimental group). All subjects shared a similar social and educational background. For the two-week study, the teacher taught the control group (Group A) with the traditional vocabulary teaching method (TVTMM), while the experimental group (Group B) was instructed by using MEVSLI. Besides, qualitative interviews on a female teacher, a male student, and his father were carried out to follow up the results of the collected data. One-way ANOVA of pre and post test results rejected the null hypothesis ( $p < .05$ ,  $F = 38.668$ ,  $df = 3$ ). It was concluded that MEVLSI facilitated participants' vocabulary acquisition. This study suggests that ESL/EFL students can benefit from MEVLSI. MEVLSI can increase ESL/EFL students' interest in learning English vocabulary words. Further research was recommended and implications for future teaching were suggested.

## Acknowledgements

This thesis would have been impossible without the generous guidance from my teachers, classmates, and family.

First of all, I would like to express my deepest gratitude to my advisor, Dr. Eva Salazar-Liu, for her constant encouragement and substantial advice, which had helped me overcome my hardships and enabled me to finish the present work. This thesis would never have been completed if not for Dr. Salazar-Liu, my advisor, who urged me to read analytically and write correctly. It is the discussions with her that enlightened much of the ideas in this paper. Her invaluable assistance and unfailing patience are the support of my study.

Besides, I also want to dedicate my deepest thanks to my two committee members, Professor Jia-Yeuan Lee and Professor Li-Jiuan Tsay for carefully reading my proposal prospectus and gave me precious instructions and expert feedback. To the students who participated in the achievement test in this study, I also owe a special debt of gratitude.

Finally, I would like to thank my beloved classmates and family for their care and concern. They accompanied me through my hard time in the finishing of my thesis. Their suggestions and encouragement had always given me the confidence in pursuing my Master's Degree during the past year.

## TABLE OF CONTENTS

	<b>PAGE</b>
ABSTRACT.....	i
ACKNOWLEDGEMENT.....	ii
TABLE OF CONTENTS.....	iii
LIST OF TABLES.....	v

## **PAGE**

### **Chapter I - Introduction**

1.1 Introduction.....	1
1.2 Objectives of the Study.....	6
1.3 Questions and Hypothesis Posed by this Study.....	8
1.4 Variables Involved in this Study.....	9
1.5 Definition of Terms.....	9

### **Chapter II – Literature Review**

2.1 Conceptual Background.....	11
2.2 Sensory Memory .....	11
2.3 Short-term Memory (STM).....	12
Chunking.....	13
Rehearsal.....	13
2.4 Long-term Memory (LTM).....	15
Mnemonics.....	16
A Case Study.....	21
2.5 Review of Related Studies.....	22

### **Chapter III – Methodology or Procedures**

3.1 Purpose.....	37
3.2 Participants of the Study.....	37

Control and Treatment Participants.....	37
Case Interviewees.....	38
3.3 Research Design.....	39
Quantitative Approach.....	39
Qualitative Approach.....	41
3.4 Case Interviews.....	42
3.5 Data Analyses.....	43
<b>Chapter IV – Results and Discussion</b>	
4.1 Quantitative Approach: Pretest – Post test Findings.....	44
4.2 Qualitative Approach: Interview Findings.....	48
<b>Chapter V – Discussion</b>	
5.1 Conclusion.....	53
References.....	64
Appendix A Sample Lesson Plan.....	71
Appendix B A Teaching Sample of Mnemonic Link Method.....	89
Appendix C Achievement Test.....	91
Appendix D Transcription of Teacher Anita’s Interview.....	93
Appendix E Transcription of Daniel’s Interview.....	95
Appendix F Transcription of Mr. Chen’s Interview.....	98

## LIST OF TABLES

### Table

1. Demographic Table of Participants.....	38
2. Paired Sample Correlations.....	39
3. Pilot Test-Retest Scores of Paired Sample Test.....	40
4. A Comparison of Teaching Approach for Group A and B as Applied in this Study.....	41
5. Descriptive and Inferential of Cg Pretest Scores.....	44
6. Descriptive and Inferential of Eg Pretest Scores.....	45
7. Descriptive and Inferential of Cg Posttest Scores.....	45
8. Descriptive and Inferential of Eg Posttest Scores.....	46
9. Cg Paired Samples Test.....	46
10. Eg Paired Samples Test.....	46
11. Results of One-way ANOVA on Vocabulary Achievement Test.....	47

# CHAPTER I

## Introduction

### 1.1 Introduction

The teaching of English in Taiwan is mainly based on the rote memory instructional process or, as we call it, the traditional teaching method. The teachers mainly conduct their English classes by applying the grammar translation method (GTM). This situation is such even though Richards and Rodgers (1986) pointed out that the traditional teaching method ...

“has no advocates. It is a method for which there is no theory. There is no literature that offers a rationale or justification for it or that attempts to relate it to issues in linguistics, psychology, or educational theory” (p.5).

Therefore, is this type of language learning methodology appropriate for the English as a second language or English as a foreign language (ESL/EFL) students in Taiwan? ESL/EFL students in Taiwan spend years attending English classes learning the English grammar and practicing the translation of the words in order to remember them. Chang (2004) mentioned that teachers treat English grammar like mathematical formulae and students are expected to memorize all the formulae. She also stated that most teachers and students in Taiwan believe that the only way to master a language is to memorize all the words. This practice was addressed by many researchers, such as Cohen (1994) and Rhoder & Huerster (2002), who

attempted to explore the source of difficulties in reading comprehension for language learners. They found out that most ESL/EFL students regard lack of English vocabulary as their main obstruction to reading comprehension. Furthermore, from my six years experience as an English ESL/EFL teacher, I as a researcher had observed that students in Taiwan usually look up vocabulary words and expressions in their dictionaries and do repetitive drills of the definitions. Thus, definitions are memorized *verbatim* and, often, words are not applied in context. As a result, Huang (1999) noted that Taiwanese high school students, after spending 6 or more years learning English, are “grammatically competent but communicatively paralyzed” (p.11). Indeed, most of our ESL/EFL students in Taiwan are often observed as being hardly able to carry out successful English conversation with foreigners.

English teachers in Taiwan are still applying the traditional vocabulary teaching method (TVTM) despite the fact that there are many strategies of vocabulary learning available. The traditional vocabulary teaching method (TVTM) is the grammar translation method which was defined by Richards & Rodgers (1986), “as an experience of memorizing endless lists of unusable grammar rules and vocabulary and attempting to produce perfect translations of stilted or literary prose” (p. 4). Huang (1997) stated that the basic English vocabulary threshold for Taiwanese senior high school students before entering a university is, at least, 2800 vocabulary words.

Under the recent educational reform, and, as indicated in the book, Stewart's (2003), "*The Most Used 2000 Words*", junior high school students need to acquire at least 2000 English vocabulary words and senior high school students at least 7000 English vocabulary words in order to attain acceptable level of proficiency. Given this volume, teachers often resort to an instructional style aimed to cover a large amount of vocabulary in a short time.

Thus, during vocabulary sessions, most of the English classes in Taiwan are conducted under the rote memory instructional process. On the one hand, students may not be able to cope with or possess sufficient vocabulary to facilitate their English usage. On the other hand, Huang (1999) described most senior high school and first-year university students in Taiwan as lacking the vocabulary threshold to enable them to possess efficient capacity to successfully read their English textbooks.

Is there any strategy that English teachers in Taiwan can apply to help the ESL/EFL students in Taiwan to enhance their vocabulary learning? Can students be taught to develop learning strategies in order to think faster, remember better and even solve problems more efficiently? From these questions, one can easily see that employing more effective vocabulary acquisition strategies is becoming critical to English teachers both in junior and in senior high schools in Taiwan. It is necessary for teachers to promote memory-enhancing strategies to help students to memorize

and retain the vast amount of required vocabulary in ESL/EFL learning in Taiwan.

The recent educational reform movements in Taiwan apparently have posed further challenges on teachers. The attempt has substantially added the number of students, particularly ESL/EFL students, with special learning needs. Most ESL/EFL students have difficulty remembering incoming information (Conduis, Marshall & Miller, 1986). Kavale and Forness (1986) also realized that memory is the major difficulty that both normal students and students with learning disabilities face. According to Smith (1981), poor memory performance may be attributed to either disabilities or inadequate strategies of learning, retention or recall. Some researchers argue that children with learning needs can correctly acquire, store and retrieve information, but are deficient in knowing how and when to use specific strategies for remembering (Meese, 1994). These learners may lack strategies for organizing information for storage or for retrieving (Sutaria, 1985). On the other hand, present reform initiatives have compelled teachers to raise academic standards so that their students will perform well on State Competency Tests in the United States (Mastropieri & Scruggs, 2000). All these influences have made teachers become aware of the importance of the instructional and learning strategies that can enhance learning in diverse classrooms. However, these strategies must be effective for most types of students.

Then, how can language learners acquire words to facilitate their lexical use of the target language? Some researchers, (Asselin, 2002; Hsu, 2003; and Schmitt 2000) agreed that students' word knowledge could be greatly enhanced if teachers can use an eclectic teaching approach that includes using directive instruction or indirective instruction. Directive instruction here means overt instruction while indirective instruction here means covert instruction. Schmitt (2000) expressed that words can be learned from explicit or incidental teaching. That means, in either case, words are learned incrementally. According to Smith (1981), poor memory performance may be attributed to inadequate strategies of learning, retention or recall. In another study, Yu (1998) proved that students showed significant vocabulary gains after reading widely. Wide reading was described by Day and Bamford (1998) as extensive reading. Koolstra and Beentjes (1999) carried out studies to measure foreign language vocabulary acquisition resulting from media. The results showed that Dutch students could incidentally acquire an English word by watching subtitled television programs. How did these students remember the vocabulary after watching subtitled TV programs or reading?

One of the most effective ways to help students remember new information is a method called **mnemonics**. Henson & Eller (1999) suggested that most students, at one time or another, have used mnemonics (a kind of memory enhancing

vocabulary learning device) as a device to help them remember. To illustrate this, Higbee and Kunihiro (1985) showed that students learn new information by pairing something memorable, such as a word or an object, with new information.

Henson & Eller (1999) facilitated a teaching strategy known as “Enhancing Student Memory Strategy” by “using our knowledge about information processing and memory to enhance student memory and learning” (p. 265). In this present research, “mnemonics” is a concept of Henson and Eller (1999) and was adapted into a new strategy which I named as Memory Enhancing Vocabulary Learning Strategy Instruction (MEVLSI). The main aspect of this strategy is that students may be taught to self-generate strategies and techniques to enhance their memory of vocabulary.

## **1.2 Objectives of the Study**

Most ESL/EFL students in Taiwan are facing difficulties in their vocabulary learning. How teachers can apply vocabulary instruction and explain vocabulary to provide knowledge to students is an important issue. Many empirical studies (e.g., Rodriguez & Sadoski, 2000; Wang & Yeh, 2001; Bauman et al., 2002) have tried to explore the effect of the strategy-based vocabulary instruction on vocabulary acquisition.

Asselin (2002) conducted a study suggesting that vocabulary instruction plays

an important role in ESL/EFL reading and listening. Rhoder and Huerster (2002) confirmed that solid vocabulary is essential in successful school learning. In other words, ESL/EFL students at the university level who require a vast number of words certainly need vocabulary for their written English. The above few studies reviewed the importance of vocabulary instruction in listening, speaking, reading and writing.

It is hoped that the application of evidence obtained from the previous studies on vocabulary instruction will maximize ESL/EFL learners' efforts in vocabulary acquisition. Most studies surveyed so far employed only either qualitative or quantitative research methods. However, a review of the literature showed a scarcity of studies using both qualitative and quantitative methods to examine the effects of strategy-based instruction on vocabulary acquisition. Furthermore, a survey of the *Comprehensive Index of Journal in Education (CIJE)* from 1985 to 2006 revealed that almost 95% of the previous studies on such area were related to students with disabilities. But many studies discussed the applications of such strategies to normal students. In this present study, both qualitative and quantitative research methodologies were employed to explore the effects of the Memory Enhancing Vocabulary Learning Strategy Instruction (MEVLSI) on vocabulary acquisition. Therefore, studying the effects of MEVLSI herein involved not only quantitative data but also interview reports. Two kinds of vocabulary teaching treatments, the

traditional vocabulary teaching method (TVTM) and MEVLSI were also manipulated in this study. It was deemed essential to conduct this study for teachers to know about this strategy and its helpfulness in memory enhancement. Thus, the results gained from this study may provide tentative support for the use of vocabulary to a more effective vocabulary-teaching program. Such a program can also help language learners to self-generate learning strategies in achieving their language acquisition goal.

### **1.3 Questions and Hypothesis Posed by this Study**

This study aimed to answer three questions:

A quantitative approach was used to answer the first question as a null hypothesis was put forth.

A.) Will students' scores on a vocabulary performance test differ before or after receiving training in MEVLSI?

Ho- Training in MEVLSI will not significantly affect students' performance in a researcher-made vocabulary achievement test.

A qualitative approach was used to answer the next two questions.

B.) How can a school teacher effectively apply the MEVLSI to explain vocabulary items to ESL/EFL students during the teaching program?

C.) From reports, how did a user rate the effectiveness of the newly learned MEVLSI?

#### **1.4 Variables Involved in this Study**

In this study, the independent variable was the different vocabulary teaching treatments, TVTM and MEVLSI. The dependent variable was the scores on the vocabulary achievement test as measured at the beginning and the end of the instructional period. The controlled variables of the experiment included the teacher, teaching materials, and length and period of time of instruction. Also, although the age of the subjects varied from 10 to 15 years, their level of English proficiency was similar.

#### **1.5 Definition of Terms**

School learners in this study referred to elementary and junior high school students, aged from 10 to 15-year-old students, attending English as a Second Language after school classes (normally called cram school in Taiwan) in Samuel's English School in Hsin-Chuan City area.

The traditional vocabulary teaching method (TVTM) referred to grammar translation method as defined by Richards & Rodgers (1986). TVTM teaching consisted of teachers' practice of pronunciation modeling, drilling, English to Chinese translation, demonstration of simple sentence and rote memory. This type of teaching method was used in the control group.

In this study, MEVLSI referred to the concept that I adapted from Henson &

Eller (1999). Combination of phonics, word grouping, syllabication, back-drill pronunciation, keyword and sentence plus definition explanation method were used in this method. This type of instruction was used in the experimental group to enhance their memory of the instructed vocabulary.

Training in this study referred to a two-week training program in the MEVLSI.

In this study, performance referred to students' scores in a researcher-made vocabulary achievement test constructed for this research.



## CHAPTER II

### Literature Review

#### 2.1 Conceptual Background

People learn things through visual, auditory and tactile methods. Once they have learned a certain thing, they have to keep it in storage so that whenever they need it, they can retrieve it. How does this process work? Basically, Atkinson and Shiffrin (1968) proposed a model of memory that included three parts: sensory memory, short-term memory and long-term memory.

#### 2.2 Sensory Memory

Our minds interpret information based on our perceptions. Perception is defined as the process of determining the meaning of what is sensed (Klaczky, 1984) and implies the ability to give meaning to perceived stimuli. According to Bower (1999), there are three components of sensing stimuli: the visual sensory register, the auditory sensory register and the tactual sensory register. In general, we call these three components of sensing stimuli as the sensory memory. Wolfe (2001) noted that as soon as an enormous amount of sensory stimuli simultaneously arrive, the role of sensory memory is to use the sensory receptors to process the information coming into the brain. However, the sensory memory stores only a small amount of information because a limited capacity of human attention is transmitted slowly to

short-term memory. Atkinson and Shiffrin (1968) suggested that stimuli from the environment first enter sensory memory. They further defined sensory memory as a huge restoring system that could retain information from the senses with considerable accuracy. They also found that information in sensory memory is short lived.

### **2.3 Short-term Memory (STM)**

Case (1984) defined **short-term memory (STM)** as **working memory**, or the memory we have in our consciousness (cited from Henson & Eller, 1999). Henson & Eller (1999) pointed out that STM is important to language learning because it enables us to deal with upcoming experiences in our environment and solve immediate problems. Wolfe (2001) stated that short-term memory consciously processes information to allow us to integrate new information with stored knowledge and ensure its storage in long-term memory. Case (1984) regarded STM as one of the main mechanisms of cognitive development. He also pointed out that “as children age, less memory is required for basic operations, more memory is available for new operations, and more can be performed concurrently” (cited from Henson & Eller, 1999, p. 254). Banikowski (1999) indicated that background knowledge is one of the major sources that can enhance a short-term memory’s capacity. Other researchers (Banikowski, 1999; Carter, Hardy, & Hardy, 2001; Wolfe, 2001) also argued that short-term memory can be improved by (a) adding the amount of

information which can be stored in chunks or (b) by rehearsal, and thus, increasing the duration of the information. Therefore, in the following section, “chunking” and “rehearsal” will be defined.

### **a) Chunking**

Terrace (2002) defined chunking as an explanation of storage and retrieval of information from short-term and long-term memory. Most people have the ability to remember a short list of things, such as someone’s cell phone number if they chunk them by grouping the list items. For example, we chunk to remember a ten digit cell phone number. A 10-digit cell phone number 0916861979 can be easily remembered by grouping them up as 0916-861-979. According to Miller (1956), early experiments suggested that the capacity of short-term memory was only approximately 5 to 9 separate new items at once. However, this limitation can be overcome by using strategies such as chunking or grouping.

### **b) Rehearsal**

Banikowski (1999) defined rehearsal as the ability to associate and recite new information with previous information in our mind. He also presented two types of rehearsals called maintenance rehearsal and elaborative rehearsal. First, maintenance rehearsal is to repeat the information in our mind. That is, it is the parrot-like repetition of items, and this may not cause any item to be transferred to

long-term memory ( Craik and Lockhart, 1972). To retain an idea in memory, people rehearse, i.e, verbally repeat the idea several times.

Second, elaborative rehearsal is to connect new information with stored information from long-term memory. In other words, it involves in the taking of the words and creating an extended image, which causes an enormous increase in subsequent recall ( Craik and Lockhart, 1972). Craik and Lockhart (1972) also stated that through this elaborative rehearsal, the material seemed to be transferred to long-term memory. For example, you are on the way home and suddenly you think of a phone call you should make when you get home. In addition to rehearsal, you create an image to remind yourself to make the call. However, the image should be associated with a very familiar object. You may visualize a big telephone put right in front of your front door. As soon as you get home, the sight of the front door reminds you of the telephone and the need to make the call immediately. This concept is upheld by Ausubel's (1963) meaningful learning theory. Ausubel and other researchers (Ausubel, 1963; 1968; Ausubel, Novak and Hanesian, 1978) addressed that to learn meaningfully, one must relate new knowledge to relevant information he or she has already known. Hence, new information must interact with the learner's prior knowledge. Meaningful learning, therefore, is personal, idiosyncratic and involves a clear recognition of the links between concepts (Ausubel,

Novak, and Hanesian, 1978). It is not necessary to know how information is presented but it is necessary to know how the new information is integrated into the old knowledge structure that is crucial in order for meaningful learning to occur.

In either case chunking and rehearsing are processes that we use to repeat to ourselves the information that we have learned in order to remember the information. But the capacity and duration for the information is limited. Zimbardo, Weber, & Johnson (2003) conducted a study and proved that chunking and rehearsal strategies help to retain material and then to transfer it to long-term memory.

#### **2.4 Long-term Memory (LTM)**

In addition to chunking and rehearsal that facilitate short term memory, it is more desirable for people to store new information for long term retrieval in Atkinson and Shiffrin's long-term memory (LTM). Perkins (1989) noted that long-term memory (LTM) is the part of our memory function that stores large amounts of memory that are stored for a long time, even stored throughout our whole life.

Wolfe (2001) suggested that its capacity is extraordinary huge. Wolfe (2001) further subdivided LTM into procedural memory (our ability to store automatic processes for constant action) and declarative memory (our ability to store and recall information that we can say or write). From evidence obtained from many clinical reports about people who have remembered events regarding their birth and conceptions,

Chamberlain (1990), believed that long-term memory includes retaining of permanent knowledge. The real boundaries of memory can stretch back to include birth memory that we may not be able to retrieve but it is there, ready to be used. To conclude, in general, when people retrieve information through their sensory memory, some data may be discarded before storage, others are placed only in our short-term memory, and still others are simultaneously stored in both our short-term memory and long-term memory.

### **Mnemonics**

According to Atkinson (1975), mnemonic strategy was first used in a general education setting by college undergraduates learning foreign language vocabulary. Henson and Eller (1999) formulated a memory enhancing learning strategy instruction (MELSI) called metamemory skills theory. The basic meaning of this kind of theory refers to “individuals’ awareness of their own memory process and capabilities” (p. 277) and it includes the use of mnemonics. They stated that metamemory is one of the main contributions of cognitive literature on student memory.

Higbee & Kuniyara (1985) also facilitated a learning theory that is considered to have a positive implication in academic learning. The basic idea of Higbee & Kuniyara’s (1985) learning theory is that when people learn something, they are

pairing something memorable, such as a word or an object, with new information.

That means people learn simply by explicitly connecting new information with prior knowledge.

Mnemonics are defined as strategies used to enhance remembering by connecting new knowledge with familiar words and images (Levin, 1983; Scruggs & Mastropieri, 1990a, 1990b; Woolfolk, 1993). Mastropieri & Scruggs (1998) suggested that mnemonic strategy is one technique that has shown great promise for enhancing academic learning in inclusive classrooms. These strategies enhance students' learning and memory and involve connecting new information with stored information by means of visual and acoustic cues. Use of such instructional strategies do not require a wealth of additional materials or extensive planning and preparation time (Mastropieri & Scruggs, 1998). Furthermore, these strategies have been suggested as a remedial treatment for students with memory deficiencies.

Mastropieri & Scruggs (1991) also stated that mnemonics involve the presentation of information in ways that promote retention, and provide structured strategies for retrieval of that information. According to Levin (1983), a mnemonic is a memory enhancing instructional strategy that involves teaching students to link new information that is taught to information they have already known. Furthermore, Levin (1983) also pointed out that mnemonic instruction is useful for students of all

kinds of age range. However, students in the early elementary grades may not be able to learn or recall as many things as older students do but they are involved in various activities, which engage in making associations that apply mnemonic principles. For example, while we are teaching elementary level English, we always associate the letter “a” to the word “apple” or “b” to “boy”. Sometimes, we also ask students to turn clockwise or anti-clockwise. This way, we are employing mnemonic principles. Normally, teachers instruct students in the use of mnemonic strategies by using both visual and verbal cues. Bolich and McLaughlin (2001) claimed that mnemonic strategies include pegwords (words associated with numbers, used to remember lists of items; e.g. one for bun, and two for shoe), keywords (associating a similar sounding word with a targeted word; e.g. the word “carline” can be remembered via the sound of word “car” with the imaginative picture of a witch in the car.), acronyms (using the first letter of each word in a list to construct a word; e.g. MOE for the Ministry of Education), acrostics (creating a sentence with the first letter of each word in the targeted information; e.g. the word “SLAM” accounts for Seal Laughs At Me) and others.

In the 1980s, Mastropieri and Scruggs conducted a lengthy research engaging 24 separate studies with 938 students in grade 3 through 12. Among these 24 studies, twenty one studies were conducted primarily with students with learning disabilities,

two involved with mild mental disabilities, and one involved students with behavior disorder (Scruggs & Mastropieri, 1990b). The researchers applied a variety of mnemonic strategies and made comparison between control group and experimental group, such as free study, teacher-led normalized instruction, and rehearsal variations (Scruggs & Mastropieri, 1990b). The result showed that mnemonic instruction tenaciously produced positive effects on the retention of information over time by the mildly special needed students who were involved in their research (Scruggs & Mastropieri, 1990a, 1990b).

Bolich and McLaughlin (2001) stated that Mastropieri and Scruggs conducted their study under three basic assumptions: (a) meaningfulness increases the learning of new things, (b) students who self-generate strategies for learning and remembering increase meaningfulness, and thereby remember better than students who do not, and (c) students with learning disabilities are deficient in generating effective memory strategies.

Mnemonics instruction has also been shown to be effective in students' language comprehension. However, it is important to understand that mnemonic instruction is a memory-enhancing strategy and it is not a strategy specially designed to enhance comprehension. Some researchers, such as Mastropieri, Scruggs, & Fulk (1990), suggested the reason students using mnemonic strategies obtained higher

comprehension scores is that the strategy increases their ability to recall the factual information needed to answer a topical comprehension question. For example, a student could understand the meaning of lake, but could not remember the names of the five great lakes in the USA. Then he or she can be taught to use “Acronyms” (words whose individual letters can represent elements in lists of information), such as the word “HOMES” to represent the five great lakes: H for Huron, O for Ontario, M for Michigan, E for Erie, and S for Superior. Through the use of mnemonic strategies, it is more likely that the students will be able to remember this factual information, answer the question, and demonstrate comprehension. Scruggs and Mastropieri (1990b) suggested that, comprehension in and of, itself does not ensure remembering. They clarified that the actual purpose of mnemonic strategies is its reinforcement and meaningfulness, which indirectly enhance comprehension.

Mastropieri and Scruggs (1991) pointed out that students who have the knowledge of mnemonic theory will be able to employ mnemonic strategies in other content areas in ESL/ EFL learning. There are also many studies indicating that the uses of mnemonics in curriculum subjects, such as math, English vocabulary, capitals of different countries, history, spellings, phonics and others (Scruggs & Mastropieri, 1990a; 1990b). All these have shown significant results.

## **A Personal Case Study**

A 14-year-old boy student in Samuel's Cram School was previously diagnosed by a medical doctor with having a mild case of Tourette's Syndrome. He was observed to be absent-minded, lacked of concentration, always shouted in class and was forgetful. Two years ago, when he first came to my cram school, I, the researcher, gave him a rudimentary vocabulary test and found that he had only 2<sup>nd</sup> grade level English vocabulary competency although he was a junior high school student and had studied English since he was in kindergarten. I started to teach him how to use mnemonic instructions to help him to remember English vocabulary. For instance, I taught him how to syllabicate long words, like "comprehension". Meanwhile, I also used back-drill approach to teach him to pronounce a word. The word "organize" was pronounced as, ize, nize, anize, ganize, and organize. All the time, English-Chinese translation instruction was also applied respectively for him to understand the meaning of the word. After less than two years, last summer, he took the General English Proficiency Test (GEPT) basic level and successfully passed the test. On September 11, 2005, he joined the GEPT oral test again. The oral test result was released on October 14, 2005 and again, he passed the test.

In September, 2005, he returned back to my cram school for his English class again. Reportedly, he is maintaining a successful test performance in his high school.

He showed highly motivated behavior to increase his learning proficiency (e.g, he is preparing to take the GEPT intermediate level test and always comes to class early.

Among other reasons, the student's retention of vocabulary words effectively (through his learned memory enhancing skills) may have been a big factor in his motivation.

However, the instruction of abstract words on vocabulary can be demanding to the teacher. Often, mnemonics and other memory enhancing strategies can not be applied to the teaching of such words.

## **2.5 Review of Related Studies**

As mentioned before, from 1985 to 2006, 95% of the studies on memory enhancement listed in the *Comprehensive Index of Journal in Education* (CIJE) were related. Mnemonic instruction “has been well researched and validated for students, with high incidence disabilities, particularly students with learning disabilities, as well as for general education students in elementary and middle school” (Brigham & Brigham, 2005, retrieved May 28, 2006). A survey of the *Comprehensive Index of Journal in Education* (CIJE), from 1985 to 2006, revealed that 95% of the previous studies were related to students with disabilities. Although, most of the reports that were chosen for this study's review involved children of special needs, generalizations in the reviewed studies were often made to include general education students.

For example, Heron (1992) correlated special needs disabilities with the use of

mnemonic techniques in a classroom. He carried out a study by using acrostic mnemonic to fifth grade students in a regular classroom. The control group consisted of 20 typical students and 4 children with learning disabilities. The treatment group consisted of 20 typical students and 5 children with learning disabilities. After treatment, a post-treatment test was given to both groups. The result showed an increase in test scores across all students in the treatment group, whereas, for the control group, their test scores decreased slightly. Heron (1992) concluded that mnemonic instruction could be employed to both general students and students with disabilities.

Thus, the following review of related studies mainly focused on children of special needs. Although the samples involved in this present study were not such children, conclusions (such as Heron, 1992) may also be applied to general students.

In a recent study (Carney & Levin, 2000), college students used a mnemonic strategy to study and recall painting-to-artist matchings. The result showed that those students who used mnemonics substantially outperformed those who did not use them on tests that required recall of artists and their paintings. Two more recent studies (Mastropieri, Sweda, & Scruggs, 2000; Uberti, Scruggs, & Mastropieri, 2003) on using mnemonics for social studies instruction showed significant test improvement among all.

Levin, Shriberg, Miller, McCormick & Levin (1980), conducted a study examining the use of keyword method to teach the US states and states' capitals to 4<sup>th</sup> and 5<sup>th</sup> graders. The students were divided into the control and treatment groups. Both groups were initially presented 12 capital state pairs and, later, 13 more pairs. The control group was told to remember the pairs "any way they wished". The treatment group was taught the keyword method by forming another association between the name of the capital and a different keyword. For example, they associated the word apple for Annapolis. Later, the two keywords were linked by a visual image that is a line-drawing in which the two keyword referents were related (for instance, the capital of Maryland is Annapolis presented with a picture of two apples getting married).

The results obtained for this study were convincing. Students who learned using the keyword method recalled on an average 78% correct pairs versus 65.9% for those not trained in the keyword method. Two days later, the keyword group retrieved 71.2%, while the non-keyword trained group's result had fallen to 36.4%.

The result of this study was not surprising because obviously the control group did not know how to use the mnemonic techniques to help them to recall what they have learned. Clearly, the keyword instruction method is an effective method in retaining information.

Levin, McCormick, Miller, Berry & Pressley (1982) conducted a study using the keyword method to teach abstract verbs. They successfully taught 4<sup>th</sup> graders abstract verbs, such as persuade, hesitate, object, glisten, resolve and others by using the keyword method. There were two steps employed. For the first step, the students were instructed to learn a keyword which was phonetically similar to the word. For example, purse for persuade and he's a date for hesitate. Every pair of the keywords and the words to be learned was showed on a display card. The keyword-target word was showed once to the student. When students could not recall accurately, they were again show the keyword-target word card, as a reminder. After repeating the process two times, almost all the students were able to give the correct answers.

The analysis's results showed that the students using the second step method remembered significantly more than the students using the step one method. The recall on average was 82.8% correct versus 55%. This shows that mnemonic keyword method with proper instruction can substantially enhance students' memory.

Touloumtzoglou (1997) conducted a research using the keyword mnemonic in modern Greek language acquisition. The main point of this study was to evaluate if the keyword method could be used as part of a regular teaching aid in a Greek language class. Three sets of tests were used to facilitate the whole experiment.

The first set of tests involved using the rote memory condition in which the students have to use their own techniques to memorize the newly learned vocabulary. The second set of tests was the unstructured keyword condition in which the students were asked to generate a keyword which was phonetically similar to the newly introduced word. At the same time, the students were also requested to form an image regarding the meaning of the word. The third set of tests was the structured keyword condition in which students were given with both the keyword as well as the interactive image. On the other hand, instruction and training on the links between keywords and image were also provided to assist the students to recall words from the keywords.

In the study, English or familiar Greek keywords were used to recall Greek vocabulary items. The first set of tests was applied over a period of five weeks and the students were told not to use any particular mnemonic strategy. The second set of tests was applied to the same sample of students for over six weeks during which the unstructured keyword method was introduced. Eventually, the third set of tests was applied with the use of the structured keyword method.

The results of the study showed that students using the structured keyword condition improved their performance significantly. Nevertheless, those lower achievers were the ones to benefit the most by using the structured keyword technique.

However, for overall performance, the unstructured keyword condition retained the lowest performance.

Cheryl Irish (2002) conducted a study to evaluate the effectiveness of a Memory Math program. The design was systematically replicated across three pairs of students (six students in all). Six students with learning and cognitive disabilities selected from five special education classrooms were recruited in this study. Every student had been identified as learning disabled (LD) in mathematics or cognitively disabled (CD) and in need of special education. Six special education teachers with background information and research, on the use of mnemonic strategies, volunteered to participate in the study. Following memory Math instruction, each volunteer completed a screening instrument on students in their 3<sup>rd</sup> to 6<sup>th</sup> grade math classes. During this study, Memory Math (Irish, 2002) instruction was provided in special education resource rooms. Students worked independently, one per computer for quizzes and individually, in pairs, or in groups for electronic instruction.

The six students were paired as Students 1 and 4, Students 2 and 5 and Students 3 and 6. After approximately two weeks of intervention, and when the first pair, Students 1 and 4, demonstrated criterion level performance in the treatment phase, the second pair, Students 2 and 5, began the treatment phase. Similarly, after at least two weeks of intervention the last pair, Students 3 and 6 began the treatment.

During the Memory Math program, the students were taught the mnemonics one at a time. Data were collected for eighteen weeks. The results were stored on the hard drive of each student's computer and evaluated by the researcher at the end of each week. The students' scores on electronic and paper/pencils probes were tracked on a weekly basis to evaluate the effectiveness of the Memory Math (Irish, 2002) program. Accuracy on electronic and paper/pencil probes were measured. Five of six replications of the intervention demonstrated improved accuracy on the electronic probes. Four of six students achieved scores indicative of mastery (i.e., scores greater than 85%) on the basic multiplication facts and those gains were maintained over time. Of the 5 students making gains on the electronic quizzes, Students 1 and 4 experienced the greatest gains. All six students demonstrated increased accuracy on the paper/pencil probes.

King-Sears, Mercer, and Sindelar (1992) conducted a study comparing a systematic teaching condition, an imposed keyword mnemonic, and an induced keyword mnemonic condition on the ability of students with mild disabilities to learn and remember the definitions of new science vocabulary terms. The systematic condition included direct instruction through effective teaching techniques, and the imposed keyword condition incorporated teacher-provided keyword mnemonics. The induced keyword condition was used to determine if students could successfully

generate and employ their own keyword mnemonics.

The subjects were 34 males and 3 females in sixth through eighth grades. Thirty of the children were diagnosed with learning disabilities, and seven had been labeled as either emotionally or behaviorally disordered. Three special teachers received 4-6 hours of training in one of the three methods of instruction. Forty eight 10<sup>th</sup> grade science vocabulary words were clustered by category and presented in groups of 12 over the four-week study. Large cards (8.5 x 11 inches) were used to present the terms, with card content varying by treatment. Teachers were required to follow a special script for presenting material in each condition, which were three days of instruction and one day of testing. Each teacher spent 3 minutes of Day 1 demonstrating their instructional techniques with sample words. Each instructional day then consisted of 12 minutes of scripted instruction and a 5 minute written quiz over the vocabulary. Students were tested twice on the fourth day of the week over all 48 words; first on their ability to write definitions for the given terms, and then on their ability to match given terms and definitions. Post-treatment tests were given at one and three weeks to check maintenance.

This study found no significant effects on the written definitions or matching tests for the four weeks of the study. They did, however, find significant differences on the matching measure for the fourth week's words during the fifth-week

maintenance check for both the imposed and induced keyword conditions. No significant difference was found for either the 48- or 12-word sets during the eighth week maintenance check. The researchers reported that students in both keyword conditions (particularly the imposed group) were learning and remembering more information than the control group, but that the differences were not significant. The students and teachers involved in the keyword conditions reported satisfaction with these methods. They enjoyed the novel presentation, although students in the induced condition felt challenged by the task of creating their own mnemonics.

Fulk, Mastropieri, and Scruggs (1992) examined the effects of intensive generalization training in complex mnemonic strategies on the ability of students with learning disabilities to independently transfer the strategies to other areas. Fifty-six middle-school students of normal intelligence, who spent part of each day in a resource room, and experienced difficulty in content-area classes were randomly assigned to one of three conditions: mnemonic generalization, mnemonic generalization and attribution training, or a rehearsal condition. An attribution pretest was administered to all students.

Phase one of the intervention lasted for one day, using training cards, difficult vocabulary words, and scripted lessons to introduce students to their particular strategies. Guided practice and modeling were used with ten-page booklets

containing vocabulary terms to train students in the particular strategies associated with their condition. Students in the attributive mnemonic condition also received training in implementing attributive strategies.

Two recall measures were administered daily: a production test (students were to answer a question with the correct vocabulary word) and an identification (matching) test. Phase three consisted of two generalization and maintenance checks that occurred at one-day and two-week intervals after phase two ended. Identical assessment booklets containing novel vocabulary words were used for all conditions. Students were instructed to use the method that would best help them to study for an impending quiz. They were given 10 minutes to study the words, and then took the test. An attribution posttest was also administered at the two-week interval.

No significant differences were found across conditions for phase one, on either the production or identification tests. Both mnemonic conditions showed significant differences on two production tests of the first phase over the rehearsal condition, and the mnemonic generalization students significantly outperformed the rehearsal students on two identification tests of the first phase. The second set of tests during phase two showed that students in both mnemonic conditions scored significantly higher than the rehearsal condition group. No significant differences were found on either of the Day 1 tests of phase three, (but the rehearsal condition

students insignificantly outperformed both of the mnemonic groups). The two-week test found a significant difference for the mnemonic conditions on the identification test, but not the production test.

Mastropieri, Sweda, and Scruggs (2000) conducted a study on one teacher's application of mnemonic strategy instruction in her inclusive 4<sup>th</sup>-grade social studies class. The teacher described how the strategy was employed to promote recall of academic content, the effectiveness of the intervention, and students' views of mnemonic instruction. The class where the teacher applied mnemonic strategy consisted of twenty six African American children. Twenty two students were 9 years old, two students were 10 years old and two were 11 years old. Out of the twenty-six students, six students were reading above grade level, eleven students were reading on grade level, and nine were reading below grade level. Five of the students were classified as special education students. Among them, four had both special learning disabilities and speech or language impairments. One student had these disabilities in addition to emotional disturbances. Another student was in the middle of the special education referral process.

The class focused on instructional strategies to improve language arts, science, and social studies. Mnemonic strategies were introduced as one way for increasing learning in these areas. After the training course, the teacher firstly taught the

students how to use mnemonics before mnemonic strategies were introduced. The teacher also integrated any mnemonic strategies for concepts or vocabulary within the lessons that she taught the students. For example, the teacher looked at the spelling and the sounds of the concept or vocabulary and tried to drive an easy, familiar word or phrase to be the keyword. Later, she related the keyword to the definition through a picture. Another example was when teaching the lesson “The Chesapeake Bay: The Pathway for Settlement”. She began by displaying a large map of the world and students had to locate Europe and the quickest path from there to the New World. During the lessons, mnemonics were reviewed via the linkage between keyword and picture.

The teacher evaluated the students by means of two categories:

**A. Academic achievement.** Students performed particular well on the unit test. As a measure of the effectiveness of the mnemonics, the teacher evaluated the percentage of correct answers given by her students on the content that had been instructed mnemonically versus the percentage of correct answers for content that had not been instructed mnemonically. The result showed that her normally achieving students performed well on both types of items, scoring an average of 83.3% correct on non-mnemonic content and 88.9% correct on mnemonically instructed content. As for the students who were enrolled in special education they appeared to benefit

greatly from the mnemonics. The results showed that these students had scored only 36.7% correct on the non-mnemonic content but had answered 75% of the mnemonically instructed content correctly.

**B. Attitudes.** The teacher also made an investigation on how the students felt about the mnemonic strategies. One item was the following: On a scale of 1 to 10 points, 10 points being the best point, how much did you like learning the mnemonics? Of the 22 responses that were returned, 19 scored the learning 10 points, 2 scored 9 points, and 1 scored 8 points. In response to the question, “Do you like using mnemonics in class?” Students were overwhelmingly positive, with all students writing that they enjoyed using mnemonics. The teacher also made her reflections on mnemonic instructional teaching. She suggested that two critical elements to this instruction are sufficient repetition and the use of practice-application activities.

Heron (1992) carried out a study by using the “FIRST Letter Mnemonic Strategy” on the science test grades and attitude toward science of fifth grade students in a regular classroom. He applied acrostic mnemonic by using the alphabet letters of the word “FIRST” to help learners shape information into a form that is easily remembered: **F**orm a word; **I**nsert a letter; **R**earrange the letters; **S**hape a sentence; **T**ry combinations.

In this study, 9 students with disabilities (4 students as the control group and 5

students as the treatment group) were assigned on the basis of gender, IQ, memory retention and science class test scores. The control group consists of 20 typical students and 4 children with learning disabilities. The treatment group had 20 typical students and 5 children with learning disabilities. The teachers of the resource room and the regular science class collaborated to identify concepts and to outline the mnemonic strategy.

The treatment group received training in the use of the “FIRST Letter Mnemonic Strategy” for eight weeks. During the training period, they learned to locate word lists in the text, write out the words, and create mnemonic devices according to the “FIRST Letter Strategy”. Upon mastery of the technique, the students applied the strategies to the target science concepts. However, before the treatment, baseline scores were established by averaging science test scores. After treatment, a post-treatment test was given to the treatment group and the result showed an increase in test scores across all students in the treatment group. On the other hand, there was no training given to the control group and their test scores decreased slightly. In conclusion, the children in the treatment group self-reported (a) satisfaction with the “FIRST Letter Strategy”, (b) enjoying science more since learning the strategy, and (c) intentions to continue using the strategy.

To conclude, according to Atkinson and Shiffrin (1968), people learn and

remember things through sensory memory, short term memory, and long term memory.

With visual, audio, and tactual sensory stimuli, despite the fact that people can remember information, the information can only be kept for a short period of time.

In order to improve the effectiveness of retrieved information stored in our memory, people use chunking and rehearsal to keep information for an increased duration.

However, information stored in short term memory can only be kept for a limited period of time; thus, storing information in long term memory is more desirable for

future retrieval. Then, mnemonics can be used for effective long term memory

because using mnemonics is pairing something memorable with new information

(Higbee & Kuniyama, 1985). Once the linkage is created, the information can be

kept for long term memory. Previous studies (Heron, 1992; Carney & Levin, 2000;

Levin, McCormick, Miller, Berry & Pressley, 1982, Fulk, Mastropieri, & Scruggs,

1992) have shown the effectiveness of using mnemonics to enhance memory, but

most of the studies were conducted with students with disabilities. As a result, this

gap from previous related studies gave rise to this present research: for general

students.

## CHAPTER III

### Methodology or Procedures

#### 3.1 Purpose

In view of the rote memory which has been prevalently used as a method of instruction in Taiwan for decades, and with increasing findings from memory enhancing (mnemonics) research, this study aimed to answer the research questions posed below:

A.) Will students' scores on a vocabulary performance test differ before or after receiving training in MEVLSI?

Ho- Training in MEVLSI will not significantly affect students' performance on a researcher-made vocabulary achievement test.

B.) How can a school teacher effectively apply the MEVLSI to explain vocabulary items to ESL/EFL students during the teaching program?

C.) From reports, how did a user rate the effectiveness of the newly learned MEVLSI?

#### 3.2 Participants of the Study

##### A. Control and Treatment Participants

For the quantitative research, students participating in this study belonged to two classes of school students who were taking after school English program in a cram school in Hsin-Chuan City area. Classes of similar proficiency levels were

conveniently chosen as samples from a grand total of 50 students in the school. Ten students were considered inappropriate because of their very high proficiency level. Thus, a total of  $N=40$  students of similar proficiency levels were chosen to participate. Although these were samples of convenience, the 40 students were further randomly assigned to two groups: control group and experimental group. The number of students (40 students) were divided into Group A (control group), and Group B (experimental group), each consisting of 20 students. All subjects shared a similar social and education background. Table 1 shows the demographic distribution of the 2 groups.

**Table 1 Demographic Table of Participants**

Group	Gender	Age Range	Total Participants
A	Male	12 to 15	$n = 7$
	Female	10 to 15	$n = 13$
B	Male	10 to 15	$n = 10$
	Female	13 to 15	$n = 10$
			$N = 40$

## B. Case Interviewees

The qualitative research was conducted from December, 2005 to January, 2006. The research site chosen for this study was the practical English class at a cram school in Hsin-Chuan City area. The participants of this study were one teacher, one 4<sup>th</sup> grade student, and his father. The teacher has taught English for two years. The 4<sup>th</sup>

grade student, aged 11, was chosen out of the fifty participants from an English class from a cram school. In order to gain more information about retention and motivation, the student's father was also selected as one of the interviewees for this study.

### 3.3 Research Design

This study employed both quantitative and qualitative approaches.

#### A. Quantitative Approach

##### a. Pilot Validation

The measure used for the quantitative approach was a researcher-made test. Face validation of the multiple choice test was done by three doctoral-level professors of *ESL and Translation* of Ming Chuan University. Each of the three professors made comments for evaluation and suggested amendments which were carried out in the final test form. Furthermore, a pilot test-retest validation was done during the period of fifth to twentieth of December, 2005. The following tables (Tables 2 & 3) show the pilot test-retest validation data.

**Table 2 Paired Sample Correlation of Pilot Test**

	<i>N</i>	Correlation	Sig.
Pair 1 test_scores – retest_scores	7	.948	.001

**Table 3 Pilot Test-Retest Scores of Paired Sample Test**

Paired Differences					t	df	Sig.(2-Tailed)
Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
			Lower	Higher			
-1.42857	6.26783	2.36902	-7.22535	4.36821	-.603	6	.569

From Table 2 above, one can see that the two scores (test-retest) were highly correlated. From Table 3, at  $p < 0.05$ , there was no significant difference between pilot test and retest score of the teacher-made instrument. Thus, the teacher-made instrument used here may be deemed valid for use in this study.

### **b. Actual Conduct of Experiments**

After the pilot study, the actual procedure and experiment of this method involved a pretest and a posttest. Using the piloted and validated test, students were pre-tested on December 25, 2005. Then actual experiment was carried out from December 28, 2005 to January 11, 2006. Group A (control group) was instructed under the rote conditions (using TVTM, refer to Appendix A) and group B (experimental group) was instructed under the experimental conditions (using MEVLSI, refer to Appendix A).

### **c. Experimental and Non Experimental Groups**

Traditional vocabulary learning method (TVLM) mainly referred to grammar

translation method as defined by Richard & Rodgers (1986). In Group A, the control group:  $n=20$ , was taught by using the traditional vocabulary teaching method when introducing all the words. In group B, the participants were taught a memory enhancing method, MEVLSI. Table 4 below shows the comparison of methodologies between the control group (TVTM) and the experimental group (MEVLSI).

**Table 4 A Comparison of Teaching Approach for Group A and B as Applied in this Study**

Group A, Control Group	Group B, Experimental Group
<i>n=20</i>	<i>n=20</i>
TVTM (traditional vocabulary teaching method) which includes the followings: a) Pronunciation modeling b) Drilling c) English to Chinese translation d) Demonstration of simple sentence e) Rote memory	MEVLSI (memory enhancing method) which includes the followings: a) Phonics b) Pronunciation modeling c) Drilling d) English to Chinese translation e) Word grouping f) Syllabication g) Back-drill h) Keyword i) Sentence plus definition explanation

All students were given a posttest after the experiment on January 15, 2006.

After that, a statistical data analysis was used to evaluate the results.

### **B. Qualitative Approach**

The qualitative approach involved interviews of an English teacher, a male student and a father. The interviews were tape recorded and transcribed. Later, the

transcriptions were analyzed. The transcriptions for the interviews were cross checked with the interviewees to confirm the reliability. For inclusion here, the content of the interviews were transcribed from Chinese to English although all interviews were held in Chinese.

### **3.4 Case Interviews**

A.) An English teacher who has never received any English teaching training prior to this teaching was chosen as one of the subjects. Since she started her teaching as an English teacher, she was trained and instructed to use the memory enhancing strategy. This English teacher was interviewed for fifteen minutes. Seven questions, mainly concerning about her teaching techniques and personal opinions towards students' responses were asked (See Appendix C).

B.) An interview was also carried out with a student from the cram school. He was chosen as one of the subjects because he had studied in another cram school using the traditional teaching method with much anxiety. Fourteen questions were asked mainly concerning about his feeling towards his learning of English (See Appendix E).

C.) Lastly, the father of the student was interviewed regarding the student's attitude towards English learning (See Appendix F). This father was chosen as one of the subjects because he is the father of the student I mentioned in "B" above and he is

regarded as the witness of his son's learning process. This father had moved his son to the Samuel cram school because the child was not performing well at the previous school.

### **3.5 Data Analyses**

Both quantitative and qualitative analyses were used in this study.

#### **A. Quantitative Approach**

These intact groups of subjects were used in this study. Therefore, an analysis of variance (ANOVA) and a t test procedures were conducted to test the null hypothesis. Two-tailed test was set at significant level of  $p < 0.5$ .

#### **B. Qualitative Approach**

The data for the qualitative approach collected from the interviews was continuously analyzed. Protocol questions were guided by 3 factors: 1.) using MEVLSI, 2.) effectiveness of teachers' application of MEVLSI, and, 3.) effects of MEVLSI. The transcripts were selectively analyzed following Long & Sato's (1983) suggestion that we should only include data that were relevant to our three guides in analyzing the transcribed text and content of the interviews.

## CHAPTER IV

### Results and Discussion

The purpose of this study was to investigate if students' scores on a vocabulary performance test differ before or after receiving training in MEVLSI. A pre-post test design was done to test the null hypothesis. Furthermore, to probe into the users' opinions about the MEVLSI, three case interviews were held. Results of these two methods were presented in this chapter. Implications of the results are also discussed.

#### 4.1 Quantitative Approach: Pretest-Post Test Findings

A pretest was given to all the 40 subjects 3 days before the actual experiment.

Table 5 and 6 below shows the descriptive and inferential statistical data of pretest scores.

**Table 5 Descriptive & Inferential of Cg Pretest Scores**

TVTM Control Group	Test Value = 0							
	t	df	Sig. (2-tailed)	Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
							Lower	Upper
11.980	19	.000	37.25000	13.90522	3.10930	30.7422	43.7578	

**Table 6 Descriptive & Inferential of Eg Pretest Scores**

MEVLSI Experimental Group	Test Value = 0							
	t	df	Sig. (2-tailed)	Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
							Lower	Upper
B	17.156	19	.000	61.25000	15.96666	3.57025	53.7774	68.7226

In Tables 5 and 6, we can see that the t values ( $df = 19$ ),  $p = < .05$ , obtained were 11.98 and 17.156. From the onset, Group B (experimental group) in the pretest obtained higher scores than Group A (control group). One may notice that the mean differences of Group A and B at the pretest level differ, i.e., B started with a higher mean difference (at  $se = 3.10$ ).

All students of both groups, Group A (control group), and Group B (experimental group) were given a vocabulary achievement test right after the end of the two-week teaching program. Tables 7 and 8 below show the posttest mean scores of the descriptive and inferential statistics for the vocabulary achievement test of each of the two groups.

**Table 7 Descriptive & Inferential of Cg Posttest Scores**

TVTM Control Group	Test Value = 0							
	t	df	Sig. (2-tailed)	Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
							Lower	Upper
	13.867	19	.000	54.75000	17.65719	3.94827	46.4862	68.7226

In Table 7, we can see that the t values ( $df = 19$ ),  $p = < .05$ , obtained was

13.867.

**Table 8 Descriptive & Inferential of Eg Posttest Scores**

MEVLSI Experimental Group	Test Value = 0							
	t	df	Sig. (2-tailed)	Mean Difference	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference	
							Lower	Upper
	29.784	19	.000	88.50000	13.28830	2.97135	82.2809	63.0138

In Table 8, we can see that the t values ( $df = 19$ ),  $p = < .05$ , obtained was 29.784. Lastly, pretest and posttest scores of each group were compared to determine performance of both groups before and after the experiment.

A paired samples test data analysis is shown in Tables 9 and 10. Pretest and posttest scores of Groups A & B differed significantly. Thus, the null hypothesis was rejected and it is concluded that students' scores (Group B) on vocabulary performance test differed before and after receiving MEVLSI. As well, scores differed significantly for students (Group A) who did not train in MEVLSI. Thus, MEVLSI might be the factor that influence students' performance.

**Table 9 Cg Paired Samples Test**

Group	Paired Differences					t
	Mean	St. Dev.	St. Error Mean	95% Confidence Interval of the difference		
				Lower	Upper	
A-pretest-posttest	-27.25000	10.57243	2.36407	-32.19805	-22.30195	-11.527

**Table 10 Eg Paired Samples Test**

Group	Paired Differences					t
	Mean	St. Dev.	St. Error Mean	95% Confidence Interval of the difference		
				Lower	Upper	
B-pretest-posttest	-17.50000	13.71707	3.06723	-23.91978	-11.08022	-5.705

A further analysis was done to answer the question: “Do ESL/EFL students who receive MEVLSI training achieve higher scores on the vocabulary achievement test than those who do not receive MEVLSI?” I utilized an independent sample one-way ANOVA to test the mean differences among the two groups. Table 11 below provides the results.

**Table 11 Results of One-way ANOVA on Vocabulary Achievement Test**

	Sum of Square	df	Mean Square	F	Sig.
Between Groups	27163.438	3	9054.479	38.668	.000
Within Groups	17796.250	76	234.161		
Total	44959.688	79			

This Table indicates that there was a significant difference in the mean scores of the two groups ( $p < .05$ , sig. 0.000). Therefore, the results rejected the null hypothesis. Thus, training in the MEVLSI showed significant differences from scores of non training although both groups differed in pre and post test results. One may, tentatively state, however, that training in MEVLSI showed more gains than non training.

## 4.2 Qualitative Approach: Interview Findings

Three interviews were done in this study to follow up the quantitative data. Results of the three interviews, (a.) a female teacher, b.) a male student, c.) a father are presented herein. The findings are discussed and grouped according to three categories: a) Using MEVLSI, b) Effectiveness of teachers' application of MEVLSI, and, c) Effects of MEVLSI. (See Appendices D, E, & F for the translation and actual interview protocol)

### **Category one – *Using MEVLSI***

#### **a. Interview of the Teacher**

Results of the interview showed that the teacher, who was trained under the MEVLSI teaching method and has been teaching English in this cram school for about 2 years, acknowledged she used MEVLSI to teach in her class. When the interviewer asked her if she used any kinds of teaching strategy, the teacher answered that she syllabicated the vocabulary, used phonics and applied back-drill pronunciation method.

#### **b. Interview of the Student**

Moreover, in order to know how the student interviewee previously learned his English vocabulary, the interviewer asked him to describe his previous way of memorizing English word. In his own words, the student mentioned that he did not

syllabicate the words. Instead, prior to MEVLSI training, he did repetitive “rote memorizing (rotation)”. To further investigate if the student interviewee used MEVLSI in learning his English vocabulary at present, the student interviewee replied that he now used syllabication to memorize English vocabulary. However, to assure that the student interviewee grasped the concept of syllabication, the interviewer requested him to explain clearly. The student interviewee reacted that, “For example, the word “classroom” has two syllables. In his words:

*“I can memorize “class” as a word and “room” is another word to remember”. (Note: All transcriptions here are translated from Chinese)*

### **c. Interview of the Father**

The third interviewee, the father who was concerned that his son was anxious to learn English, mentioned that his son used MEVLSI to remember English words now. The father also affirmed that his son previously used the rote method to tackle vocabulary words. But, now, after MEVLSI training, the father explained:

*“My son uses syllable pronunciation (syllabication) to spell out the English words and likes to come to English class now”. (All transcriptions translated from Chinese)*

Therefore, from the interviews, and analysis in category one, the results showed that the teacher has applied MEVLSI in teaching her English class. As well, both the student and father confirmed that the student interviewee has adapted and applied MEVLSI in the student’s English vocabulary learning.

### **Category two - *Effectiveness of Teacher's Application of MEVLSI***

The second category addressed the effectiveness of teacher's application of MEVLSI in classroom settings. The teacher mentioned that she had effectively applied MEVLSI in her English class and was confident to continue using it. However, to make sure if MEVLSI is applicable to all ages of students, the teacher said so, as long as students paid attention and followed the program, students would improve their performance on English vocabulary acquisition. In other words, MEVLSI is one of the main things that motivated her. When asked if MEVLSI would be useful to students' acquisition of English vocabulary, the teacher answered,

*“In the beginning, the students will not show much significance, but after some times, students started to remember English words easily”.*

From the excerpt, we can see that the teacher has effectively applied MEVLSI to the students. In order for the interviewer to further confirm if MEVLSI also motivated the student, the student interviewee answered in true affirmative. Besides, this was confirmed by the father.

Therefore, from the interviews, and the analysis in category two, the results confirmed that MEVLSI has effectively motivated both the teacher and the student, but from different perspectives.

### **Category three - Effects of MEVLSI**

The third category explored if MEVLSI has strengthened long-term memory in students' skill of acquisition of English vocabulary. The teacher confirmed that, after using MEVLSI, students can remember the vocabulary, for example,

*“Students can remember for a long time because they knew the techniques of pronouncing and remembering the word. Once they saw the word, automatically they would be able to pronounce the word by themselves. I believe it is like this. It is a long lasting technique”.*

Furthermore, the interviewer also asked the teacher if she encountered any difficulty when applying MEVLSI to facilitate students' long-term memory.

The teacher stated:

*“Some of the problems students in the beginning stage have are lack of organizing abilities. Teachers should help them to induce the process of pronunciation especially for those words that have similar sounds in order to make their thought more systematic and be able to classify the vocabulary.”*

To further identify if MEVLSI helped the student to retain and retrieve the vocabulary that he acquired, the student stated that because he can now easily retrieve the words, he has improved his achievement through tests. Before learning the MEVLSI, the student relied on cramming habits which could possibly account for his previous poor performance.

The father also confirmed that his son can now easily retrieve previously learned words with more accuracy. To make the notion more realistic, the father

made a contrast:

*“Before, after the English class, my son could not remember the English vocabulary that the teacher taught. Neither could he read to me the passages of the book. Now, he can read to me anytime I request. On the other hand, he can explain to me the meaning of the passages that he read to me, too. Most important of all, he got high scores in his primary school English test which he repelled before. That is why I confirmed that my son can remember the English vocabulary for a long time now”.*

Consequently, from the interviews, and analysis in category three, the results showed that MEVLSI has caused long-term memory effects on students’ vocabulary acquisition.

### **To Summarize**

The main findings of these interviews are as follows. First, the teacher had successfully and enthusiastically used mnemonic devices to teach English. The results showed that teachers can effectively teach MEVLSI in class to help students to self-generate strategies to acquire vocabulary. The student is able to use phonics, and syllabication to help himself to remember the English vocabulary words which he could not do before and, thus reported an improvement in his English proficiency, and, moreover, his motivations to learn English as a second language. Another finding from the interviews was that rote memorizing approach hinders students’ acquisition of the target language.

Hence, from the interviews, the results showed that MEVLSI may cause

long-term memory effects on students' vocabulary acquisition.



## CHAPTER V

### Discussion

This chapter aims to summarize the major findings of the experimental study and give some pedagogical implications. Some limitations and suggestions for future research are also mentioned in this chapter. The summaries of the two research methods, quantitative and qualitative, are as follows:

#### 5.1 Conclusions

The major findings of the quantitative method of the study are as follows. First of all, although both groups A and B showed gains from pre to post tests, one can assume that the experimental group showed stronger gains. Even so, the null hypothesis was rejected. This study's results are congruent with that of other studies (Baumann et al., 2002; Rodriguez & Sadoski, 2002; Rosenbaum, 2001). All these related studies support the beneficial effects of memory enhancing strategy-based vocabulary instruction on vocabulary learning. The application of MEVLSI in the experimental group provided learners the opportunity to produce significantly higher scores than the control group in the vocabulary achievement test.

Secondly, pronunciation modeling, drilling, and translation are considered to be the most commonly used techniques in ESL/EFL classes in Taiwan (Huang, 1999). This study showed that the application of MEVLSI, which provides training to enrich

these common practices in ESL/EFL classroom setting, led students to more active participation. As a result, it was shown that MEVLSI strategy helps teachers make vocabulary teaching as well as vocabulary learning more animated and interesting rather than a mechanical and dull process.

Thirdly, the comparison among the two groups showed that certain kinds of word knowledge will affect the performance of different groups. In this present study, students in the control group were observed to employ phonological knowledge (i.e., pronunciation modeling and drilling) and a stereotypical system of semantic knowledge (i.e., English to Chinese translation, demonstration of simple sentence and rote memory). For phonological knowledge, they employed only 2: pronunciation modeling, and drilling. For semantic knowledge, they mostly applied English to Chinese translation, demonstration of simple sentence and rote memory. On the other hand, for the experimental group, this repertoire was broadened to include phonics, word grouping, syllabication and back-drill for phonological knowledge. In addition, semantic knowledge included sentence plus definition explanation. Furthermore, mnemonic strategies, specifically the keyword method, and collocations were introduced and trained. By virtue of the training of MEVLSI, the broadened repertoire enriched the composition and text of the vocabulary learning instruction. In other words, this enrichment assists students to strengthen their lexical use of

vocabulary in content.

Fourthly, the results of the interviews in category one showed that the teacher successfully used MEVLSI in the classroom. At the same time, the student also adopted MEVLSI to self generate learning strategies in his vocabulary acquisition. Moreover, after using MEVLSI, the student obtained higher English test scores in his school English tests. From the interview results in category two, the teacher was confident in applying MEVLSI (phonics, syllabication, back-drill pronunciation, and keyword) in her classroom because she discovered that MEVLSI is effective to students. An important effect was expressed by the student during the interview. With more success in his present performance and with his acquired self-confidence in tackling hard and new vocabulary words using the MEVLSI, the student indicated a high level of motivation to attend and learn the English classes. In other words, MEVLSI motivated both the teacher and the student. In this present research, integrating both quantitative and qualitative perspectives, MEVLSI not only triggered the individual novice teacher and the student interviewee's instrumental motivation but also other students in the classroom because of their active participation. Thus, it answered the second research question posed in Chapter One.

Fifthly, the interviewers affirmed that using the MEVLSI leads to better memory storage, and, especially, retrieval. Terrace (2002) defined chunking, a kind

of memory enhancing strategy, as a device of retrieval of information from our memory. It is, then, conclusive that a memory enhancing strategy such as the MEVLSI may lead to long-term memory of information and retrieval. According to the Atkinson and Shiffrin's (1968) model of human memory processes, information, in order to be stored in long term memory for successful future retrieval, must be subject to such processes as elaboration and maintenance. Elaboration is considered more effective. As an elaborative strategy, the MELVSI can be considered as one method to enhance this storage and retrieval. That means MEVLSI leads to long-term memory of information storage and the information that could be retrieved for later use. Thus, the results answered the third research question posed in Chapter One.

As a strategy, MEVLSI can be taught to Taiwanese ESL students.

Considering the need to have to remember a long list of vocabulary words, after solely for the purpose of test-taking, this strategy can truly be an effective help to both learners and teachers. Hence, from the above mentioned effects of MEVLSI on vocabulary learning and the results of this experimental study, the discussion here is classified into two major directions. The first one is the application of MEVLSI to ESL/EFL students on vocabulary learning. The second one is mainly about the training of teachers on how to apply those strategies on their teaching.

## **Application of MEVLSI to ESL/EFL Students on Vocabulary Learning**

Pronunciation modeling and translation were historically considered as typical vocabulary teaching procedures (TVTM) in ESL/EFL vocabulary learning.

However, as inferred from the results, those teachers who adopt this type of rote memory vocabulary teaching technique can not effectively serve as learning facilitators because they serve as feeders of knowledge, imposing burdens on students without teaching students the required skills when necessary (Chang, 2004). As we can see, Group A, instructed by TVTM did not learn sentence plus definition explanation (collocation) of a word, and were not able to retain sufficiently learned vocabulary to assist their English usage. This method, then, did not follow what Gu (2003) stated. For, according to Gu (2003), language learners should generate various learning strategies to facilitate the task of vocabulary learning. At the end of this two-week experimental study, without any intervention, all the subjects in the control group still continued the traditional vocabulary learning habit of rote-memorizing vast amounts of English new words. Thus, they did not show as high scores in the achievement test than those who used MELVSI. As a result, it was found that students receiving MEVLSI treatments obtained higher scores on the vocabulary achievement test than those instructed by the rote memory way. Several possible factors contributed to this result. First of all, the word grouping and

back-drill pronunciation approaches used in Group B engaged the verbal-visual word association strategy. Wolfe (2001) explained that visuals are powerful retention aids to facilitate learners' vocabulary acquisition because they can make their own meaningful linkage between the vocabulary and the visuals. The effectiveness of visual aids has been also validated by Hopkins and Bean (1999). Secondly, all subjects in Group B were also instructed to employ sentence plus definition approach. In other words, they were applying the collocation-derivation strategy of a word. Birch (2002) and Hill (2003) emphasized that these are two effective features of knowing a word.

### **Training of teachers on how to apply those memory enhancing strategies**

Some recent researchers (Schmitt, 2000; Read 2000; Liu & Shaw, 2001) acknowledged the complication of word learning. To learn a word, we have to know the pronunciation, the meaning, the definition, the term and the correct use in sentence. These complications can be reduced using MEVLSI skills. Thus, teachers need professional knowledge and skills to successfully apply MEVLSI in classroom settings.

In comparison with the control group, the teacher who applied MEVLSI was likely to equip the subjects of Group B with several memory enhancing strategies. In return, the learners were able to more effectively attach approach learning of new

vocabulary words. That means, the instructor furnished the experimental group students with additional vocabulary learning skills. In other words, the application and training of MEVLSI complied with Banikowski's (1999) suggestion: the success of processing information should include the ease of retrieving previously learned information. According to Banikowski (1999), one way of doing this would be to teach collocation, a skill emphasized in the MEVLSI.

For ESL/EFL learners in Taiwan, vocabulary reviewing is considered as the starting portion of English reading instruction. This study presented evidence that MEVLSI enhanced students' acquisition of vocabulary. Therefore, it is convincing that the application of MEVLSI is worthy of being put into practice extensively because it not only strengthens one's vocabulary store but also reduce communication frustration among ESL/EFL learners.

### **Implications**

This study proved that MEVLSI not only enhanced students' acquisition of English vocabulary but also increased students' motivation to learn the target language. Furthermore, this study also suggested that teachers can effectively use MEVLSI in their teaching program. Thus, the results obtained from the study can help English teachers or curriculum designers to generate a more effective vocabulary teaching program.

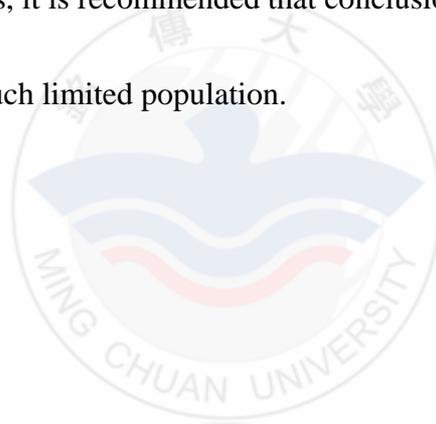
First, this present study showed that memory enhancing vocabulary learning strategy instruction (MEVLSI) appears to be effective in improving students' vocabulary learning. However, the MEVLSI is an adopted creation of this researcher-student and this study is the first attempt to evaluate its effectiveness. Thus, additional researches should be conducted to investigate ESL/EFL students' vocabulary acquisition in classroom settings, and to further test the MEVLSI's effectiveness. Second, most ESL/EFL students in Taiwan learn English vocabulary and expressions verbatim. As a result, they have a hard time putting them in context. This kind of approach may hinder the effects of students' vocabulary learning. Therefore, it is important that more empirical studies should be undertaken to discover appropriate and effective vocabulary teaching strategies so that teachers can use them to enhance students' vocabulary acquisition. Third, the fundamental English teaching in Taiwan is conducted under the rote memory process. Thus, ESL/EFL classes spend time on doing mechanical drills and repetitive practices. This repetitive process may cause much anxiety and boredom. Obviously, it is necessary that more practical and innovative studies should be carried out to examine efficient vocabulary teaching strategies for teachers to facilitate meaningful vocabulary teaching. Fourth, this study showed that students using MEVLSI acquire the target language easier than without the use of MEVLSI. Therefore, it is

worthwhile investigating if subjects who adopt more kinds of vocabulary learning strategies may outperform those applying comparatively fewer strategies. Fifth, motivation and language proficiency of students may affect the results of the study. Hence, a cross-grade study to further investigate the effects of MEVLSI on learners with different language proficiencies might be an interesting area for future researchers.

### **Limitations of the Study**

There were several limitations in this experimental study. Firstly, initially the results of the pretest of the experimental group were higher than that of the control group. This was so despite the fact that the subjects conveniently drawn were randomly grouped. Secondly, the instrument used in this study to measure pre and post test results was researcher-made. Despite the fact that face validation and reliability procedures were strictly followed, one must still be careful about generalizing findings based on such a test. Thirdly, most ESL/EFL students perform poorly in their vocabulary acquisition because they lacked appropriate techniques to generate vocabulary learning strategies. Limitedly, training these strategies took only two weeks for the purpose of this study. More time could have been spent on this training. Fourthly, different students have different learning habits as well as different factors and levels of motivations. More attention should be paid to

individual differences. Fifthly, as mentioned previously, MEVLSI may be inapplicable to teaching abstract vocabulary words. In this study, no focus was made on this observation. Therefore, innovative or future studies can be done in this area in order to make this scope more comprehensive. Sixthly, the size of the subjects which was used in this experimental study was small. It reflected a very tiny portion of the population of the ESL/EFL students in Taiwan. And, from the academic performance perspective, the subjects in this study were regarded as underachieving ESL/EFL learners. Thus, it is recommended that conclusions generated from this study be generalized to such limited population.



## References

- Asselin, M. (2002). Vocabulary instruction. *Teacher Librarian*, 29, 57-59.
- Atkinson, R. C. (1975) Mnemonics in Second-Language Learning. *American Psychologist*. 821-828
- Atkinson, R. C., & Shiffrin, R. M. (1968). Human Memory: A proposed system and its control process. In K. W. Spence and J. T. Spence (Eds), *The Psychology of Learning and Motivation: Advances in Research and Theory* (vol. 2, pp. 89-195). New York: Academic Press.
- Ausubel, David A. (1963). Cognitive structure and the facilitation of meaningful verbal learning. *Journal of Teacher Education* 14: 217-221.
- Ausubel, David A. (1968). Educational Psychology: A cognitive view. New York: Holt, Rinehart & Winston.
- Ausubel, David A., Novak, J. D., & Hanesian H. (1978). Educational Psychology: A cognitive view (2<sup>nd</sup> ed.). New York: Holt, Rinehart and Winston.
- Banikowski, A. K. (1999). Strategies to enhance memory based on brain-research. *Focus on Exceptional Children*, 32, 1-16.
- Baumann, J. F., Edwards, E. C., Front, G., Tereshinski, C. A., Tereshinski, C. A., Kameneenui, E. J., & Oleinik, S. (2002). Teaching morphemic and contextual analysis to fifth-grade students. *Reading Research Quarterly*, 37, 150-176.
- Birch, B. M. (2002). English L2 reading: getting to the bottom. Mahwah, NJ: Lawrence Erlbaum associates.
- Bolich, B. and McLaughlin T. F. (2001). The Use of Mnemonic Strategies As Instructional Tools For Children With Learning Disabilities. *International Journal of Special Education*, 2001, Vol. 16, No. 2.
- Bower, B. (1999). Motor cortex helps drive serial memory. *Science News*, 155

(11), 165.

- Brigham, R. & Brigham, M. (2005). Mnemonic Instruction. Retrieved May 28, 2006 from [http://www.teachingld.org/ld\\_resources/alerts/5.htm](http://www.teachingld.org/ld_resources/alerts/5.htm)
- Carter, T., Hardy, C. A., & Hardy, J. C. (2001). Latin vocabulary acquisition: An experiment using information-processing techniques of chunking and imagery. *Journal of Instructional Psychology*, 28 (4), 225-228.
- Chamberlain, D. B. (1990). The expanding boundaries of memory. *ReVision*, 12, 11-20.
- Chang S. F. (2004). A Brain-compatible Vocabulary Teaching Strategy Applied to Underachieving EFL Learners. Unpublished master's thesis, Ming Chuan University, Taoyuan, Taiwan.
- Carney, R. N., & Levin, J. R. (2000). Mnemonic instruction with a focus on transfer. *Journal of Educational Psychology*, 92(4), 783-790.
- Case, R. (1984). The Process of Stage Transition: A neo-Piagetian view. In R. J. Staneberg (Ed.), *Mechanisms of cognitive development* (pp. 19-44). New York: W.H. Freeman.
- Cohen, A. D. (1994). *Assessing language ability in the classroom* (2<sup>nd</sup> ed.). Boston, MA: Heinle & Heinle Publishers.
- Conduis, M. M., Marshall, K. J., & Miller, S. R. (1986). Effects of the keyword mnemonic strategy on vocabulary acquisition and maintenance by learning disabled children. *Journal of Learning Disabilities*, 19, 609-613.
- Craik, F. J. M., and Lockhart, R. S. (1972). Levels of Processing: A Reply to Eysenck. *British Journal of Psychology*. 69(2), 171-175.
- Day, R. & Bamford, J. (1998). *Extensive reading in the second language classroom*. Cambridge: Cambridge University Press.
- Fulk, B. M., Mastropieri, M. A., & Scruggs, T. E. (1992). Mnemonic generalization

- training with learning disabled adolescents. *Learning Disabilities Research*, 7, 2-10.
- Gu, P. Y. (2003). Fine brush and freehand: the vocabulary-learning art of two successful Chinese EFL learners. *TESOL QUARTERLY*, 37 (1), 73-104.
- Henson, K. T., & Eller, B. F. (1999). *Educational Psychology for Effective Teaching*. Wadsworth Publishing Company.
- Heron, S. (1992). The effects of the first letter mnemonic strategy on students with and without learning disabilities. *Learning Disabilities Forum*, 18(2), 20-21.
- Higbee, K. L., & Kunihara, S. (1985). Cross-culture application of Yodai mnemonics in education. *Educational Psychology*, 20, 57-64.
- Hill, J. (2003). The place of collocation in the syllabus. *Selected papers from the twelfth international symposium on English teaching and learning* (81-86). Taipei: Crane Publishing Co., Ltd.
- Hopkins, G. & Bean, T. W. (1999). Vocabulary learning with the verbal-visual word association strategy in a native American community. *Journal of Adolescent & Adult Literacy*, 42, 274-281.
- Hsu, W. H. (2003). Translation research into pedagogical practice: recommendations for adult ESL/EFL reading instruction. *The Proceedings of 2003 Conference and Workshop on TEFL and Applied Linguistic* (157-163). Taipei: Crane Publishing Co., Ltd.
- Huang, W. T. (1999). Integrated vocabulary teaching in a senior high school: an empirical study. *The proceedings of the Eighth International Symposium on English Teaching* (385-393). Taipei: Crane Publishing Co., Ltd.
- Irish, C. (2002). Using Peg- and Keyword Mnemonics and Computer-Assisted Instruction to Enhance Basic Multiplication Performance in Elementary Students with Learning and Cognitive Disabilities. *Journal of Special*

*Education Technology*, vol. 17, number 1, winter 2002.

- Kavale, K., & Forness, S. (1986). *The science of learning disabilities*. San Diego: College Hill Press.
- King-Sears, M. E., Mercer, C. D., & Sindelar, P. T. (1992). Toward independence with keyword mnemonics: A strategy for science vocabulary instruction. *Remedial & Special Education*, 13(4), 22-33.
- Klazky, R. L. (1984). *Semantic factors in cognition*. Hillsdale, N J: Lawrence Erlbaum Associates.
- Koolstra, C. M., & Beentjes, J. W. (1999). Children's vocabulary acquisition in a foreign language through watching subtitled television programs at home. *ETR & D*, 47 (1), 51-60.
- Levin, J. R. (1983). Pictorial strategies for school learning. Practical illustrations. In M. Press & J. R. Levin (Eds), *Cognitive strategy research: Educational illustrations* (pp. 213-237). New York: Springer-Verlag.
- Levin, J. R., McCormick, C. B., Miller, G. E., Berry, J. K. & Pressley, M. (1982). Mnemonic versus nonmnemonic vocabulary-learning strategies for children. *American Educational Research Journal*, 19, 121-36. Cited from Memory Key, September 18, 2005.
- Levin, J. R., Shriberg, L. K., Miller, G. E., McCormick, C. B. & Levin, B. B. (1980). The keyword method in the classroom: How to remember the states and their capitals. *The Elementary School Journal*, 82, 185-91. Cited from Memory Key, September 18, 2005.
- Liu, T. K., & Shaw, M. (2001). Investigating learner vocabulary: a possible approach to looking at EFL/ESL learners. *IRAL*, 39 (3), 171-194.
- Long, M. H., & Sato, C. (1983). Classroom foreigner talk discourse: forms and functions of teachers questions. In Seliger, M. W., & Long, M. H. (eds),

- Classroom – oriented research on second language acquisition (pp. 226-85).  
Rowley, Mass.: Newbury House.
- Mastropieri, M. A., & Scruggs, T. E. (1990a). The case of for mnemonic instruction:  
From laboratory research to classroom applications. *Journal of Special  
Education, 24*, 7-32.
- Mastropieri, M. A., & Scruggs, T. E. (1990b). Mnemonic instruction for students  
with learning disabilities: What it is and what it does. *Learning Disability  
Quarterly, 13*, 271-280.
- Mastropieri, M. A., Scruggs, T. E., & Fulk, B. M. (1990). Teaching abstract  
vocabulary with the keyword method: Effects on recall and comprehension.  
*Journal of Learning Disabilities, 23*, 92-96.
- Mastropieri, M. A., & Scruggs, T. E. (1991). Teaching students ways to remember:  
Strategies for learning mnemonically. Cambridge, MA: Brookline.
- Mastropieri, M. A., & Scruggs, T. E. (1998). Enhancing school success with  
mnemonic strategies. Learning Disabilities OnLine.  
[http://www.Idonline.org/Id\\_indepth/teaching\\_techniques/mnemonic\\_strategies.  
html](http://www.Idonline.org/Id_indepth/teaching_techniques/mnemonic_strategies.html)
- Mastropieri, M. A., & Scruggs, T. E. (2000). Attention and memory. In the  
inclusive classroom: Strategies for effective instruction. Columbus, OH:  
Prentice Hall/Merrill.
- Mastropieri, M. A., Sweda, J., & Scruggs, T. E. (2000). Putting mnemonic strategies  
to work in an inclusive classroom. *Learning Disabilities Research &  
Practice (Lawrence Erlbaum)*; 2000, vol. 15 Issue 2, p69, 6p.
- Meese, R. L. (1994). Teaching learners with mild disabilities: Integrating research  
and practice. Pacific Grove, CA: Brooks/Cole.
- Miller, G. A. (1956). The magical number seven, plus or minus two: Some limits on

- our capacity for processing information. *Psychological Review*, 63, 81-97.
- Pekins, D. N., & Salomon, G. (1989, January / February). Are Cognitive skills context-bound? *Educational Researchers*, 18, 16~25
- Read, J. (2000). *Assessing Vocabulary*. Cambridge: Cambridge University Press.
- Rhoder, C., & Huerster, P. (2002). Use dictionaries for word learning with caution. *Journal of Adolescent & Adult Literacy*, 45 (8), 730-735.
- Richards, J. C., & Rodgers, T. S. (1986). *Approaches and Method in Language Teaching*. Oxford: Oxford University Press.
- Rodriguez, M., & Sadoski, M. (2000). Effects of rote, context, keyword, and context/keyword methods on retention of vocabulary in EFL classrooms. *Language Learning*, 50, 385-412.
- Rosenbaum, C. (2001). A word map for middle school: a tool for effective vocabulary instruction. *Journal of Adolescent and Adult Literacy*, 45, 44-49.
- Schmitt, N. (2000). *Vocabulary in language teaching*. Cambridge: Cambridge University Press.
- Smith, D. D. (1981). *Teaching the learning disabled*. Englewood Cliffs, NJ: Prentice-Hall.
- Stewart, Laura E. (2003). *The Most Used 2000 words*. Learning Publishing Co., Ltd.
- Sutaria, S. D. (1985). *Specific learning disabilities: Nature and needs*. Springfield, IL: Charles, E Thomas.
- Terrace H.S. (2002). Serial Expertise and the Evolution of Language. In J. H. A. Wray, & F. J. Newmeyer (Ed.), *The Transition of Language* (vol. 64-90). New York, NY: Oxford University Press.
- Touloumtzoglou, J., (1997). *The Keyword Mnemonic in Modern Greek Language Acquisition*. Cited from School of Education: Online Publications,

September 16, 2005.

- Uberti, H. Z., Scruggs, T. E., & Mastropieri, M. A. (2003). Keywords make the difference! Mnemonic instruction in inclusive classrooms. *Teaching Exceptional Children, 10*(3), 56-61
- Wang, C. W., & Yeh, Y. (2001). Effectiveness of vocabulary annotations and learning style on vocabulary learning. *The Proceeding of 2001 International Conference on the Application of English Teaching* (154-166). Taipei: Crane Publishing Co., Ltd.
- Woolfolk, A. E. (1993). *Educational Psychology* (5<sup>th</sup> ed.). Boston, MA: Allyn and Bacon.
- Wolfe, P. (2001). *Brain matters: translating research into classroom practice*. U. S. A.: Association for Supervision and Curriculum Development.
- Yu, C. Y. (1998). Gaining vocabulary incidentally while reading by EFL senior high school students in Taiwan. Unpublished master's thesis, National Kaohsiung Normal University, Kaohsiung, Taiwan.
- Zimbardo, P. G., Weber, A. L., & Johnson R. L. (2003). *Psychology Core Concept*. Boston, MA: Allyn and Bacon.

## Appendix A

### Table 1

#### Sample Lesson Plan 1

<b>Unit 1: Vocabulary</b>	
Experimental Group	Control Group
<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>	<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>
<p><b>Words</b> : report, probably, alien, intense, bothering, advice, owner, championship, personal, dessert.</p>	<p><b>Words</b> : report, probably, alien, intense, bothering, advice, owner, championship, personal, dessert.</p>
<p><b>Class periods:</b> 2 periods, 50 minutes each</p>	<p><b>Class periods:</b> 2 periods, 50 minutes each</p>
<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>	<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into</li> </ol>	<p><b>Teaching Procedures Using TVTM</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into</li> </ol>

<p>Chinese the words listed on the whiteboard to the students (e.g. report=報告, 報導).</p> <p>3. Teach the words using the back-drill pronunciation method (e.g. the word “report” will be taught as, t-ort-port-eport-report). Ask the students to repeat the back-drill method a few times.</p>	<p>Chinese the words listed on the whiteboard to the students (e.g. report=報告, 報導).</p> <p>3. Ask the students to drill the words with Chinese translation.</p>
<p><b>Warming up:</b> 2 minutes to greet the students.</p>	<p><b>Warming up:</b> 2 minutes to greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b> <b>second period: 48 minutes</b></p> <p>1. Underline the syllables of the words listed on the whiteboard with a red marker (e.g. re+por+t). This process is to help the students to remember the spelling of the listed words.</p> <p>2. Instruct the students to</p>	<p><b>Teaching Procedures Using TVTM</b> <b>second period: 48 minutes</b></p> <p>1. Ask the students to drill the words with Chinese translation.</p> <p>2. Ask the students to drill</p>

<p>spell out the words by listening to the syllables of the words accordingly (e.g. re+por+t).</p> <p>3. Associate each listed word with a keyword (e.g. robot for report).</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Explain to the students the different usages and meanings of the words.</p> <p>6. Remind the students to revise the words according to the process at home.</p>	<p>the words with Chinese translation.</p> <p>3. Ask the students to drill the words with Chinese translation.</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Rote the sample vocabulary.</p> <p>6. Remind the students to revise the words according to the process at home.</p>
<p><b>Review/Evaluation:</b></p>	<p><b>Review/Evaluate</b></p>

Table 2

Sample Lesson Plan 2

<b>Unit 2: Vocabulary</b>	
Experimental Group	Control Group
<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>	<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>
<p><b>Words</b> : glide, predict, pillow, tablet, gamble, protect, license, fake, valentine, condolence.</p>	<p><b>Words</b> : glide, predict, pillow, tablet, gamble, protect, license, fake, valentine, condolence.</p>
<p><b>Class periods:</b> 2 periods, 50 minutes each</p>	<p><b>Class periods:</b> 2 periods, 50 minutes each</p>
<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>	<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b> <b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed on the whiteboard to the</li> </ol>	<p><b>Teaching Procedures Using TVTM</b> <b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed on the whiteboard to the</li> </ol>

<p>students (e.g. report=報告, 報導).</p> <p>3. Teach the words using the back-drill pronunciation method (e.g. the word “report” will be taught as, t-ort-port-eport-report). Ask the students to repeat the back-drill method few times.</p>	<p>students (e.g. report=報告, 報導).</p> <p>3. Ask the students to drill the words with Chinese translation.</p>
<p><b>Warming up:</b> 2 minutes to greet the students.</p>	<p><b>Warming up:</b> 2 minutes to greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b> <b>second period: 48 minutes</b></p> <p>1. Underline the syllables of the words listed on the whiteboard with a red marker (e.g. re+por+t). This process is to help the students to remember the spelling of the listed words.</p> <p>2. Instruct the students to spell out the words by listening to the syllables of the words accordingly (e.g. re+por+t).</p>	<p><b>Teaching Procedures Using TVTM</b> <b>second period: 48 minutes</b></p> <p>1. Ask the students to drill the words with Chinese translation.</p> <p>2. Ask the students to drill the words with Chinese translation.</p>

<p>3. Associate each listed word with a keyword (e.g. robot for report).</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Explain to the students the different usages and meanings of the words.</p> <p>6. Remind the students to revise the words according to the process at home.</p>	<p>3. Ask the students to drill the words with Chinese translation.</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Rote the sample vocabulary.</p> <p>6. Remind the students to revise the words according to the process at home.</p>
<p><b>Review/Evaluation:</b></p>	<p><b>Review/Evaluate</b></p>

Table 3

Sample Lesson Plan 3

<b>Unit 3: Vocabulary</b>	
Experimental Group	Control Group
<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>	<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>
<p><b>Words</b> : media, surely, alone, charge, expecting, dessert, medals, concert, grown-up, steer.</p>	<p><b>Words</b> : media, surely, alone, awful, expecting, dessert, medals, concert, grown-up, steer.</p>
<p><b>Class periods:</b> 2 periods, 50 minutes each</p>	<p><b>Class periods:</b> 2 periods, 50 minutes each</p>
<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>	<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed on the</li> </ol>	<p><b>Teaching Procedures Using TVTM</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed on the</li> </ol>

<p>whiteboard to the students (e.g. report=報告,報導).</p> <p>3. Teach the words using the back-drill pronunciation method (e.g. the word “report” will be taught as, t-ort-port-eport-report). Ask the students to repeat the back-drill method few times.</p>	<p>whiteboard to the students (e.g. report=報告,報導).</p> <p>3. Ask the students to drill the words with Chinese translation.</p>
<p><b>Warming up:</b> 2 minutes to greet the students.</p>	<p><b>Warming up:</b> 2 minutes to greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b> <b>second period: 48 minutes</b></p> <p>1. Underline the syllables of the words listed on the whiteboard with a red marker (e.g. re+por+t). This process is to help the students to remember the spelling of the listed words.</p> <p>2. Instruct the students to spell out the words by</p>	<p><b>Teaching Procedures Using TVTM</b> <b>second period: 48 minutes</b></p> <p>1. Ask the students to drill the words with Chinese translation.</p> <p>2. Ask the students to drill the words with Chinese</p>

<p>listening to the syllables of the words accordingly (e.g. re+por+t).</p> <p>3. Associate each listed word with a keyword (e.g. robot for report).</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Explain to the students the different usages and meanings of the words.</p> <p>6. Remind the students to revise the words according to the process at home.</p>	<p>translation.</p> <p>3. Ask the students to drill the words with Chinese translation.</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Rote the sample vocabulary.</p> <p>6. Remind the students to revise the words according to the process at home.</p>
<p><b>Review/Evaluation:</b></p>	<p><b>Review/Evaluate</b></p>

Table 4

Sample Lesson Plan 4

<b>Unit 4: Vocabulary</b>	
Experimental Group	Control Group
<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>	<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>
<p><b>Words</b> : certainly, tiny, wonderful, buddy, trouble, operation, stable, garlic, confuse, satisfy.</p>	<p><b>Words</b> : certainly, tiny, wonderful, buddy, trouble, operation, stable, garlic, confuse, satisfy.</p>
<p><b>Class periods:</b> 2 periods, 50 minutes each</p>	<p><b>Class periods:</b> 2 periods, 50 minutes each</p>
<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>	<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words</li> </ol>	<p><b>Teaching Procedures Using TVTM</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words</li> </ol>

<p>listed on the whiteboard to the students (e.g. report=報告,報導).</p> <p>3. Teach the words using the back-drill pronunciation method (e.g. the word “report” will be taught as, t-ort-port-eport-report). Ask the students to repeat the back-drill method few times.</p>	<p>listed on the whiteboard to the students (e.g. report=報告,報導).</p> <p>3. Ask the students to drill the words with Chinese translation.</p>
<p><b>Warming up:</b> 2 minutes to greet the students.</p>	<p><b>Warming up:</b> 2 minutes to greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b> <b>second period: 48 minutes</b></p> <p>1. Underline the syllables of the words listed on the whiteboard with a red marker (e.g. re+por+t). This process is to help the students to remember the spelling of the listed words.</p> <p>2. Instruct the students to spell out the words by listening to</p>	<p><b>Teaching Procedures Using TVTM</b> <b>second period: 48 minutes</b></p> <p>1. Ask the students to drill the words with Chinese translation.</p> <p>2. Ask the students to drill the words with Chinese</p>

<p>the syllables of the words accordingly (e.g. re+por+t).</p> <p>3. Associate each listed word with a keyword (e.g. robot for report).</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Explain to the students the different usages and meanings of the words.</p> <p>6. Remind the students to revise the words according to the process at home.</p>	<p>translation.</p> <p>3. Ask the students to drill the words with Chinese translation.</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Rote the sample vocabulary.</p> <p>6. Remind the students to revise the words according to the process at home.</p>
<p><b>Review/Evaluation:</b></p>	<p><b>Review/Evaluate</b></p>

Table 5

Sample Lesson Plan 5

<b>Unit 5: Vocabulary</b>	
Experimental Group	Control Group
<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>	<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>
<p><b>Words</b> : incredible, assistant, stretch, return, shadow, jealous, arrow, legend, natural, gentle.</p>	<p><b>Words</b> : incredible, assistant, stretch, return, shadow, jealous, arrow, legend, natural, gentle.</p>
<p><b>Class periods:</b> 2 periods, 50 minutes each</p>	<p><b>Class periods:</b> 2 periods, 50 minutes each</p>
<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>	<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed on</li> </ol>	<p><b>Teaching Procedures Using TVTM</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed</li> </ol>

<p>the whiteboard to the students (e.g. report=報告, 報導).</p> <p>3. Teach the words using the back-drill pronunciation method (e.g. the word “report” will be taught as, t-ort-port-eport-report). Ask the students to repeat the back-drill method few times.</p>	<p>on the whiteboard to the students (e.g. report=報告, 報導).</p> <p>1. Ask the students to drill the words with Chinese translation.</p>
<p><b>Warming up:</b> 2 minutes to greet the students.</p>	<p><b>Warming up:</b> 2 minutes to greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b> <b>second period: 48 minutes</b></p> <p>1. Underline the syllables of the words listed on the whiteboard with a red marker (e.g. re+por+t). This process is to help the students to remember the spelling of the listed words.</p> <p>2. Instruct the students to spell out the words by listening to the syllables of the words</p>	<p><b>Teaching Procedures Using TVTM</b> <b>second period: 48 minutes</b></p> <p>1. Ask the students to drill the words with Chinese translation.</p> <p>2. Ask the students to drill the words with Chinese translation.</p>

<p>accordingly (e.g. re+por+t).</p> <p>3. Associate each listed word with a keyword (e.g. robot for report).</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Explain to the students the different usages and meanings of the words.</p> <p>6. Remind the students to revise the words according to the process at home.</p>	<p>3. Ask the students to drill the words with Chinese translation.</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Rote the sample vocabulary.</p> <p>6. Remind the students to revise the words according to the process at home.</p>
<p><b>Review/Evaluation:</b></p>	<p><b>Review/Evaluate</b></p>

Table 6

Sample Lesson Plan 6

<b>Unit 6: Vocabulary</b>	
Experimental Group	Control Group
<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>	<p><b>Objectives:</b> ESL/EFL students should be able to use an elaborated vocabulary learning strategy to learn new English words. Out of 60 vocabulary words, a student should be able to acquire approximately 20 words.</p>
<p><b>Words</b> : poke, trick, bacteria, increase, identification, international, strict, patients, sympathy, congratulations.</p>	<p><b>Words</b> : poke, trick, bacteria, increase, identification, registration, strict, patients, sympathy, congratulations.</p>
<p><b>Class periods:</b> 2 periods, 50 minutes each</p>	<p><b>Class periods:</b> 2 periods, 50 minutes each</p>
<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>	<p><b>Warming up:</b> 5 minutes to call the roll and greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed on</li> </ol>	<p><b>Teaching Procedures Using TVTM</b></p> <p><b>First period: 45 minutes</b></p> <ol style="list-style-type: none"> <li>1. Write all the words on the whiteboard.</li> <li>2. Read and translate into Chinese the words listed</li> </ol>

<p>the whiteboard to the students (e.g. report=報告, 報導).</p> <p>3. Teach the words using the back-drill pronunciation method (e.g. the word “report” will be taught as, t-ort-port-eport-report). Ask the students to repeat the back-drill method few times.</p>	<p>on the whiteboard to the students (e.g. report=報告, 報導).</p> <p>3. Ask the students to drill the words with Chinese translation.</p>
<p><b>Warming up:</b> 2 minutes to greet the students.</p>	<p><b>Warming up:</b> 2 minutes to greet the students.</p>
<p><b>Teaching Procedures Using MEVLSI</b> <b>second period: 48 minutes</b></p> <p>1. Underline the syllables of the words listed on the whiteboard with a red marker (e.g. re+por+t). This process is to help the students to remember the spelling of the listed words.</p> <p>2. Instruct the students to spell out the words by listening to the syllables of the words</p>	<p><b>Teaching Procedures Using TVTM</b> <b>second period: 48 minutes</b></p> <p>1. Ask the students to drill the words with Chinese translation.</p> <p>2. Ask the students to drill the words with Chinese translation.</p>

<p>accordingly (e.g. re+por+t).</p> <p>3. Associate each listed word with a keyword (e.g. robot for report).</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Explain to the students the different usages and meanings of the words.</p> <p>6. Remind the students to revise the words according to the process at home.</p>	<p>3. Ask the students to drill the words with Chinese translation.</p> <p>4. Provide examples of sentence patterns to show the students how these words are used in sentences (e.g. He <u>reported</u> the news. He presented a good <u>report</u>).</p> <p>5. Rote the sample vocabulary.</p> <p>6. Remind the students to revise the words according to the process at home.</p>
<p><b>Review/Evaluation:</b></p>	<p><b>Review/Evaluate</b></p>

## Appendix B

### A Teaching Sample of Mnemonic Link Method

This was the teaching presentation of the Class: Listening and Speaking for postgraduates of Graduate School Applied English at Ming Chuan University. There were 14 students in the class. The place was in P 406-2. The objective of the presentation was to enable students to use mnemonics (link method) to remember the 20 target vocabulary words.

Students were asked to speak out any word that he or she could think of during Chinese New Year, Lantern Festival, Tomb Sweeping Festival, Dragon Boat Festival and Moon-Cake Festival. The words raised by the students were as follows:

#### Chinese New Year

1. couplets
2. firecrackers
3. red envelops
4. laughter

#### Lantern Festival

5. “Tan Yon”
6. lanterns
7. riddles
8. “Red Envelope”

#### Tomb Sweeping Festival

9. tomb
10. joss sticks

11. paper money

12. spring roll

#### Dragon Boat Festival

13. stuffed dumplings

14. dragon boat

15. perfume bag

16. stand eggs

#### Moon-Cake Festival

17. moon cake

18. pomelo

19. B. B. Q.

20. wolf man

Students were asked to memorize forward, backward or did random checking but nobody could remember the 20 items. Therefore, “mnemonic link method” was applied to help the students to link the item numbers, 1 to 20, to one of our body parts

or things with a reason why.

1 links to our head because everyone has one head.

2 links to our eyes because everyone has two eyes.

3 links to our nose because our nose-drill is a triangle.

4 links to our mouth because (Chinese proverb, Ko Chu Shu Fun, “Shu” sounds 4)

5 links to our ears because we always use our hands to cover our ears.

6 links to the button because Taiwanese word “Liew Ya” Liew sounds like 6.

7 links to belly button because Taiwanese word “Tu Chee” Chee sounds like 7.

8 links to our butt because it sounds like “8”.

9 links to our hands because we hit dogs with our hand (dogs sound like 9).

10 links to our feet because we have ten toes.

Then, use a verb to link the items to our body parts or things and imagine of an action.

1. Use couplets to wrap your head.
2. Firecrackers hurt your eyes and the eye-balls came out.
3. Use red envelopes to wipe your running nose and the red color stain on your nose.
4. Mouth burst into laughter.
5. Squeeze the “Tan Yon” into your ears.
6. Make lantern out of your button.
7. Squeeze the riddle paper into your belly button.
8. Use your butt to set off the “Red Envelope”.
9. Use your hands to hold the tomb.
10. Use your feet to hold the joss sticks to pray.

Results: After the instruction, the students were randomly chosen to answer the words correspond to the randomly selected related numbers. Almost all the students remembered all the words firmly.

## Appendix C

### Achievement Test

Class: \_\_\_\_\_ No: \_\_\_\_\_ Name: \_\_\_\_\_

#### I. Read each statement. Then circle the letters of the correct answer ( 100%)

1. Television, radio and newspaper are regarded as \_\_\_\_\_.  
A. media                      B. galaxy                      C. report                      D. articles
2. Harry said that he wasn't sure, but he will \_\_\_\_\_ come to the party.  
A. properly                      B. probably                      C. personally                      D. popularity
3. When Judy is sad she goes to her own room to be \_\_\_\_\_.  
A. alien                      B. tiny                      C. hungry                      D. alone
4. That was an \_\_\_\_\_ movie. It was hard to believe what you saw!  
A. international                      B. immediate                      C. incredible                      D. intense
5. I am waiting for a very important phone call. I am \_\_\_\_\_ it in a few minutes, so please don't use the phone.  
A. bothering                      B. expecting                      C. hearing                      D. enjoying
6. John had a problem, so he asked his friend for some \_\_\_\_\_.  
A. medal                      B. wonderful                      C. guests                      D. advice
7. Tim spent a lot of money putting up a new business and he is now the proud \_\_\_\_\_ of a restaurant in Tienmou.  
A. assistant                      B. buddy                      C. owner                      D. star
8. The two best basketball teams will play against each other to win the \_\_\_\_\_.  
A. concert                      B. operation                      C. company                      D. championship
9. After his operation, when he becomes \_\_\_\_\_, he can go home from the hospital.  
A. stable                      B. grown-up                      C. personal                      D. sick
10. The captain of this ship will \_\_\_\_\_ us in the right direction.  
A. still                      B. street                      C. steer                      D. stretch

11. I borrowed a book from the library. It's time to \_\_\_\_\_ back the books to the library now.
- A. predict                      B. bedtime                      C. return                      D. own
12. I put my head on my new \_\_\_\_\_ when I slept in my bed.
- A. hog                      B. face                      C. shadow                      D. pillow
13. She has a lot of nice clothes and everyone is \_\_\_\_\_ of her for that.
- A. either                      B. stupid                      C. jealous                      D. neither
14. While the hunter saw the deer in the forest, he pointed an (a) \_\_\_\_\_ at it.
- A. valentine                      B. arrow                      C. idiot                      D. legend
15. My back hurts. So, please don't \_\_\_\_\_ me with that stick!
- A. gamble                      B. poke                      C. trick                      D. heart
16. I have a fever, cold and cough. I need to take a \_\_\_\_\_ for my flu.
- A. protect                      B. tablet                      C. bacteria                      D. increase
17. The security guard at the door wanted to know who I am. So, he asked me to show him my \_\_\_\_\_ card.
- A. identification                      B. Christmas                      C. charge                      D. post
18. The LV bag is so cheap at the night market. It must be \_\_\_\_\_.
- A. fake                      B. strict                      C. foolish                      D. unfair
19. At the wedding, everyone happily wished the bride and groom \_\_\_\_\_.
- A. condolences                      B. sadness                      C. congratulations                      D. sympathy
20. Please turn the music down. I need to focus and \_\_\_\_\_ on my work.
- A. cry                      B. dance                      C. concentrate                      D. laugh

## Appendix D

### Transcription of Teacher Anita's Interview

S: Anita 老師,妳好!

*How are you, teacher Anita?*

A: Samuel,你好!

*How are you, Samuel?*

S: 請問你在這裡教英文多久了?

*How long have you been teaching English in this cram school?*

A: 我已經教兩年了。

*I have already taught English here for almost 2 years.*

S: 妳以前有教過英文嗎?

*Have you taught English before joining this cram school?*

A: 沒有。

*No.*

S: 沒有教過。妳一來這裡教的時候是採用什麼樣的教學策略呢?

*No! Never. The very first time you started teaching English, what kind of teaching strategy did you use?*

A: 採用的是依照 Samuel 老師教的,單字用音節,加自然發音,由後面往前推演這樣子。

*I used the teaching techniques that Samuel taught me. Syllabicate the vocabulary, use phonics and apply "Back-drill" pronunciation method.*

S: 經過這一年的教學,你覺得這種策略對小朋友學英文單字方面是否有幫助?

*After one and a half years of teaching, do you think this type of teaching techniques is useful to students on their acquisition of English vocabulary?*

A: 一開始還不容易看的出來,但是一段時間過後,他們就可以很容易記得起來。

*In the beginning, the students will not show much significance, but after some times, students started to remember English words easily.*

S: 啊!這種的記憶是短暫的,還是這個單字,他們會記得很久?

*Do you think this type of memory of English vocabulary is short-term or long-term memory?*

A: 他們可以記得很久,因為他們已經知道那個發音技巧,他們以後見到,看到那個字就自然知道怎麼去 "Pronunciation"。我覺得應該是這樣子,永久的方法。

*Students can remember for a long time because they knew the techniques of pronouncing and remembering the word. Once they saw the word they automatically would be able to pronounce the word by themselves. I believe it is like this. It is a long lasting technique.*

S: 這種的方法會不會說對某一些年齡的小朋友比較有效,還是說對所有年齡的小朋友都有效?

*Do you think this type of learning strategy is useful for certain age group of students or all ages of students?*

A: 我覺得每個人都有效,只要他們有用心,他就是跟著我們的進度這樣子,就會一直都記的住這樣子,應該是都有效的。

*I realized it is effective to all ranges of students, provided the students pay attention and follow our teaching program. They would be able to remember it long. It is effective.*

S: Anita 老師,我再請教你一個問題,你覺得這種教學策略有沒有哪一方面比較,啊!比較不好,比較說直得改進的?

*Teacher Anita, may I ask you one more question? Do you think there is any limitations for this type of learning strategy?*

A: 是.....因為小朋友的組織能力還是不好,可能還要再多幫他們,就是幫他們發音的.....同樣發音的一些單字要幫他們做一些歸納,可以讓他們的組織更,就是他們的思考更有組織,然後更容易去分類哪一些字,字彙,然後這樣可以記的更久。

*Students in the beginning stage are lack of organizing abilities. Teachers should help them to induce the process of pronunciation especially for those words that have similar sounds in order to make their thought more organized and be able to classify the vocabulary. Then, they will be able to remember the word much longer.*

S: 謝謝 Anita 老師。

*Thank you, teacher Anita.*

A: 不會,謝謝。

*No, thank you.*

## Appendix E

### Transcription of Daniel's Interview

S: Daniel,你好!

*How are you, Daniel?*

D: Hi!大家好!

*Hi, everybody!*

S: Daniel,你覺得來,你來這裡學英文學的怎麼樣?

*Daniel, how is your learning of English here?*

D: 很好呀....呀!

*Very good ya...!*

S: 你以前有到別的地方去學過英文嗎?

*Have you learned English in other places before?*

D: 有,在長頸鹿學過,可是學的不怎麼好。

*Yes, in Giraffe, but the result was not good.*

S: 這裡呢?

*What about here?*

D: 可以啊!

*Okay ya!*

S: 那!怎麼樣覺得可以?

*Na! How do you know it is okay?*

D: 就是說英文單字都會唸,哪!然後都會寫呀!

*Because I can pronounce and write all the English words now.*

S: 爲什麼以前不會?爲什麼現在會呢?

*Why can't you make it before? Why can you do it now?*

D: (想了一下)不知道啊!

*(...) I don't know ya!*

S: 都一點知覺都沒有!不知道怎麼樣,就是說很快就,就記的起來,是不是這樣。

*Don't know how. Automatically, you can quickly remember the words. Is it right?*

D: 對呀!對呀!

*Yes, you are right. Yes, you are right.*

S: 你通常在這邊啊!比如說背單字的話,哦!以前是怎麼背?現在是怎麼背?

*How did you memorize English words before? How do you memorize now?*

D: 以前啊!死背呀(強調),就不分音節段,反正老師叫背這個,然後要考,馬上死背,死背,現在呀!這邊我就直接(停一下)用分段背會比較好背。

*Before ya! "Rote memorizing" ya! I didn't syllabicate the words. As long as the teacher asked me to memorize, I started "Rote memorizing and Rote memorizing". Now ya here, I straight away (...) using syllabication is easier to*

*memorize.*

S: 怎麼樣說用分段,可以不可以講的更清楚一點?

*What do you mean using syllabication? Can you make it clearer?*

D: 就像 “classroom” 這就 2 個音節,就可以(停一下) “class” 背一個單字, “room” 就背一個單字,這樣就很好背,很好記。

*For example, the word “classroom” has two syllables. We can (xxxxxx) memorize “class” as a word and “room” is another word to remember. In this case, it will be very easy to memorize and easy to remember.*

S: 哦!這樣,你現在,聽講你以前不喜歡去上英文,現在會喜歡去上英文課嗎?

*Oh, like this! I heard that you didn't like to go to English before. Do you like to go to English class now?*

D: 對呀!

*Yes, you are right.*

S: 對呀!對呀!

*Yes, you are right! Yes, you are right!*

D: 對呀!

*Yes, you are right.*

S: 哦!啊!你覺得老師用這種方法教你學這個英文單字哦! 你會記得很久還是一下子就忘記了?

*Oh, ya! The teacher uses this type of teaching techniques to teach you, do you think you will remember the words long or just for a while and forget?*

D: 記得很久呀!(加強語氣)

*I can remember the words for a long time. (stress)*

S: 你考試的時候,尤其是考哪個單字的時候,還會像以前那樣,那麼害怕嗎?

*Are you still afraid of the English vocabulary test like before during the exam?*

D: 不會呀!

*No, ya!*

S: 爲什麼呢?

*Why?*

D: 因爲都考 100 呀!(很有信心)

*Because I always get 100 points. (very confident) That's why I like to come to the English class.*

S: 都考 100 呀!這麼厲害呀!

*Always got 100 points! You are so great.*

D: 有時候只會錯一兩個單字而已。(shy)

*Sometimes, I only spelled one or two words wrong. (shy)*

S: 哦!這樣呀!學校呢?你在讀那個迴龍國小,那邊的考英文,現在怎麼樣?以前怎麼樣?

*Oh, like this! What about the English test in Hui Loong Primary School? How is it now? How was it before?*

D: 現在呀!現在都考 100,因為會唸呀!

*Now ya! Now I always got 100 points because I can pronounce the words and easily remember the words for a long time.*

S: 以前呢?

*What about before?*

D: 以前呀!都不會唸呢!臨時抱佛腳。

*Before ya! I didn't know how to pronounce and I could not remember the words. Do it at the last minute (Lin Su Bau Fore Chaoi, 臨時抱佛腳)*

S: 這樣啊!好!Daniel,謝謝你哦!

*Like this. Okay Daniel. Thank you.*

D: 不客氣。

*You are welcome.*



## Appendix F

### Transcription of Mr. Chen's Interview

S: 陳先生,你好!

*How are you, Mr. Chen?*

C: 你好!

*How are you?*

S: 你的小孩在這裡,學英多久了?

*How long have your son been studying English here?*

C: (思考)3個月了!

*(...think for a while) Three months.*

S: 你的小孩以前有在其他的其他地方學過英文嗎?成績如何?

*Did your son learn English in other places before? How was the result?*

C: 有,在長頸鹿學過一期。

*Yes. Studied in Giraffe for one semester before and the result was poor.*

S: 你覺得現在你的小孩的英文有進步嗎?

*Do you think your son improve his English now?*

C: .....比較有進步。

*(...) Improve.*

S: 哪一方面?你可以做更進一步得解說嗎?

*In which way? Can you explain more clearly?*

C: 閱讀方面。

*Improve his reading ability.*

S: 你可以解說一下,你的小孩以前是用什麼方法記英文單字?現在又用什麼方法?

*Can you briefly explain what kind of method did your son used to memorize English words before? How about now?*

C: 以前用死背呀!現在他用發音來拼出那個字。

*He used "Rote memorizing" before. Now Daniel uses pronunciation to spells out the word (Use syllabication).*

S: 你覺得你小孩現在學的英文單字會記得很久,還是一下子就忘記了。

*Do you think your son can remember the English words for a long time now or just for a while and forget?*

C: 記得很快又很久。

*He can remember fast and for a long time.*

S: 你覺得是什麼東西原因讓你的小孩從不喜歡英文到喜歡英文?

*What is the main reason do you think that inspires your son's English learning motivation from negative to positive?*

C: 時間不會太長,而且又能幫他重覆練習。

*The lesson time is not too long and the teacher always helps him do repetitive*

*revision of his lessons.*

S: 你覺得是什麼原因影響他喜歡來上英文課?

*What is the major influence that made your son like to come to the English class?*

C: 老師的教學方式。

*The teaching techniques that the teacher used.*

S: 你可以再進一步說明解說怎樣的教學方式,你對這個這個這個新的英文補習班,它的教學方式有沒有稍微可以說解說一下?

*Can you explain a bit about the teaching techniques used in this new cram school?*

C: 解說一下!因為.....,這可能就是教材的問題,還有就是教學的.....,主要是一個禮拜有三天嗎!那他可以不斷重覆幫助你複習,那小孩也會不會浪廢太多時間在這方面上面,他比較不會排斥。

*Explain! Because (...) may be because of the teaching material they used and also the teaching..... Most important of all is they got three times a week and the teachers will help students to do repetitive revision. And also, the students won't waste too much time on it. They won't rebel.*

S: 你覺得老師教他學單字的方法有沒有,有沒有關係到呢?

*Do you think the teaching techniques that the teacher taught him how to acquire English vocabulary also affects your son's learning behavior?*

C: 有啊!有相當大的關係。

*Yes. It affects a lot.*

S: 你可以稍微解說一下這邊老師是用什麼方式教他單字?讓他記得更久更容易?

*Can you explain deeper what type of techniques the teacher used to teach him vocabulary in order to him remember longer?*

C: 教完之後,他會在課文中反覆的出現,然後就等於.....你不斷的去看到那個字,你就會,就有它的印像。

*After finishing teaching, the words will appear in the context repetitively. Then it means ...you will come across the words continuously, you will, you will retain the image.*

S: 他那個學單字的時候你有沒有看過你的小孩是怎樣的拼? 怎樣那個單字怎樣來拼?

*Have you realized how does your son spell out an English word when he did the English vocabulary learning?*

C: 他是先學發音,然後再用.....音節下去去.....去背那個單子,然後背完之後,他會再重複中文,然後在從課本裡再面去學那個單字。

*At first he uses phonics to learn pronunciation. Later, he uses .... Syllabication to memorize the word. After that he will do the English-Chinese translation. Then he practices the lexical use of the word in the context.*

S: 你覺得這樣的方法有用嗎?

*Do you think this type of teaching method is effective?*

C: 有用!

*Yes.*

S: 好!陳先生,謝謝。

*Okay! Mr. Chen, thank you.*

C: 好!不客氣。

*Okay! You are welcome.*

