ENGLISH VOCABULARY LEARNING STRATEGIES

EMPLOYED BY RAJABHAT UNIVERSITY STUDENTS

Mayuree Siriwan

A Thesis Submitted in Partial Fulfilment of the Requirements for the

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กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษของนักศึกษามหาวิทยาลัยราชภัฏ

นางสาวมยุรี ศิริวรรณ

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Suranaree University of Technology has approved this thesis submitted in partial fulfillment of the requirements for the Degree of Doctor of Philosophy.

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(ENGLISH VOCABULARY LEARNING STRATEGIES EMPLOYED BY

RAJABHAT UNIVERSITY STUDENTS) อาจารย์ที่ปรึกษา : ผู้ช่วยศาสตราจารย์

ดร. ชาญณรงค์ อินทรประเสริฐ, 378 หน้า

การวิจัยครั้งนี้มีวัตถุประสงค์ เพื่อสำรวจการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษโดยรวม
ของนักศึกษามหาวิทยาลัยราชภัฏ และศึกษาความสัมพันธ์ระหว่างความถี่ของการใช้กลวิธีการ
เรียนรู้คำศัพท์ภาษา อังกฤษกับตัวแปร 5 ตัวได้แก่ เพศ (ชายและหญิง) สาขาวิชาที่กำลังศึกษาอยู่
(สาขาวิชาภาษาอังกฤษ สาขาวิชาวิทยาศาสตร์ และสาขาวิชาอื่นที่ไม่ใช่ภาษาอังกฤษ และ
วิทยาศาสตร์) ประสบการณ์การเรียนวิชาภาษาอังกฤษ (ประสบการณ์มาก และประสบการณ์น้อย)
หลักสูตรการเรียน (หลักสูตรภาคปกติ และภาคพิเศษ) และระดับความสามารถด้านคำศัพท์
ภาษาอังกฤษ (ระดับสูง กลาง ต่ำ) กลุ่มตัวอย่างในการวิจัยประกอบด้วยนักศึกษาจำนวน 1,481 คน
จากมหาวิทยาลัยราชภัฏ 12 แห่ง ในปีการศึกษา 2549 ซึ่งได้มาจากการสุ่มตัวอย่างแบบหลาย
ขั้นตอน การเก็บข้อมูลแบ่งออกเป็น 2 ช่วง ได้แก่ ช่วงที่ 1) การเก็บข้อมูลจากการสัมภาษณ์
และช่วงที่ 2) การสร้างแบบสอบถามโดยการวิเคราะห์ข้อมูลที่ได้จากการสัมภาษณ์ในช่วงที่ 1
แบบสอบถามที่ผู้วิจัยสร้างขึ้นเพื่อใช้เป็นเครื่องมือในการเก็บรวบรวมข้อมูลนั้นได้ทำการตรวจสอบ
ความเที่ยงตรงภายในด้วยค่าสัมประสิทธิ์อัลฟาหรือครอนบัค ซึ่งมีค่าความเชื่อมั่นของแบบสอบถาม
จากกลุ่มตัวอย่างของนักศึกษาจำนวน 1,481 คน ที่ระดับ .94 สำหรับการวิเคราะห์ข้อมูลทางสถิติ
ได้ใช้สถิติเชิงบรรยายในการวิเคราะห์ระดับความถี่ของกลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษของ
นักศึกษา และใช้การวิเคราะห์ความแปรปรวน (ANOVA) การทดสอบไค-สแควร์ (χ^2) และการ
วิเคราะห์ปัจจัย (Factor Analysis) ในการหาค่าความสัมพันธ์ระหว่างการใช้กลวิธีการเรียนรู้
คำศัพท์ภาษาอังกฤษของนักศึกษากับตัวแปรทั้ง 5 ตัว

ผลการวิจัยพบว่า โดยภาพรวมแล้ว นักศึกษารายงานความถี่การใช้กลวิธีการเรียนรู้คำศัพท์
ภาษาอังกฤษ ได้แก่ 1) กลวิธีการค้นหาความหมายคำศัพท์ภาษาอังกฤษ 2) กลวิธีการจดจำคำศัพท์
ภาษาอังกฤษ และ 3) กลวิธีการขยายวงคำศัพท์ภาษาอังกฤษ อยู่ในระดับปานกลาง ผลจากการ
วิเคราะห์ข้อมูลแสดงให้เห็นว่าความถี่ของการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษของนักศึกษา
มีความสัมพันธ์อย่างมีนัยสำคัญกับเพศของนักศึกษา สาขาวิชาที่นักศึกษากำลังศึกษาอยู่
ประสบการณ์การเรียนวิชาภาษาอังกฤษ หลักสูตรการเรียน และระดับความสามารถด้านคำศัพท์

ภาษาอังกฤษ ส่วนการวิเคราะห์ปัจจัยพบว่า 7 ปัจจัยมีความสัมพันธ์อย่างมากกับตัวแปร 4 ตัว ได้แก่ เพศของนักศึกษา สาขาวิชาที่นักศึกษากำลังศึกษาอยู่ ประสบการณ์การเรียนวิชาภาษาอังกฤษ และระดับความสามารถด้านคำศัพท์ภาษาอังกฤษ แต่ไม่พบความสัมพันธ์ระหว่างตัวแปรในด้านหลักสูตรการเรียนกับการเลือกใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษของนักศึกษา

สาขาวิชาภาษาอังกฤษ   ลายมือชื่อนักศึกษา _____

ปีการศึกษา 2550   ลายมือชื่ออาจารย์ที่ปรึกษา _____

MAYUREE SIRIWAN : ENGLISH VOCABULARY LEARNING STRATEGIES EMPLOYED BY RAJABHAT UNIVERSITY STUDENTS. THESIS ADVISOR : ASST. PROF. CHANNARONG INTARAPRASERT, Ph.D., 378 PP.

VOCABULARY LEARNING/VOCABULARY LEARNING STRATEGIES/ RAJABHAT UNIVERSITY STUDENTS

The present investigation aims to investigate threefold: 1) to examine and describe types of vocabulary learning strategies which Rajabhat University students reported employing in order to deal with their vocabulary learning; 2) to explore patterns of variations in frequency of students' reported strategy use according to gender (male and female), major field of study (English, science-oriented, and non science-oriented), previous language learning experience (more and less), type of academic programme of study (regular and part-time), and level of vocabulary proficiency (high, medium, and low); and 3) to investigate the relationships between frequency of students' reported strategy use and the five independent variables. The research subjects under the present investigation were 1,481 undergraduate students studying at 12 Rajabhat Universities in academic year 2006, obtained through the multi-stage sampling. Semi-structured interviews and a strategy questionnaire were used as the main methods for data collection. The Alpha Coefficient (α) or Cronbach alpha was used to check the internal consistency of the researcher-constructed strategy questionnaire, and the reliability of the questionnaire was .94. The statistical methods used in order to help interpret the data for the present investigation include

mean of frequency ($\bar{x}$), standard deviation (S.D.), percentage, an analysis of variance (ANOVA), the chi-square (χ^2) tests, and a factor analysis.

The findings reveal that three main vocabulary categories: the discovery of the meaning of new vocabulary items (DMV), the retention of the knowledge of newly-learned vocabulary items (RKV), and the expansion of the knowledge of vocabulary (EKV), were discovered and examined. Rajabhat University students, on a whole, reported medium frequency of strategy use for their vocabulary learning. The findings also reveal that frequency of students' overall reported use of strategies varied significantly according to the examined variables. The factor analysis results show that seven factors were found strongly related to four examined variables, including gender of the students, major field of study, previous language learning experience and level of vocabulary proficiency. No factors were found to be related to type of academic programme of study.

School of English   Student's signature _____

Academic year 2007   Advisor's signature _____

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First of all, I would like to acknowledge the great supervision by Asst. Prof. Dr Channarong Intaraprasert. I am very grateful to him for all the help he has kindly given to me. It was he who first inspired and interested me in the field of vocabulary learning strategies and in his gentle way he has acted as an excellent supervisor from the very beginning when I started working with him up to the present. He has always provided a helpful direction, assistance and support for my thesis whenever I needed it. I would never have completed this thesis without his kind help.

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LIST OF ABBREVIATIONS

ANOVA	analysis of variance
DMV	the discovery of the meaning of new vocabulary items
EFL	English as a foreign language
EKV	the expansion of one's knowledge of vocabulary
E/Eng.	English
ESP	English for specific purposes
ESL	English as a second language
Exp.	expert
F	female
FL	foreign language
GD	gender
GE	general education
HEP	high English proficiency
Hi	high
Le	less
LEP	low or limited English proficiency
Less exp.	less experienced in previous language learning
LL	language learner
LLP	levels of language proficiency
Lo	low

LIST OF ABBREVIATIONS (Continued)

LVP	level of vocabulary proficiency
M	male
Me	medium
MFS	major field of study
Mo	more
More exp.	more experienced in previous language learning
n.d.	no date
NNE	native or native-like speaker
NNSE	non-native speaker of English
N.S.	not significant
NSci/non-sci	non science-oriented
P/Part.	part-time
PrvLLE	previous language learning experience
R/Reg.	regular
RKV	the retention of the knowledge of newly-learned vocabulary items
RU/RUs	Rajabhat University/Universities
Sci-	science-oriented
S.D.	standard deviation
SILL	strategy inventory for language learning
SPSS	statistical package for the social sciences

LIST OF ABBREVIATIONS (Continued)

TAP	type of academic programme of study
VL	vocabulary learning
VLSI	vocabulary learning strategy inventory
VLSQ	vocabulary learning strategy questionnaire
VLSs	vocabulary learning strategy/strategies
VP	vocabulary proficiency
VPT	vocabulary proficiency test

LIST OF APPENDICES

CHAPTER 1

BACKGROUND TO STUDY

1.1 Introduction and Purpose of the Chapter

This chapter is an introduction to the present investigation. It provides both background and a context for the research work. The subsequent sections include the working definitions used for the present investigation; the background of Rajabhat Universities and their English language teaching and learning. This is followed by research objectives; the benefits of the present investigation; and then the expected outcomes. The final section of the chapter is an outline of the investigation.

It is generally acknowledged among language teachers and learners that vocabulary is considered by both first-language and second-language researchers as an essential factor in language competence. Decarrico (2001, p. 285) points out that vocabulary learning is central to language acquisition whether it is a second, or a foreign language. Even in a learner's mother tongue, there is an incessant learning of new words and new meanings for old words (Thornbury 2002, p. 1). Any learner of a foreign language knows very well that words are essential, and the lack of them leads to difficulties in communication situations (Maley 1986, p. 3). It is generally accepted that vocabulary is 'the heart in learning a second language', but the acquisition of a large number of vocabulary items may be one of the most difficult aspects of learning a second language for most L2 learners (Meara 1980, p. 221; 1982, p. 100; Read 2000, p. 1; Stőffer 1995, p. 2). These scholars' statements sum up the importance of

vocabulary as a very essential component of any language as well as the core of language learning and communication.

Although vocabulary has always been a crucial part of language learning and teaching and communication, it is said that vocabulary teaching has not been receptive to problems in the area, and most language teachers have not fully recognised the great communicative advantage in developing an extensive vocabulary (McCarthy 1990, p. 45). Vocabulary often seems to be the least systematised and the least well-catered for of all the aspects of learning a foreign language, such as listening, speaking, reading, writing, grammar, or even pronunciation. Many scholars (e.g. Allen, 1983; Carter and McCarthy, 1988; Hughes, 1989; 2003; Jackson and Amvela, 2000; Lewis, 1993; Long and Richards, 1997; Maley, 1986; Meara, 1980; 1982; Read, 2000; Richards, 1985; Schmitt, 1997; Seal, 1991; Zimmerman, 1997) specifically highlight the neglect of vocabulary studies. The teaching and learning of vocabulary has never aroused the same degree of interest within language teaching as have such issues as grammatical competence, contrastive analysis, reading, writing, phonology or discourse analysis which have received considerable attention from scholars and teachers.

Hedge (2000, pp. 110-111) affirms that there is a lack of attention to vocabulary. She gives a notable reason for the neglect of vocabulary that learners themselves do not place considerable significance on vocabulary. Language teachers have been told a great deal about new discoveries in English grammar, but they have heard much less about ways to help students learn new words. Moreover, some past specialists in teaching methodology seem to believe that the meanings of words could not be adequately taught, so it is better not to try to teach them (Allen 1983, pp. 1-4).

However, it is not hopeless at all for vocabulary learning since there is a rising awareness of the importance of vocabulary. Some scholars (e.g. Allen, 1983; Long and Richards, 1997; Nation, 1990; 2001; Richards, 1985; Schmitt, 2000; Thornbury, 2002) emphasise that in the 1950's many people began to notice that vocabulary learning is not a simple matter, and in recent years, there is a renewed interest in the role of vocabulary in ESL/EFL and more attention has been given to vocabulary learning. At present, many researchers, material designers, and language teachers have realised the greater importance of vocabulary learning (Hedge 2000, p. 111; Read 2000, p. 1).

Since vocabulary learning is a part of language learning and teaching, it is worth mentioning in the present investigation that strategies should be indispensable parts of vocabulary learning and teaching. In learning vocabulary items, it is useful and necessary for language learners to be taught vocabulary learning strategies in order that they can learn how to discover the meaning of new words, how to store them in their memory, and how to use them by practising and expanding their vocabulary. Some scholars, such as Tarone (1983, p. 67); Rubin (1987, p. 22); O'Malley and Chamot (1990, p.1); Oxford (1990, p.1); Williams and Burden (1997, p. 145), point out that strategies are essential tools for developing communicative competence. Appropriate language learning strategies result in improved proficiency and greater self-confidence. Similarly, regarding vocabulary learning, it is not easy for all language learners to learn and acquire the meanings of new words, to store them in their memory and recall them at will, to use them in appropriate situations, or to expand their vocabulary size. Therefore, in order to help learners to learn vocabulary successfully and become self-directed learners of vocabulary, they must be taught and

appropriately trained various kinds of vocabulary learning strategies. To be precise, they must learn different appropriate strategies for coping with unknown or unfamiliar words.

As discussed above, we can see that in language learning, it is unavoidable for language learners and language teachers to deal with vocabulary and vocabulary learning strategies. Through an extensive review of related literature and available research work on vocabulary learning strategies, the researcher has noted that past researchers have given little attention and so little importance to vocabulary learning when compared with other aspects of the language, such as grammar, phonology or discourse analysis. In the context of English as a foreign language (EFL) in Thailand, it is found that very few empirical research works have been conducted to investigate vocabulary learning strategies employed by students at any level of education. There might be a few researchers who carried out research works on vocabulary learning strategies at the tertiary level in Thailand; however, very little empirical evidence has been found. This also includes the newly-designated Rajabhat Universities.

To the researcher's knowledge, the only available research work on vocabulary learning strategies conducted with Thai students, whose major subject is not English, has been carried out by Intaraprasert (2004). In his study, he has expended great effort to look into learners' use of vocabulary learning strategies. Since his study is the preliminary investigation carried out with 133 science-oriented students studying English for Science and Technology (EST) at a university specialised in Science and Technology in Northeast Thailand, the results may not be generalisable to larger groups of students learning English at other universities, especially those whose major is English. Therefore, a broader investigation should be carried out. Despite this, his

study has shed light on vocabulary learning in the Thai context. To date, no empirical research work on vocabulary learning strategies conducted with both science- and non-science oriented students learning English at Rajabhat Universities have been found. To fill this gap, the researcher would like to examine vocabulary learning strategies employed by English major students as well as science- and non science-oriented major students learning English at Rajabhat Universities.

Several research works reveal that age of students is seen as an important factor that may predict the students' success in vocabulary learning and their vocabulary learning strategy use. However, the researcher has also considered that other factors, such as students' gender, major field of study, previous language learning experience, type of academic programme of study, and levels of language proficiency are worth investigating since they may have some relationship with students' vocabulary learning strategies. Consequently, the main aim of the present investigation is to explore types of vocabulary learning strategies reported employing by undergraduate students learning English at Rajabhat Universities with reference to individual learner variables including their gender, major field of study, previous language learning experience, type of academic programme of study, and levels of language proficiency, in order to see whether or not these variables are related to vocabulary learning strategies.

Apart from types of vocabulary learning strategy use, frequency of learners' use of vocabulary learning strategies is the focal point of the present investigation as well. The findings of the present investigation will certainly help shed light on a better understanding how Thai undergraduate students studying English at Rajabhat Universities use the strategies, in terms of type and frequency of use, in learning the

target vocabulary. More importantly, the present investigation will shed some light on the importance of vocabulary in language learning, and may add to the knowledge regarding foreign language teachers' and learners' awareness of strategies used for learning vocabulary items.

1.2 The Working Definitions for the Present Investigation

The working definitions which will be used throughout the present investigation include:

1.2.1 Vocabulary Learning Strategies

The term "vocabulary learning strategies" refers to "any set of techniques or learning behaviours, which language learners reported using in order to discover the meaning of a new word, to retain the knowledge of newly-learned words, and to expand one's knowledge of vocabulary" (Intaraprasert 2004, p. 53). In the context of the present investigation, "VLS/VLSs" will sometimes be used as the abbreviation for vocabulary learning strategy/strategies.

1.2.2 Students

"Students" refers to undergraduate students learning English in academic year 2006 at Rajabhat Universities. The hours per week they take for learning English in their universities may vary ranging from two to fourteen hours depending on the major field of study.

1.2.3 Major Field of Study

The term "major field of study" refers to English major and non-English major. The non-English major is further sub-grouped into science-oriented and non science-oriented majors.

1.2.4 Previous Language Learning Experience

"Previous language learning experience" in the present investigation refers to the study of the fundamental English 1 and 2 which are on offer at Rajabhat Universities as the required or compulsory courses for every student. Any students who have already completed the fundamental English 1 and 2 are classified as 'more experienced'. If they have not completed the fundamental English 1 and 2 yet, they are classified as 'less experienced'.

1.2.5 Type of Academic Programme of Study

"Type of academic programme of study" provided for undergraduate students at Rajabhat Universities can be classified into two types as 'regular' and 'part-time' programme. The regular programme runs from Mondays to Fridays whereas the part-time programme may run on Saturdays and Sundays, or it may run in the evening of weekdays. Regarding "the curriculum", both regular and part-time programmes conform to the same curriculum of Rajabhat Universities.

1.2.6 Students' Level of Vocabulary Proficiency

"Students' level of vocabulary proficiency" refers to their 'vocabulary proficiency in reading different texts provided'. The research subjects' English vocabulary proficiency levels have been rated as 'high', 'medium', or 'low' based on their test scores obtained through the researcher-constructed vocabulary proficiency test.

1.3 Background of Rajabhat Universities and their English Teaching and Learning

The previous section has presented the working definitions for the present investigation, this section concentrates on background of Rajabhat University and its English learning and teaching. The information presented is mainly based on the Rajabhat Council (2000).

All Teachers' Colleges in Thailand were given the new name of Rajabhat Institute by His Majesty King Bhumibhol Adulayadej in 1992. They all share the same curriculum which is created by the Rajabhat Council. One of the main aims of all Teacher's Colleges was to produce good teachers in different disciplines of education to serve the need of the society at that time. Since all Rajabhat Universities have been upgraded from Teachers' Colleges, some old aims and policies are still kept, while at the same time much teaching and learning has changed to focus on science and technology to serve the rapid changes of the society.

In 2004, the Rajabhat University Act was proclaimed, and all Rajabhat Institutes were upgraded to universities and are known as Rajabhat Universities. Currently, there are altogether 40 Rajabhat Universities located in different geographical regions in Thailand. They are all independent universities, but regarded as a juristic person and as a government sector under the Law of Budgetary Means, reporting to the Office of the Board of Higher Education (Rajabhat Maha Sarakham University's student handbook, 2004).

According to the new law, all Rajabhat Universities can set their new curriculum and policy to serve their own educational purposes, and to serve the changes in the society, the economy, the politics, and the education, etc. around the world. However,

in practice, it is time-consuming to generate a new curriculum. As a result, many Rajabhat universities have still followed the former curriculum.

Because of the rapid changes in the society, the economy, the politics, and the education, etc. around the world, not all the students at Rajabhat Universities will become teachers after their graduation as in the past. Now many different disciplines of education at Rajabhat Universities are provided for the students so that the students have more options to choose as they prefer or are interested in. Some majors they choose can lead them to work in different areas, such as business, science, and technology (Rajabhat Maha Sarakham's student handbook, 2004).

Regarding English learning and teaching at Rajabhat Universities, English as a foreign language is provided to students learning English as both compulsory and elective courses for both English major and non-English major students. There are two programmes provided to English major students, namely Liberal arts, and Education. Some Rajabhat Universities can provide their students with other additional English programmes, namely Business English and International programme. Apart from the main English courses of their majors, English major students have to study English as fundamental courses in general education (GE), English as elective courses, and English for specific purposes (ESP) like those studying in other majors (Rajabhat Maha Sarakham's student handbook, 2004). Besides English as fundamental courses in part of general education, like English major students, non-English major students learning English at Rajabhat Universities need to study English for specific purposes for their specialised areas. If they achieve excellence, they can enrol English as elective courses as well.

In summary, looking at EFL in the context of Rajabhat Universities, it is apparent that English plays a dominant part in the education of all students, whatever level, major field and whatever type of programme of study.

1.4 Research Objectives

The present investigation aims to examine what types of vocabulary learning strategies and how often vocabulary learning strategies were reported being used by undergraduate English major and non-English major students. It also aims to explore how five independent variables, namely, the student's gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency, relate to vocabulary learning strategies. Specifically, the purposes of the present investigation are:

1. to investigate types and frequency of vocabulary learning strategies which undergraduate English major as well as science-oriented and non science-oriented students at Rajabhat Universities reported employing to discover the meaning of new vocabulary items, to retain the knowledge of the newly-learned vocabulary items, and to expand the knowledge of vocabulary;

2. to investigate the relationships between frequency of students' use of vocabulary learning strategies and five independent variables: gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency; and

3. to examine patterns of significant variation in the frequency of students' report of vocabulary learning strategy use at different levels with reference to the five independent variables mentioned.

1.5 The Benefits of the Present Investigation

This research study is important and useful for both language teachers and learners because it will highlight the use of vocabulary learning strategies, shed light on the conceptions and misconceptions of vocabulary learning, and reflect upon the beliefs or thinking regarding strategies for learning and acquiring vocabulary items. Language teachers may be able to make use of the findings to improve their vocabulary teaching and they may also be able to help change the misconceptions about vocabulary learning of their students, if any exists at all. Moreover, language learners can consider different vocabulary learning strategies that can appropriately improve their knowledge of vocabulary.

1.6 The Expected Outcomes

Since this is the first known research in Thailand to investigate vocabulary learning strategies employed by undergraduate students learning English at Rajabhat Universities, one contribution will be to identify and explore the types of vocabulary learning strategies which will be reported being employed by these students. The expected outcomes will correspond to the research questions to reveal types of vocabulary learning strategies these students make use of in coping with new vocabulary items, and also shed light on the strategy teaching of the language teachers.

1.7 The Outline of the Thesis

In order for the researcher to achieve the research objectives, a review of the related literature is a starting focus, followed by past research works on vocabulary learning strategies, and finally the research methodology, all of which contribute to the present investigation. This can be seen in Chapter 2.

Chapter 2 includes the review of related literature on vocabulary learning along with some significant issues of vocabulary learning, vocabulary learning strategies as well as reviewing the available research works on vocabulary learning strategies. The chapter summarises vocabulary learning strategies employed by foreign or second language learners in the past, as well as showing how vocabulary learning strategies are defined and classified by different researchers such as Cohen (1987; 1990); Rubin and Thompson (1994); Stőffer (1995); Gu and Johnson (1996); Lawson and Hogben (1996); Schmitt (1997); Weaver and Cohen (1997); Hedge (2000); Cook (2001); Decarrico (2001); Nation (2001; 2005); Pemberton (2003); and Intaraprasert (2004). Finally, some of available research work on vocabulary learning strategies carried out with language learners outside Thailand which contributes to the present investigation are presented, as well as the only available research work carried out with Thai students in Thailand.

Chapter 3 concentrates on research methodology; methods for researching in language learning strategies (classroom observation, oral interview, written questionnaire, think aloud, diary studies); theoretical framework and rationale for selecting and rejecting variables for the present investigation; and research questions. Then, sampling and rationales for choice of subjects, as well as characteristics of the research population and institutes are discussed. This is followed by framework of

data collection methods for the present investigation; and methods for data collection and generation. Finally, analysing, interpreting, and reporting data for the present investigation are presented to conclude the chapter.

Chapter 4 starts with the explanation of how the vocabulary learning strategy inventory (VLSI) for the present investigation was generated. It is followed by the VLSI with the three main categories of vocabulary learning behaviours reported being employed by Rajabhat University students. Then, the method of how to categorise vocabulary learning behaviours, and the method of how to validate the VLSI for the present investigation are discussed. The chapter ends with the process used to generate the vocabulary learning strategy questionnaire used as the main instrument in the last phase for data collection.

Chapter 5 examines the researcher-constructed vocabulary proficiency test (VPT) used to determine the students' levels of vocabulary proficiency for the present investigation. The chapter begins with a discussion of the importance of language tests and testing. There is an examination of the distinctions among language test types, purpose of each test type as well as test formats or methods. Then, it discusses the related fields of how the VPT for the present investigation was constructed. The chapter examines the VPT consists of, how to carry out the item analysis for the level of difficulty and the power of discrimination of the test items. This is followed by the refinement as well as the improvement of the test. It also discusses validity and reliability of the test. It tabulates Rajabhat University students' levels of vocabulary proficiency to conclude the chapter.

Chapter 6 concentrates on data analysis through descriptive statistics. To start with, frequency of overall use of vocabulary learning strategies reported employing

by 1,481 Rajabhat University students is presented. Then, frequency of use of vocabulary learning strategies in three main categories: the discovery of the meaning of new vocabulary items (DMV); the retention of the knowledge of newly-learned vocabulary items (RKV); and the expansion of one's knowledge of vocabulary (EKV) are demonstrated.

Chapter 7 still involves data analysis for vocabulary learning strategy use in order to see the relationship between vocabulary learning strategy use by 1,481 Rajabhat University students and their gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency. The chapter explores variation in students' overall report vocabulary strategy use, and students' strategy use in the three main categories through the use of analysis of variance (ANOVA). Then, the chapter examines variation of the students' individual strategy use for vocabulary learning purposes through the use of chi-square tests (χ^2) according to the five examined variables. The chapter ends with the factor analysis and eight extracted factors with strong relation to each of the variables.

Chapter 8 presents the research findings of the investigation in response to research questions 1-8. In so doing, it starts with a summary of the research findings to examine the importance of language tests and testing. It also establishes a discussion of the research findings and the implications arising from the research for the teaching and learning of English for the Rajabhat University students. Among other important things, the chapter presents the contributions of the present investigation to the related fields. Finally, the limitations of the present investigation and proposals for future research are discussed, followed by the conclusion.

1.8 Summary

In Chapter one, the researcher has given a description of the background to the present investigation in an attempt to put the study in context, followed by the working definitions for the present investigation. This chapter also presents a brief overview of background of Rajabhat Universities and their English teaching and learning. This is followed by a discussion of the research objectives, the expected outcomes and the benefits of the present investigation. Lastly, the chapter concludes the outline of the thesis.

CHAPTER 2

REVIEW OF RELATED LITERATURE

AND RESEARCH WORKS ON VOCABULARY

LEARNING STRATEGIES

2.1 Introduction and Purpose of the Chapter

This chapter is a review of literature related to the present investigation. First, the researcher will start with vocabulary learning as well as its sub-sets, including word and vocabulary, the importance of vocabulary, the importance of vocabulary learning goals, vocabulary learning approaches, vocabulary and the four language skills, what is involved in knowing a word, and which word needs to be learned. This is followed by vocabulary learning strategies proposed by different researchers. Finally, the available research works on vocabulary learning strategies will be presented.

"When we speak of a person's vocabulary, we mean the words he or she knows and is able to use" (Nandy 1994, p. 1). It is generally accepted that vocabulary is the heart of language learning. Rubin and Thompson (1994, p. 79) point out, "One cannot speak, understand, read or write a foreign language without knowing a lot of words. Therefore, vocabulary learning is at the heart of mastering a foreign language". Moreover, Taylor (1992, p.30) states that "Vocabulary permeates everything language learners or language teachers do in an English language class, whichever skill or language point is being practised". It is commonplace to say that understanding any

language is impossible without knowing words whether in the spoken or the written forms (Hall, 2000; Schmitt 2000; Hill, 1997). Language learners with large and rich vocabulary are believed to improve their listening, reading, speaking, writing, and thinking abilities (Smith 1998, p. xv). On the contrary, language learners with a limited vocabulary are likely to be handicapped in the educational progress. That is to say, vocabulary is a key indicator of both one's language learning and one's ability to learn language.

2.2 Vocabulary Learning

Even though vocabulary is the sub-skill of a language, it plays a very important role in language learning and teaching. There are many important aspects in vocabulary learning, such as the distinction between word and vocabulary, how important vocabulary is, why a language teacher needs to set the vocabulary learning goals, what are vocabulary learning approaches, etc. This section aims to discuss and review vocabulary learning in different aspects mentioned.

2.2.1 Defining Word and Vocabulary

"All languages have words, a vocabulary or lexicon" (Foley and Thompson 2003, p. 10). However, before discussing the importance of vocabulary and other issues concerning vocabulary learning, a clear distinction between the terms *word* and *vocabulary* should be made. Some scholars (e.g. Bowen et al., 1985; Jackson and Amvela, 2000; Read, 2000; Trask, 1995) indicate that 'word' may be easy to perceive, but is hard to define. Trask (1995, pp. 46-51) points out that "there are the difficulties in the definition of the word because words do not have meanings in isolation, but they are related to the meanings of other words in ways that may be

simple or complex". Moreover, "a word, at least, relates to the fields of morphology, semantics, etymology or lexicology" (Jackson and Amvela 2000, p. 48).

Since the term 'word' is difficult to define, and the main purposes of the present investigation emphasise vocabulary learning strategies used by language learners to learn or acquire vocabulary items; therefore, the researcher does not look into the history of words or any aspects related to a word except defining the terms 'word' and 'vocabulary' in this section. Instead, the researcher attempts to distinguish particularly the term *word* and *vocabulary* that best suit the context of the present investigation with the hope that it may result in a better understanding of the term 'vocabulary learning'.

A few researchers, such as Jackson and Amvela (2000); Richards et al. (1992); and Hornby et al. (1984), have viewed *word* and *vocabulary* in a comparative way. *Word* is "an uninterruptible unit of structure consisting of one or more morphemes and which typically occurs in the structure of phrases. The morphemes are the ultimate grammatical constituents, the minimal meaningful units of language", while *vocabulary* (which is synonymous with 'lexis', or 'lexicon') is viewed as "a collection of words" or "a package of sub-sets of words that are used in particular contexts". Richards et al. (1992) define the term *word* as "the smallest of the linguistic units which can occur on its own in speech or writing" (p. 406), but *vocabulary*, as "a set of lexemes which includes single words, compound words and idioms" (p. 400). Besides, *word* is defined as "sound or combination of sounds forming a unit of the grammar or vocabulary of a language", whereas *vocabulary* as "the total number of words which make up a language; and a range of words known to, or used by a person" (Hornby et al., 1984). In addition, regarding the definition of word and

vocabulary, a *word* is "a unit formed of sounds or letters that have a meaning" (Sheeler and Markley 2000, p. 2), while *vocabulary* is defined as "total number of words we know and are able to use" (Nandy 1994, p. 1; Sesnan 2001, p. 123).

We can see, based on some scholars' view points of word and vocabulary, that *word* is the smallest meaningful unit of language used for making phrases and sentences that usually represents an object, idea, action, etc. *Vocabulary* is seen as "a set of lexemes - the study of vocabulary items – which includes single words, compound words and idioms". In other words, a word is a form which can occur in isolation and have meaning, or a sound or combination of sounds forming a unit of the grammar or vocabulary of a language, and so act as 'a part of vocabulary' in a language. Therefore, vocabulary consists of more than just single words (Read 2000, p. 20; Richards 2000, p. xi), and more than this, vocabulary concerns not only simple words in all their aspects, but also complex and compound words, as well as the meaningful units of language (Jackson and Amvela 2000, pp. 1-2). Regarding vocabulary learning, there is no question that vocabulary learning is referred to as learning "a collection or the total stock of words in a language that are used in particular contexts". To be precise, vocabulary learning means learning a package of sub-sets of words as well as learning how to use strategies to cope with unknown or unfamiliar words.

2.2.2 The Importance of Vocabulary

Of all the language skills, it is widely acknowledged that vocabulary is a very important part in English language learning, and as mentioned earlier in (Section 2.1) that no one can communicate in any meaningful way without vocabulary. Bowen et al. (1985, p. 322) and McCarthy (1990, p. iix) indicate that the single, biggest

component of any language course is vocabulary. This is consistent with Nation (1990, p. 2) who affirms that learners also see vocabulary as being a very, if not the most, important element in language learning. Learners feel that many of their difficulties, in both receptive and productive language use, result from the lack of vocabulary knowledge. However, many scholars in the fields of vocabulary learning and teaching (e.g. Allen, 1983; Carter and McCarthy, 1988; Hedge, 2000; Long and Richards, 1997; Maley, 1986; Richards, 1985; Zimmerman, 1997) indicate that vocabulary has long been neglected in the language classroom. Consequently, the main purpose of this section is to study and review the importance of vocabulary in language learning so as to look at what we know about English vocabulary as well as to reflect on how this has been applied in language teaching and learning.

Words are the tools learners use to think, to express ideas and feelings, as well as to explore and analyse the world around them. A limited vocabulary keeps them from expressing their thoughts and feelings. On the other hand, a large, rich vocabulary gives them the right words to use at the right time. Kitajima (2001, p. 470) affirms that without words that label objects, actions, and concepts, one cannot express intended meanings. "The more words one is able to use correctly, the better one will be able to express oneself easily and with self-confidence and to understand the world one lives in" (Nandy 1994, p. 1).

There is no question that in a good language learning classroom, both vocabulary and grammar are essential, but when compared vocabulary with grammar, vocabulary is much more important and should receive more attention than grammar. Allen (1983, p. 5) indicates that in the best classes, neither

grammar nor vocabulary is neglected, but vocabulary is more essential and should be taught before grammar. Likewise, Flower (2000, p. 5) states, "Words are the most important things students must learn. Grammar is important, but vocabulary is much more important". This is consistent with Lewis (1993, p. 115) who also views the importance of vocabulary as the centre of language teaching and learning since language consists of 'grammaticalised lexis, not lexicalised grammar' and 'grammar, as structure, is subordinate to lexis'. That is to say, these scholars see that the words are preceded by the grammar. This confirms what we know from our own experience that one can understand others even if they pronounce words badly, and make grammatical mistakes, but without the mediation of words, any meaningful way of communication is rather impossible. To be precise, vocabulary seems to be the key to language learning, and thus, is accepted to be more important than grammar.

"Without grammar, very little can be conveyed; without vocabulary, nothing can be conveyed" (Wilkins 1972, p. 111). This is consistent with Ellis (1994) who affirms that lexical errors tend to obstruct comprehension more than grammatical errors. Besides, Harmer (1991, p. 153) asserts that choosing words carefully in certain situations is more important than choosing grammatical structures because language learners cannot use structures correctly if they do not have enough vocabulary knowledge. This means that vocabulary is more important than grammar, and it is vital for comprehension in language skill in any situation.

Regarding vocabulary in communication, it is apparent that vocabulary is basic in learning to communicate effectively while listening, speaking, reading, and writing. This is asserted by many scholars. For example, Lewis (1993, p. iii) views the importance of vocabulary as being a basic for daily communication. He indicates that

if language learners do not recognise the meanings of the key words used by those who address them, they will be unable to participate in the conversation, even if they know the morphology and syntax. Krashen and Terrell (2000, p. 155) indicate that if language learners wish to express some idea or ask for information, they must be able to produce lexical items to convey their meaning. Besides, Richards' preface in Schmitt's (2000, p. xi) "Vocabulary in Language Teaching" indicates that vocabulary is central to communicative competence and to the acquisition of a second language. Vocabulary and lexical items are at the core of learning and communication. No amount of grammatical or other type of linguistic knowledge can be employed in communication or discourse without the mediation of vocabulary because vocabulary is shown to focus much more than knowledge of single words.

In communication situations, Davies and Pearse (2000, p. 59) also point out that vocabulary is often more important than grammar. It is frustrating for language learners when they discover that they cannot communicate effectively because they do not know many of words they need. This is also affirmed by McCarthy (1990, p. iix) who points out the importance of vocabulary that, "No matter how well the student learns grammar, no matter how successfully the sounds of L2 are mastered, without words to express a wide range of meanings, communication in an L2 just cannot happen in any meaningful ways". Since learners not only communicate in words but also they do most of their thinking in words because words are the tools they use to think, to express ideas and feelings, as well as to explore and analyse the world around them; therefore, wrong vocabulary frequently interferes with communication, and communication breaks down when learners do not use the right words (Allen 1983, p. 5; Smith 1998, p. xv).

To summarise, we can see the importance of vocabulary in that language learners with vocabulary knowledge can achieve a great deal of success in their classroom, their social life, and in their continuing acquisition of the target language. A large, rich vocabulary gives language learners the right words to use at the right time, and also enables them to express their real thoughts, ideas, and feelings. From the scholars' statements mentioned, we can see that vocabulary plays a dominant role in learning and understanding a language as well as in communication situations.

2.2.3 The Importance of Vocabulary Learning Goals

As seen in Section 2.2.2, vocabulary plays an important part in learning, understanding, and communicating in a language. It is useful if language learners understand the importance of vocabulary in successful communication and comprehension. This section specifically deals with the importance of vocabulary learning goals.

In a language classroom, language learning goals are very important since they are objectives or intended learning for particular learners working on particular tasks, made specific from the general learning aims of book or syllabus. Learning goals help language teachers in planning lessons and adapting tasks for their students. Goals will result in learning achievement in the target language (Cameron 2001, pp. 28-29). Therefore, in a language classroom, language learning goals and sub-goals must be set that are clear and appropriate because they help ensure success and achievement at each learning step, and of the task as a whole.

Similarly, in vocabulary learning, the main goals should be focused on why language learners particularly learn vocabulary both in isolation and in context. For example, students need to hear a new word in isolation as well as in context, so that

they can notice the sounds at the beginning and end, the stress pattern of the word, and the syllables that make up the word. They will need to hear the word spoken in isolation several times to catch all this information.

Additionally, the method of vocabulary instruction, both in isolation and in context, is normally based on learners' educational level: beginner, intermediate or advanced. To begin with, teachers must clarify their main goals of what they want their students to obtain for learning vocabulary items. However, possible objectives of vocabulary teaching and learning have been proposed by different scholars:

- Nandy (1994, p. 1) states, "an extensive vocabulary is most desirable, not in order that the possessor may display his sophistication by the use of a very large number of unfamiliar words, but in order that he may have at his stock exactly of the right word for every occasion".

- Ooi and Lee (1996, p. 7) propose that "the main focuses in teaching vocabulary should be to make the learner more discriminating of word form, word meaning, and word use".

- Aebersold and Field (1997, p. 139) affirm that the three main goals of vocabulary teaching and learning are to help students 1) to know the vocabulary in the text, 2) to recognise vocabulary to make sense of the text, and 3) to consider vocabulary students need to know to function in the L2/FL in the future.

- Baker and Westrup (2000, p. 38) suggests that teachers need to teach students what the word means, its pronunciation and how to use the word.

- Krashen and Terrell (2000, p. 157) assert that one goal of vocabulary learning is to provide enough vocabulary to allow language use outside the classroom, and to place the students in a position to continue second language acquisition.

- Moras and Carlos (2001, p. 1) highlight the most important objective of vocabulary teaching for advanced learners is to foster learners independence so that learners will be able to deal with new lexis and broaden their vocabulary. Learners not only understand the meaning of words, but also are able to use them appropriately, both in oral and written use of the language.

- Catalán (2003, p. 56) proposes the vocabulary learning goals as: 1) to find out the meaning of unknown words; 2) to retain them in long-term memory; 3) to recall them at will; and 4) to use them in oral or written mode.

- Intaraprasert (2004, p. 9) emphasises in his study that the main goals of vocabulary learning are: 1) to discover the meanings of a new words; 2) to retain the knowledge of newly-learned words; and 3) to expand the knowledge of English vocabulary.

- Salazar (n.d., p. 2) proposes that the purpose of vocabulary teaching and learning is to make students become independent readers. This means that students need to connect words to existing knowledge and use them in listening, reading, speaking and writing.

To summarise, vocabulary can be taught or learned effectively both in context and isolation. Some language teachers have focused on teaching their students to discriminate words. Some encourage their students to be advanced learners or independent learners. Some focus on teaching their students an extensive vocabulary stocked with a very large number of unfamiliar words. However, teaching students vocabulary all share some common goals, i.e. assist and guide students in how to learn, retain, and use words. In terms of word form, students have to focus on how to pronounce and spell words correctly and clearly. For word meaning, they need to learn how to discover and retain word meanings. Based on word use, students need to know how to practise or use them to express their real thoughts, ideas and feelings in a wide range of appropriate situations. They need to learn how to expand their vocabulary so that they can improve their language skills.

2.2.4 Vocabulary Learning Approaches

Since vocabulary is the heart of mastering a foreign language, it is necessary to discuss vocabulary learning approaches. Before starting this section, however, it should be made clear that there is no 'right' or 'best' approach for vocabulary learning (Schmitt 2000, p. 142). The best practice in any situation will depend on the type of student, the words that are targeted, the school system and curriculum, and many other factors. According to Nation (1990, p. 2); Rubin and Thompson (1994, p.79); Richek et al. (1996, p. 203), there are two general ways in which learners learn vocabulary: the direct vocabulary learning approach, and the indirect vocabulary learning approach. This section concentrates on learning approaches which language learners can make use of to decode for themselves the meanings of words, using both direct and indirect learning approaches.

"Direct or 'explicit' vocabulary learning is concerned with conscious learning processes when language learners learn vocabulary explicitly, either in context or in isolation, through direct instruction in both the meanings of individual words and word-learning strategies" (Laufer and Hulstijn 2001, p. 1). In direct learning, learners are systematically taught specific words and language structures (Richek et al. 1996, p. 203).

This approach of vocabulary learning is necessary for learning the core vocabulary - basic and important vocabulary that is used and serves in most situations. This is particularly true for the learning of basic lexical and semantic knowledge, particularly for beginner-level or less successful language learners (Nation, 1990). The learning of single words explicitly should be emphasised at an early stage of second language learning. After the language ability is developed, indirect vocabulary learning through contexts is essential to be emphasised to language learners (Coady and Huckin, 1997).

Indirect or 'implicit' vocabulary learning, on the other hand, involves learning the meaning of new words implicitly when language learners hear or see the words used in many different contexts, for example, through daily opportunities, through conversations with others and through reading extensively on their own (Read 2000, p. 39; Laufer and Hulstijn 2001, p.1). Indirect vocabulary learning is concerned with unconscious processes of learning through reading or listening without language learners necessarily being aware of the goals of learning. In this type of learning, new words are learned incidentally while reading or learning from listening to stories, films, television or the radio (Anderson and Nagy, 1991; Nation, 1982; 2001; Sternberg, 1987). Moreover, learners absorb meaning vocabulary, grammatical structures, and concepts simply from being exposed to rich language

(Richek et al. 1996, p. 203). Learning vocabulary indirectly via guessing from context is widely accepted as the most important of all sources of learning vocabulary (Nation 2001, p. 232). This approach should be emphasised for further lexical and semantic development of the words learned through explicit learning and for learning additional vocabulary.

Since, there are too many words to learn, so it is impossible to teach language learners all words. Many researchers (e.g. Carter, 1998; Gu, 2002; 2003; Hulstijn, 1992; Nation, 1990; Schmitt, 2000; Sökmen, 1997; Sternberg, 1987) have maintained that guessing the meaning of words presented in context is an effective strategy for vocabulary learning, and most vocabulary can be learned from context by means of strategies of inferences. When language learners become advanced or independent learners, they acquire the meanings of new words by using more 'inferential' or 'implicit' vocabulary learning strategies. Regarding the role of teachers at this stage, they may help learners with vocabulary directly or 'explicitly' by means of word lists, paired translation equivalents, and in related semantic sets. They may also help learners by more indirect or 'implicit' means, such as exposure to words in the context of reading authentic texts. That is to say, learners may learn vocabulary incidentally through explicit or/and implicit learning.

We can see that language learners may learn vocabulary incidentally through direct or/and indirect vocabulary learning; however, it is impossible to teach everything learners may face. Since learners not only learn vocabulary intentionally as part of the course requirements but also gain knowledge of words incidentally through their reading and listening; therefore both direct and indirect vocabulary learning approaches are very useful and essential for them to learn and acquire vocabulary

items. Learners also learn vocabulary items when vocabulary items are explicitly taught, not only individual words but also vocabulary learning strategies. Some vocabulary should be taught directly even though a great deal of vocabulary is learned indirectly.

To sum up, although there is evidence that indirect vocabulary learning is found to be beneficial, in recent studies of L2 learners, a combination of both direct and indirect vocabulary learning approach is evidenced to be superior to either direct or indirect vocabulary learning alone. Both types of vocabulary learning approaches improve learners' language abilities, and thus should be emphasised in FL learning, so that language learners know how to maximise the effectiveness of learning, using, coping with and storing newly-learned vocabulary on their own.

2.2.5 Vocabulary and the Four Language Skills

In Section 2.2.4, the researcher discussed vocabulary learning approaches. This section concentrates on vocabulary and the four language skills, including types, meanings, and functions of vocabulary as well as how many words a language learner needs to know for the four language skills.

2.2.5.1 Type of vocabulary

In order to understand how vocabulary items work or relate to the four language skills, it will be helpful to make clear first by grouping the skills into two pairs. There are two ways in so doing:

Firstly, *listening* and *speaking* are the skills necessary in oral communication, they can be grouped together. For some learners, this is the main focus of their interest. *Reading* and *writing* can be grouped together since they are the skills necessary in written communication, and this may be the main focus or motivation for other learners. Alternatively, we can group *listening and reading* together, since they

both are used to understand language which was produced by other people. To this extent, listening and reading are known as *receptive* skills, and *speaking and writing* are *productive* skills.

Based on type of vocabulary in general, there are four categories of vocabulary learning: listening vocabulary, speaking vocabulary, reading vocabulary, and writing vocabulary. Listening vocabulary refers to words learners use to understand what they hear. Speaking vocabulary is known as words they use when they speak. Reading vocabulary concerns words in prints that they recognise and use to understand what they read, and writing vocabulary involves words they use in their own writing. Pikulski and Templeton (2004, p. 2) have produced a diagram that may make a better understanding of the relationship between vocabulary and the four language skills:

Figure 2.1   Vocabulary and the four language skills
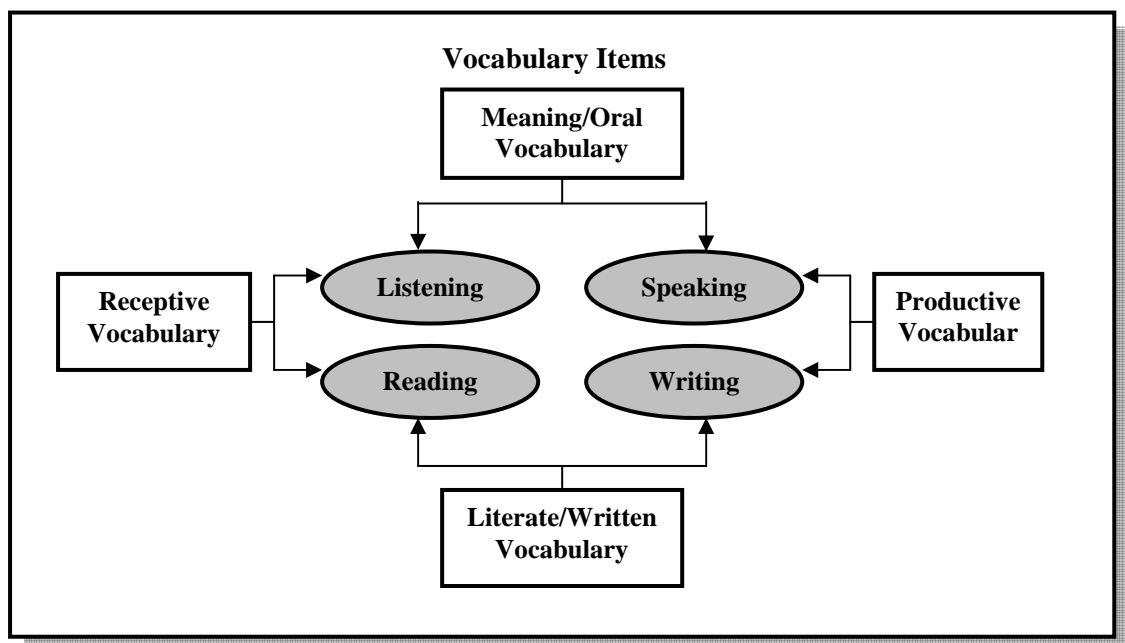
(Source: Adapted from Pikulski and Templeton 2004, p. 2)

Figure 2.1 proposed by Pikulski and Templeton (2004, p. 2) demonstrates that vocabulary items play a dominant part in learning to communicate effectively while listening, speaking, reading, and writing. Vocabulary items in the diagram above can be classified in terms of types, meanings, and functions. Based on the diagram, vocabulary is categorised into four main groups as meaning/oral vocabulary, literate/written vocabulary, receptive vocabulary, and productive vocabulary. However, it is obvious that all vocabulary items are overlapped in meanings and functions.

2.2.5.2 Meanings and Functions of vocabulary

Regarding meanings and functions of each vocabulary, let us now discuss meanings and functions of each vocabulary type concerned with the four language skills in details:

1) Meaning/Oral vocabulary refers to words language learners use in order

to understand what they hear in speech, and words they use when they speak. This involves both receptive and productive vocabulary. For listening, if they lack meaning/oral vocabulary knowledge, they would have difficulties in what they are hearing in authentic situations or from authentic texts. That is, they probably miss the points of what they are listening to. For speaking, Nation (1990, p. 93) suggests that in order to speak English, it is necessary to have a large vocabulary. In developing learners' spoken English vocabulary, it is best to give learners practice in being able to say a lot, using a small number of words. Pikulski and Templeton (2004, p. 3) affirm that language learners who have large speaking vocabulary generally tend to have large listening, reading, and writing vocabulary, and *vice versa*.

2) Literate/Written vocabulary refers to words language learners use in order to understand what they read, and words they use in writing. This, again, includes both receptive and productive vocabulary. Receptive vocabulary involves being able to recognise it when it is seen. When one reads, he or she needs a number of vocabulary items to understand texts he or she is reading. Likewise, when one writes, he or she needs a number of vocabulary items to produce his or her ideas in the writing texts.

3) Receptive vocabulary concerns words language learners use in order to understand what they hear in speech, and words used to understand what they read. It is generally acknowledged that language learners need receptive vocabulary for their listening and reading. The better one's vocabulary knowledge, the easier one would find it to understand the conversation or a large amount of reading. However, when compared vocabulary learning from listening with vocabulary learning from reading, Read (2000, p. 47) points out that vocabulary learning from listening has received much less attention than learning vocabulary items through reading.

Based on vocabulary and reading, Nation and Coady (1988, p. 98) point out that vocabulary is likely to be a predominant causal factor for reading comprehension. Laufer (1997, p. 20) emphasises that no text comprehension is possible, either in one's native language or in a foreign language, without understanding the text's vocabulary. Besides, Rubin (1993, p.1) stresses, "A good vocabulary and good reading go hand in hand. Unless language learners know the meaning of words, they will have difficulties in understanding what is read. And the more one reads, the more words one will add to one's vocabulary". That is to say, a rich vocabulary is essential to successful listening and reading comprehension.

Similarly, Pikulski and Templeton (2004, p. 1) indicate in their study that a large vocabulary is more specifically predictive and reflective of high levels of reading achievement.

4) Productive vocabulary involves words language learners use to express their thoughts and ideas in speaking and writing. Since both speaking and writing are productive skills, Nandy (1994, p. i) highlights the relationship between vocabulary and expression of speech and writing that "An extensive vocabulary, besides empowering us to give expression to a wide range of thoughts, also enables us to vary our forms of expression, and so make our speech or our writing more pleasing to hear or more interesting to read. No one can ever become an effective speaker or a ready writer if he does not have at his command a wide vocabulary to which he is continually adding." In terms of vocabulary and the written text, Schmitt (2000, p. 155) indicates that vocabulary knowledge is indispensable since the text involves the use of difficult words to convey more complicated ideas than the spoken one.

All in all, vocabulary items can be generally categorised into four main groups as 'receptive (or passive)', 'productive (or active)', 'meaning/oral' and 'literal/written' vocabulary based on their meanings and functions. It is apparent that vocabulary is vital for the improvement of the four language skills. To improve language skills, language learners need to involve receptive and productive, meaning/oral, and literal/written vocabulary. The following section particularly involves how many words a language learner needs for the four language skills.

2.2.5.3 How Many Words a Language Learner Needs for the Four Language Skills?

It is accepted that vocabulary has long been one of the main problems for language learners to develop their listening, reading, speaking, and writing. The lack of vocabulary results in the difficulties in all four language skills. To be successful in developing their language skills, language learners need to know sufficient vocabulary. Therefore, vocabulary size is an aspect of vocabulary that is worth mentioning and discussing since it is important for all four language skills.

It is important to know how much vocabulary students need to draw on for listening, speaking, reading, and writing (Nation 1990, p. 75) so that language teachers may look into ways to help their students enlarge their vocabulary. However, how many words a foreign language learner must know in order to understand authentic situations or authentic texts is still questioned. This is a factor of concern what language skill, what level of a language learner's education, what vocabulary learning goals, or any communication situations a language learner deals with. Schmitt (2000, p. 157) indicates that the number of words language learners need also depend largely upon the realistic goal: around 2,000 word families should be the threshold for daily basic conversations but this will not cover every conversational topic. Nation and Waring (1997, p. 10) propose around 2,000-3,000 word families for productive speaking and writing. This is consistent with Allen (1983, p. 105) who recommends that about 3,000 words would be necessary 'productive' items to be used in writing and speech. Laufer (1998, p. 256) puts it about 3,000 word families, while Nation and Waring (1997, p. 10) recommend that 3,000-5,000 word families is needed to provide a basis for comprehension, or to begin reading authentic texts.

Hazenberg and Hulstijn (1996) mention about 10,000 for challenging academic texts as in university textbooks, and 15,000 to 20,000 (Nation and Waring 1997, p. 10) to equal an educated native speaker of English.

In summary, in dealing with the four language skills, it is crucial for a language learner to have enough vocabulary: 2,000 word families for basic conversation; 2,000-3,000 for productive speaking and writing; 3,000-5,000 for reading authentic texts; 10,000 for challenging university textbooks; and 15,000 to 20,000 to equal an educated native speaker of English. Expanding the vocabulary is one of the main goals of vocabulary learning since a language learner with rich, large vocabulary will achieve success both inside and outside language classroom as well as in their social life. Therefore a language learner should be taught skills known as language learning strategies to expand their vocabulary. The following section particularly involves elements or aspects of knowing a word proposed by different researchers.

2.2.6 What Is Involved in Knowing a Word?

In Section 2.2.5, the researcher discussed vocabulary and the four language skills regarding type, meaning, and function of vocabulary, and examined how much vocabulary a language learner should know to be effective in the four language skills. This section concentrates on many crucial aspects of knowing a word.

Knowing a word means knowing at least its forms, its meaning, and its basic usage in context receptively and productively. Knowing a word requires conscious and explicit learning mechanisms whereas using a word involves mostly implicit learning and memory (Ellis, 1994). Besides receptive and productive knowledge, knowing a word involves several crucial elements or aspects of knowing, such as

pronunciation, spelling, meaning, register, morphology, syntax, and collocation, and so on. However, language learners do not need to know all these aspects. What aspects of knowing a word they should be proficient in depends upon what language skill is required; what is the main goal of their vocabulary learning; what communication situations a language learner is dealing with, and what level of a language learner's education is: beginner, intermediate, or advanced. For example, young learners do not need to deal with register, morphology, syntax, or collocation since these are too complicated for them whereas advanced learners have to do so if expecting excellence in vocabulary learning.

With regard to aspects of knowing a word, many researchers have proposed some elements or aspects of knowing a word. Examples are Richards (1976); Ellis and Sinclair (1989); Taylor (1990; 1992); Coady (1993); Ooi and Lee (1996); Ur (1996; 1999); Qian (2002) and Nation (2005). What follow are aspects of knowing a word proposed by those researchers:

1) Richards (1976, p. 83; 1985, pp. 177-182) offers the assumptions concerning knowing a word as follows:

1. Knowing a word means knowing the degree of probability of encountering that word in speech or print. For many words we also 'know' the sort of words most likely to be found associated with the words.
2. Knowing a word implies knowing the limitations imposed on the use of the word according to variations of function and situation.
3. Knowing a word means knowing the syntactic behaviour associated with the word.
4. Knowing a word entails knowledge of the underlying form of a word and the derivations that can be made from it.
5. Knowing a word involves knowledge of the network of associations between that word and other words in the language.
6. Knowing a word means knowing the semantic value of a word.
7. Knowing a word means knowing many of the different meanings associated with a word

2) Ellis and Sinclair (1989, p. 28) propose that the aspects of 'knowing a word' mean:

1. to understand it when it is written and/or spoken
2. to recall it when we need it
3. to use it with the correct meaning
4. to use it in a grammatically correct way
5. to pronounce it correctly
6. to know which other words we can use with it
7. to spell it correctly
8. to use it in the right situation
9. to know if it has positive or negative associations

3) Taylor (1990, pp. 1-3; 1992, pp. 3-6) summarises eleven aspects of 'knowledge of a word' to serve the purposes of vocabulary teaching and learning. These include:

1. **Mother tongue.** Knowing of how things are said in different languages. Language learners use mother tongue for helping word understanding in the second language by linking the second language sounds to sounds of their mother tongue.
2. **Sound-spelling.** It is crucial for language learners to be aware of the relationship of sound and spelling because many English words sound similarly though they have different spelling, and vice versa. Examples are, *hair – hare*; *dear – deer*; and *tear* (as a noun) – *tear* (as a verb), etc.
3. **Denotation**. Language learners can find out the direct meaning of words in the dictionary. For example, the direct meaning of *'home'* is 'the house where one lives'.
4. **Word grammar.** Knowledge of word grammar involves word form and the derivations that can be made from it. For example, the word *'unemployment'* has a common prefix denoting 'opposite' (un-), a common noun suffix (-ment), and is derived from the verb 'employ'.
5. Collocation. This refers to words which typically come or occur together. For example, the word *'perform'* is used with *'a task'* but the word 'do' comes with 'homework'.
6. **Polysemy.** A word with two or more closely related meanings as *'foot'* in the following sentences: *Maggie hurt her <u>foot</u>.*
                                George stood at the <u>foot</u> of the hill.
    The foot is the lowest part of the hill just as the foot is the lowest part of the human body.
7. **Frequency.** Knowledge of some items in English are far more frequent in speech than in writing, e.g. '*indeed*', '*well*', '*actually*'.
8. **Connotation.** Besides its direct meaning in the dictionary, some words have second or deep meaning. Language learners need to know a word that gives an extra dimension to its literal meaning. For example, the denotation - direct meaning - of 'home' is described as 'a place where people stay or live in', but in connotation – second or deep meaning – *'home'* might be represented or implied as *'happiness'* or *'warmth'* or *'security'*.
9. **Register.** This refers to the appropriate use of a vocabulary item at any situations. For example, *'Want a fag?'* is acceptable only among friends while 'Would you like a cigarette?' is appropriate in most contexts.
10. **Vocabulary within written discourse.** This involves reference, linking, sequencing, and discovering the meaning of unknown vocabulary items in context.
11. **Vocabulary within spoken discourse.** This concerns intonation, stress and pausing, and with the words speakers use to signal the beginnings and endings of sections of discourse.

4) Coady (1993, p. 13) proposes that knowing a word involves knowing:

- the degree of probability of when and where to encounter a given word and the sort of words to be found with it;

- the limitations imposed on it by register;
- its appropriate syntactic behaviour;
- its underlying form and derivations;
- the network of associations it has;
- its semantic features, its extended or metaphorical meanings

5) Ooi and Lee (1996, p. 7) conclude in their study that knowing a word concerns knowing:

- word form, including pronunciation, spelling, inflections and derivations;
- word meaning involving basic and literal meaning, derived and figurative meanings, semantic relation and connotation; and
- word use concerning sub-categorisation, collocation, sociolinguistic and stylistic, restrictions, and slang and idioms).

6) Ur (1996, pp. 60-62) suggests that knowing a word concerns knowing:

- word form (pronunciation and spelling);
- grammar;
- collocation;
- aspects of meaning (denotation, connotation, appropriateness, and meaning relationships); and
- word formation

7) Qian (2002, p. 515) proposes that knowing a word concerns knowing:

- breadth of vocabulary knowledge (knowledge of word meaning of which one has at least some superficial knowledge); and
- depth of vocabulary knowledge (knowledge of vocabulary which language learners can use in their speech and writing).

8) Nation (2005, pp. 583-585) made a list of various aspects concerning knowing a word. The aspects of knowing a word proposed by Nation (2005) fit into three groups. These include knowing the form of a word; knowing the meaning of a word; and knowing how a word is used. Knowing the form of a word includes spelling, sound, and word parts. Knowing the meaning of a word involves linking its form and meaning, knowing a concept for a word and what it can refer to, and knowing what other words of related meaning it can be associated with. Knowing how a word is used concerns the grammar of the word, including parts of speech and sentence patterns it fits into, collocates of the words, and whether the word is formal

or informal, polite or rude, used mainly by children and so on, or has no restrictions on its use. As seen in table 2.1 below is the list of aspects of knowing a word:

Table 2.1 What is involved in knowing a word?

What Is Involved in Knowing a Word?		
Form:	spoken	R What does the word sound like?
		P How is the word pronounced?
	written	R What does the word look like?
		P How is the word written and spelling?
	word parts	R What parts are recognisable in this word?
		P What word parts are needed to express the meaning?
Meaning:	form and meaning	R What meaning does this word form signal?
		P What word form can be used to express this meaning?
	concepts and referents	R What is included in the concept?
		P What items can the concept refer to?
	associations	R What other words does this make us think of?
		P What other words could we use instead of this one?
Use:	grammatical functions	R In what patterns does the word occur?
		P In what patterns must we use this word?
	collocations	R What words or types of words occur with this one?
		P What words or types of words must we use with this one?
	constraints on use	R Where, when, and how often would we expect (register, frequency, etc.) to meet this word?
		P Where, when, and how often can we use this word?

Note: R= Receptive; P= Productive *(Nation 2005, p. 584)*

In summary, knowing a word proposed by different scholars mentioned above involves many crucial aspects. All of these aspects concern a part of word form, word meaning, and word use. Knowing word form concerns how the word sounds, how it is spelt, and the grammatical changes that can be made to it. Knowing word meaning(s) is not just knowing its dictionary meaning(s), it also means knowing how it relates to other word commonly associated with it (its collocations) as well as its connotation, register, etc. Knowing word use involves knowing its patterns of occurrence with other words, and its particular types of language use. Some aspects proposed are basic, quite simple, and appropriate for young language learners whereas some are more complex, such as connotation and register that require a great level of language competence. Besides, the aspects of knowing a word also mainly involve both

receptive and productive knowledge that are used in language skills. Regarding vocabulary learning, it is certain that learning vocabulary items means learning the form of the new words; the meaning of the words; and the use of the words.

2.2.7 Which Word Needs to Be Learned?

It is essential to know which words students need to learn in dealing with particular context so that language teachers may take into consideration for planning their lessons. As there are in every language too many words a foreign language learner must know in order to understand authentic situations or authentic texts is still questioned and it is difficult to answer. This might be a factor of what language skill is required, what is the level of a language learner's education, or what communication situations a language learner deals with.

Nation (1990, p. 19) affirms that the words language learners need to learn also depend largely upon the vocabulary learning goal. Since the high-frequency words occur frequently in all kinds of texts, then high-frequency words (the most frequent 2,000 words) must be taught. This is because they are essential for any real language use (Nation, 1995). This is consistent with Schmitt (2000, p. 142) who proposes that a vocabulary about 2,000 words would be a realistic goal. If a language learner is dealing with most kinds of academic texts, then academic vocabulary must be focussed. Similarly, if a language learner is dealing with a specialised text, technical vocabulary, then, must be taught. Since the low-frequency words do not occur very frequently, strategies for dealing with these words must be taught and trained to learners.

To sum up, learning high-frequency words will help language learners deal with all kinds of text. Learning academic vocabulary is a high priority goal for

learners who wish to do academic study in English. Likewise, technical vocabulary will help language learners identify words that will be useful for a particular discipline, or writing technical reports. Strategies that best suit for dealing with low-frequency words must be trained to language learners. The next part particularly concentrates on vocabulary learning strategies.

2.3 Vocabulary Learning Strategies

2.3.1 Introduction and Purpose of the Section

This section mainly aims to study various types of vocabulary learning strategies. As vocabulary learning is a key aspect of language learning; therefore before discussing vocabulary learning strategies in detail, it is worth mentioning briefly language learning strategies (LLSs) for their background that may shed some light on and link to vocabulary learning strategies (VLSs).

Strategies are the mental and communicative procedures learners use in order to learn and use language (Nunan 1999, p. 171). Learning strategies are "particular approaches or techniques that learners employ to try to learn a second language" (Ellis 1997, pp. 76-77), or "the thoughts and actions that individuals use to accomplish a learning goal" (Chamot 2004, p. 14). Besides, Rubin (1987, p. 22) has defined language learning strategies as "strategies which contribute to the development of the language system which the learner constructs and affect learning directly". Likewise, language learning strategies are defined as "the special thoughts or behaviours that individuals use to help them comprehend, learn, or retain new information" (O'Malley and Chamot 1990, p. 1). Furthers, Oxford (1990, p. 1) has specifically defined learning strategies as "tools for active, self-directed involvement,

which is essential for developing communicative competence. Appropriate language learning strategies result in improved proficiency and greater self-confidence". The main purposes of language learning strategies taken by learners are "to make learning easier, faster, more enjoyable, more self-directed, and more transferable to new situations" (Oxford 1990, p. 8).

From the definitions and purposes of language learning strategies, we can see that language learning strategies are any set of actions, plans, tactics, thoughts, or behaviours that language learners have made use of to help them to facilitate the comprehension, storage, retrieval, and use of information. Besides the definitions of language learning strategies, the features of language learning strategies are also worth discussing as they may share some common characteristics with vocabulary learning strategies. Table 2.2 below shows the key features of language learning strategies proposed by Oxford (1990).

Table 2.2 Key features of language learning strategies

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

Source: Language Learning Strategies (Oxford 1990, p. 9)

Past research works on language learning strategies employed by both second and foreign language learners learning a target language, mainly English, have been

widely conducted by several researchers. The findings of these studies (e.g. Oxford, 1990; McIntyre and Noels, 1996) reveal that there are a variety of language learning strategies that have the potential to facilitate language learning. In language learning, English either as a second language (ESL) or a foreign language (EFL), Carroll (1977) mentions that it is rather difficult and frustrating for language learners to learn a foreign language because learning a foreign language requires great effort. Language learners need to struggle to find suitable and effectives ways for themselves how to comprehend and retain knowledge of the target language.

As we have seen in Section 2.2.2, vocabulary has been found as an essential component of SLA/EFL classroom (Kitajima 2001, p. 470), and also as a major resource for language use, and one cannot learn a language without learning vocabulary (Cameron 2001, p. 94). Therefore, vocabulary learning is of great importance since vocabulary is a key unit in building up skills and knowledge. However, learning vocabulary items is not simply a matter of committing them to memory, but how to use them in appropriate situations as well as how to expand the knowledge of one's vocabulary is also crucial.

Since learners may encounter new words in a variety of ways in the classroom through the teacher's language, through the language of other learners, or through learning materials, vocabulary has long been found as language learners' big problem that obstruct their language learning. Meara (1980; 1982) and Nation (1990) affirm that many of language learners' difficulties in both receptive and productive use of vocabulary arise from their inadequate acquisition of lexical knowledge. However, it is evidenced that language learners learn words in a variety of ways, vocabulary learning strategies; therefore, should include strategies for knowing a

word as well as for using a word (Ellis, 1994). Furthermore, Hedge (2000, p. 126) suggests that the ultimate role of the teacher, besides explaining new words to learners, may be to build independence in learners by training them good strategies for vocabulary learning.

In order to cope with new vocabulary when it occurs, learn unfamiliar words, and be successful and independent language learners, Miller and Gildea (1987); and Nation (1990) suggest that language learners require a tremendous effort in learning of new words. They also need to find the appropriate and effective ways for themselves how to learn, acquire, comprehend, retain, recall, use and expand their vocabulary. Language learners not only need to expand their knowledge of words, but they also need to understand words well enough to be able to use them appropriately during their social life. It is useful to teach language learners in strategy use so that they can be autonomous or self-directed vocabulary learners. Harmer (1991) and Schmitt (1997) affirms that introducing language learners to a wide range of strategies is very useful since they can choose the individual strategies that suit their individual learning styles. However, language learners may not adopt strategies automatically, and they learn words in a variety of ways, and thus some explicit teaching of different VLSs may be helpful for their success or being independent language learners (Cameron 2001, p. 93).

Recent studies in second language vocabulary learning (e.g. Brown and Perry, 1991; Sanaoui, 1995; Schmitt, 1997; Stőffer, 1995) indicate that certain learning strategies are more effective in learning and acquiring new vocabulary items. However, strategies for learning vocabulary items have been proposed by many

researchers. What follow are definition and classification of vocabulary learning strategies proposed by different researchers:

2.3.2 Definition and Classification of Vocabulary Learning Strategies

Language learners generally learn new words in two stages. At the first stage, when language learners hear or read a new word, they usually know and recognise it, but might be unable to use it in their speaking or writing. Later, when they are ready to use the word, it becomes their active vocabulary (Baker and Westrup 2000, p. 38). However, to be able to use new words is not easy or simple. Rather, it is a long and time-consuming process. Language learners need to learn and know how to record, store, and practise new words by using different types of vocabulary learning strategies (Miller and Gildea, 1987; Nation, 1990). This may be because one strategy may not be better than another, or no single strategy has been proved the best of all (Intaraprasert 2005, p. 169). Rather, each strategy for vocabulary learning may be appropriate for its purpose (Oxford, 1990; Schmitt, 2000).

Vocabulary learning strategies are a part of language learning strategies which in turn are a part of general learning strategies (Nation 2001, p. 217). Therefore, the definition of vocabulary learning strategy stems from that for language learning strategies (Catalán 2003, p. 55). Cameron (2001, p. 92) defines vocabulary learning strategies as "the actions that learners take to help themselves understand and remember vocabulary items". Catalán (2003, p. 56) adopts the definition of vocabulary learning strategies from Rubin (1987); Wenden (1987); Oxford (1990); and Schmitt (1997) as the working definition in her study as "knowledge about the mechanisms (processes, strategies) used in order to learn vocabulary as well as steps or actions taken by students (a) to find out the meaning of unknown words, (b) to

retain them in long-term memory, (c) to recall them at will, and (d) to use them in oral or written mode". Similarly, Intaraprasert (2004, p. 9) has defined vocabulary learning strategies as "any set of techniques or learning behaviours, which language learners reported using in order to discover the meaning of a new word, to retain the knowledge of newly-learned words, and to expand their knowledge of vocabulary."

In order to learn and acquire vocabulary and enlarge vocabulary size, that is, knowing a large number of words with their meanings, or how to pronounce and use them correctly, language learners need to deal with a wide range of vocabulary learning strategies and every language learner has their own way for learning vocabulary. Vocabulary learning strategies will also be very different depending on whether language learners' primary goal is to understand the language, either in reading or listening, or to produce it, either in speaking or writing. Schmitt (2000, p. 133) states, "active learning management is important. Good language learners do many things such as use a variety of strategies, structure their vocabulary learning, review and practise target words and so on". Besides, Gu and Johnson (1996) indicate that successful strategy users need a strategy for controlling their strategy use. This involves choosing the most appropriate strategy from a range of known options and deciding how to pursue the strategy and when to switch to another strategy.

In classifying learning strategies, scholars have different ways of classifying language learning strategies (Intaraprasert 2004, p. 10). These classification systems give a crucial contribution to the knowledge of vocabulary strategies. Below is a summary, brief discussion as well as consideration of the classification systems of vocabulary learning strategies which have been identified in different contexts by different scholars, such as Cohen (1987; 1990); Rubin and Thompson (1994); Stőffer

(1995); Gu and Johnson (1996); Lawson and Hogben (1996); Schmitt (1997);

Weaver and Cohen (1997); Cook (2001); Decarrico (2001); Nation (2001, 2005);

Hedge (2000); Pemberton (2003); and Intaraprasert (2004):

2.3.2.1 Vocabulary Learning Strategy Classification by Cohen (1987; 1990)

Strategies for dealing with vocabulary items by Cohen (1987, p. 43; 1990,

pp. 21-37) were put together and could be grouped under three main categories as

follows:

Category 1: Strategies for Remembering Words
- Using Rote-repetition by repeating the word and its meaning until it seems to have stuck;
- Using Mnemonic Associations:
  1. By linking the word to the sound of a word in the native language to the sound of a word in the language being learned, or to the sound of a word in another language;
  2. By attending to the meaning of a part or several parts of the word;
  3. By noting the structure of part or all of the word;
  4. By placing the word in the topic group to which it belongs;
  5. By visualising the word in isolation or in a written context;
  6. By linking the word to the situation in which it appeared;
  7. By creating a mental image of the word;
  8. By associating some physical sensation to the word;
  9. By associating the word to a keyword; and
  10. By using of mnemonic device in order to create a cognitive link between an unfamiliar foreign language word or its translation by means of a cognitive mediator

Category 2: Semantic Strategies:
- Thinking of synonyms so as to build a network of interlinking concepts;
- Clustering words by topic group or type of word; and
- Linking the word to the sentence in which it was found or to another sentence;

Category 3: Vocabulary Learning and Practising Strategies
- Word and Structure Analysis (analyse the word according to its roots, affixes, and inflections as a way to understand its meaning);
- The Learning of Cognates (words in two languages which are from the same source);
- Using a Dictionary;
- The Use of Flash Cards;
- Grouping; and
- Cumulative Vocabulary Study

Strategies for dealing with vocabulary items proposed by Cohen (1987;

1990) have been found to share some common characteristics; therefore, could be put

together to create the new three main categories. They include strategies for remembering

words, semantic strategies, and vocabulary learning and practising strategies.

2.3.2.2 Vocabulary Learning Strategy Classification by Rubin and Thompson (1994)

Rubin and Thompson (1994, pp. 79-82) introduced three main categories of vocabulary learning strategies with sub-categories for learners to employ as follows:

Category 1: Direct Approach
- Put the words and their definitions on individual cards;
- Say the words aloud or write them over and over again as they study;
- Compose sentences with the words they are studying;
- Tape record the words and their definition, if they prefer to learn through the ear; and
- Colour-code words by parts of speech, if they prefer to learn through the eye

Category 2: Use Mnemonics
- Use rhyming;
- Use alliteration;
- Associate words with the physical world;
- Associate words with their functions;
- Use natural word associations, such as opposites;
- Learn classes of words;
- Learn related words;
- Group words by grammatical class; and
- Associate words with context.

Category 3: Indirect Approach
- Read a series of texts on a related topic;
- Guess the meaning of words from context; and
- Break up the word into components

Rubin and Thompson (1994) formulated three main categories of strategies for vocabulary learning that have been reported by language learners to be effective. These include Direct Approach, Use Mnemonics, and Indirect Approach. In Direct Approach, language learners pay attention on learning words in lists or completing various vocabulary exercises. Mnemonics are techniques that make memorisation easier by organising individual items into patterns and linking things together. In Indirect Approach, a lot of vocabulary is learned through reading and listening; therefore it is crucial to focus on strategies for dealing with unfamiliar words indirectly instead of memorising them.

2.3.2.3 Vocabulary Learning Strategy Classification by Stőffer (1995)

Stőffer (1995) demonstrated the findings of her research work about "University Foreign Language Students' Choice of Vocabulary Learning Strategies as Related to Individual Difference Variables" and shows 53 items which she has clustered into 9 categories by factor analysis as follows:

1. Strategies involving authentic language use;
2. Strategies used for self-motivation;
3. Strategies used to organise words;
4. Strategies used to create mental linkages;
5. Memory strategies;
6. Strategies involving creative activities;
7. Strategies involving physical action;
8. Strategies used to overcome anxiety;
9. Visual/auditory strategies

Stőffer (1995) developed a questionnaire which contained 53 items on the vocabulary learning strategy inventory (VOLSI) and the strategy inventory for language learning (SILL) designed to measure specifically vocabulary learning strategies. She made a substantial list of vocabulary learning strategies employed by 707 university language learners at the University of Alabama enrolling Japanese, Russian, German, French and Spanish as foreign languages. The research work conducted by Stőffer (1995) shows that vocabulary learning strategies employed by university foreign language learners under this investigation was related to several individual difference variables such as previous language learning experience, course level, language studied, previous vocabulary learning strategies instruction, age, and gender.

2.3.2.4 Vocabulary Learning Strategy Classification by Gu and Johnson (1996)

Gu and Johnson (1996, p. 51) made use of a questionnaire to investigate Chinese advanced learners' use of English vocabulary learning strategies. What follow are vocabulary learning strategies classified by Gu and Johnson (1996):

- Beliefs about vocabulary learning;
- Metacognitive regulation;
- Guessing strategies;
- Dictionary strategies;
- Note-taking strategies;
- Memory strategies (rehearsal);
- Memory strategies (encoding);
- Activation strategies

Gu and Johnson (1996) developed a substantial list of EFL vocabulary learning strategies reported employing by advanced Chinese learners. The study has profiled the beliefs and strategies of adult Chinese learners for learning EFL vocabulary. A wide variety of English vocabulary learning strategies developed by Gu and Johnson (1996) are grouped into eight categories as shown above.

2.3.2.5 Vocabulary Learning Strategy Classification by Lawson and Hogben (1996)

Lawson and Hogben (1996, pp. 118-119) classified vocabulary learning strategies based on the information obtained through the think-aloud procedure and interviews provided by 15 university students learning Italian in Australia. The individual vocabulary learning strategies were classified under four different categories:

Category 1: Repetition
- Reading of related word;
- Simple rehearsal;
- Writing of word and meaning;
- Cumulative rehearsal;
- Testing

Category 2: Word Feature Analysis
- Spelling;
- Word classification;
- Suffix

Category 3: Simple Elaboration
- Sentence translation;
- Simple use of context;
- Appearance similarity;
- Sound link

Category 4: Complex Elaboration
- Complex use of context;
- Paraphrase;
- Mnemonic

As shown above, the individual vocabulary learning strategies recognised by Lawson and Hogben (1996) have been classified under four different categories. These include Repetition, Word Feature Analysis, Simple Elaboration, and Complex Elaboration. The first category comprises five strategies, the second three strategies, the third four strategies, and the fourth three strategies for learning vocabulary items.

2.3.2.6 Vocabulary Learning Strategy Classification by Schmitt (1997)

Schmitt (1977, pp. 207-208) has developed a taxonomy of vocabulary learning strategies based on an extensive language learning strategies' taxonomy organised by Oxford's (1990, pp. 17-21), including Memory, Cognitive, Compensation, Metacognitive, Affective, and Social categories. The following is the strategy inventory offered by Schmitt (1997):

Category 1: Strategies for the discovery of a new word's meaning
- **Determination Strategies (DET)**
  - Analyse part of speech;
  - Analyse affixes and roots;
  - Check for L1 cognate;
  - Analyse any available pictures or gestures;
  - Guess meaning from textual context;
  - Use a dictionary (bilingual or monolingual)
- **Social Strategies**
  - Ask teacher for a synonym, paraphrase, or L1 translation of new word;
  - Ask classmate for meaning

Category 2: Strategies for consolidating a word once it has been encountered
- **Social Strategies**
  - Study and practise meaning in a group;
  - Interact with native speaker

- **Memory Strategies**
  - Connect word to a previous personal experience;
  - Associate the word with its coordinates;
  - Connect the word in its synonyms and antonyms;
  - Use semantic maps;
  - Image word form;
  - Image word's meaning;
  - Use Keyword Method;
  - Group words together to study them;
  - Study the spelling of a word;
  - Say new word aloud when studying;
  - Use physical action when learning a word
- **Cognitive Strategies**
  - Verbal repetition;
  - Written repetition;
  - Word lists;
  - Put English labels on physical objects;
  - Keep a vocabulary notebook
- **Metacognitive strategies**
  - Use English-language media (songs, movies, newscasts, etc.);
  - Test oneself with word tests;
  - Skip or pass new word;
  - Continue to study word over time

Schmitt (1997) made use of a vocabulary learning strategy questionnaire in his study in order to survey strategy language learners' reported employing, and how useful they rated each strategy. The list of strategies is divided into two major classes: 1) strategies that are useful for the initial discover of a word's meaning, and 2) those useful for consolidating a word once it has been encountered. Based on strategies for discovering meaning, bilingual dictionaries, asking teacher for paraphrase/synonym, and analysing pictures or gestures were the strong preferences. In terms of strategies for consolidating meaning, say new word aloud, written repetition, connect word with synonyms/antonyms, continue overtime, study spelling, take notes in class, and verbal repetition were preferred. The least helpful strategy of discover meaning is to skip or pass new word. The least helpful strategies of consolidate meaning consisted of image word's meaning, use cognates in study, keyword method, and image word form.

2.3.2.7 Vocabulary Learning Strategy Classification by Weaver and

Cohen (1997)

Weaver and Cohen (1997) classified learning strategies for acquiring vocabulary which include:

Category 1: **Categorisation:**
- Categorise vocabulary items according to meaning,
- Categorise vocabulary items according to part of speech,
- Categorise vocabulary items according to formal vs. informal language forms,
- Categorise vocabulary items according to alphabetical order, or types of clothing or food;

Category 2: Keyword mnemonics:
- Find a native-language word or phrase with similar sounds,
- create a visual image that ties the word or phrase to the target-language word;
- Learn *pato* in Spanish by selecting the similar-sounding English word 'pot'
- Create a mental image of a duck with a pot on its head);

Category 3: Visualisation:
- Learn vocabulary items through mental images, photographs, charts, graphs, or the drawing of pictures;

Category 4: Rhyme/rhythm:
- Make up songs or short ditties;

Category 5: Language transfer:
- Use prior knowledge of native, target, or other language structures;

Category 6: Repetition:
- Repeat words over and over to improve pronunciation or spelling,
- Try to practise the words using all four language skills:
    - write new sentences,
    - make up stories using as many new words as possible,
    - read texts that contain those new words,
    - purposely use the words in conversation and listening for them as they are used by native speakers

These vocabulary acquisition strategies were excerpted from Weaver and Cohen (1997) study, "Strategies-Based Instruction: a Teacher-Training Manual". Weaver and Cohen (1997) classified strategies for acquiring vocabulary into six main categories as the Categorisation, Keyword mnemonics, Visualisation, Rhyme/Rhytm, Language Transfer, and Repetition. These strategies were found to share similar characteristics of words in terms of word meaning, word form, and word use like other researchers.

2.3.2.8 Vocabulary Learning Strategy Classification by Hedge (2000)

Hedge (2000, pp.117-118) explained that learning new words in order to understand, categorise, and store them in the mental lexicon, language learners need to use a wide range of strategies. She offered two main strategies for learning vocabulary items as follows:

Category 1: Cognitive Strategies
- Making associations;
- Learning words in groups;
- Exploring range of meaning;
- Using key words. A keyword is a word chosen from the mother tongue which sounds like the new word in the second or native language, and where it is possible to make some kind of association between the two words;
- Reading on for evidence in the context of the text;
- Inference strategy

Category 2: Metacognitive Strategies
- Consciously collecting words from authentic contexts;
- Making word cards;
- Categorising words into lists;
- Reactivating vocabulary in internal dialogue;
- Making a word-network of vocabulary associated with a particular item.

Vocabulary learning strategies identified by Hedge (2000) were classified under two main categories, namely, Cognitive and Metacognitive strategies. Cognitive strategies concern strategies for using the vocabulary and for understanding how vocabulary works. Metacognitive strategies generally involve preparing, planning for learning, selecting, and using learning strategies, monitoring strategy use, orchestrating various kinds of strategies, and evaluating the effectiveness of strategy use and learning.

2.3.2.9 Vocabulary Learning Strategy Classification by Cook (2001)

Cook (2001, pp. 66-73) classified vocabulary learning strategies into two main categories which are:

Category 1: Strategies for getting meaning:
- Guessing from situation or context;
- Using a dictionary;
- Making deductions from the word-form;

- Linking to cognates.

Category 2: Strategies for acquiring words:
- Repetition and rote learning;
- Organising words in the mind;
- Linking to existing knowledge

Cook (2001) identified two main categories for understanding and using vocabulary which include strategies for getting meaning, and strategies for acquiring words. She suggested the implication is how teaching can fit the language learners' ways of learning vocabulary items. Language learners can get meaning of vocabulary items by guessing the meaning from context, using a dictionary, making deductions from the word form, and linking vocabulary items to cognates. They may acquire vocabulary items by repetition and rote learning, organising words in their mind, and linking words to existing knowledge.

2.3.2.10 Vocabulary Learning Strategy Classification by Decarrico (2001)

According to Decarrico (2001), incidental vocabulary learning occurs when the mind is focussed elsewhere, such as on understanding a text, or using language for communicative purpose. Incidental learning from exposure to texts will be greatly facilitated if learners use vocabulary learning strategies. As can be seen below is four vocabulary learning strategies proposed in a list by Decarrico (2001):

Category 1: Guessing Meaning form Context;
Category 2: A Mnemonic Device or the Keyword Method;
Category 3: Vocabulary Notebooks;
Category 4: Other Learner Strategies:
- Check for an L1 cognate;
- Study and practise in peer groups;
- Connect a word to personal experience or previous learning;
- Say a new word aloud when studying;
- Use verbal and written repetition;
- Engage in extended rehearsal (review new material soon after initial learning and then at gradually increasing intervals)

Vocabulary learning strategies suggested by Decarrico (2001) is shown in four main groups, including guessing meaning from context, a mnemonic device or

the keyword method, vocabulary notebooks, and strategies involving checking for an L1 cognate; studying and practising in peer groups; using verbal and written repetition; and engaging in extended rehearsal. She mentioned that language learners have not been taught the majority of words. Therefore, vocabulary learning is more likely to be mainly implicit (incidental). She further suggested that strategies should aid both in discovering the meaning of new word and in consolidating a word once it has been encountered. Thus, language learners should approach independent learning of vocabulary by using a combination of extensive reading and self-study strategies.

2.3.2.11 Vocabulary Learning Strategy Classification by Nation (2001; 2005)

A taxonomy of kinds of vocabulary learning strategies offered by Nation (2001, pp. 217-222; 2005, pp. 589-593) was put together and, then reclassified under three general classes of strategies as follows:

Category 1: Planning: (Choosing what to focus on and when to focus on it)
- Choosing words;
- Choosing the aspects of word knowledge;
- Choosing strategies; and
- Planning repetition

Category 2: Sources: (Finding information about words)
- Analysing the word;
- Using word parts;
- Learning from word cards;
- Using context;
- Using a dictionary;
- Consulting a reference source in L1 and L2; and
- Using parallels in L1and L2

Category 3: Processes: (Establishing knowledge)
- Noticing;
- Retrieving; and
- Generating

Nation (2001; 2005) provided a taxonomy of vocabulary learning strategies, which can be grouped under the three main categories comprise planning,

finding information, establishing knowledge. The Planning category is divided into four sub-categories. The Sources category was combined to create seven sub-categories, and the Processes category consists of three sub-categories. From the features of all three main categories of vocabulary learning strategies, they could be assumed that vocabulary learning strategies proposed by Nation (2001; 2005) involve both cognitive and metacognitive strategies since both include a wide range of strategies of different complexity.

2.3.2.12 Vocabulary Learning Strategy Classification by Pemberton (2003)

In order to remember vocabulary, a variety of different strategies are essential. Pemberton offered two main categories of remembering vocabulary as follows:

Category 1: Strategies for Learning Vocabulary:
1. **Memorisation:**
   - Say or write the words one is learning
   - Record the words/phrases one is learning on tape, MD or as audio files, and play them to himself/herself whenever he/she has some spare time
   - Ask a native or fluent speaker to record target words for one to practise listening
   - Play audiotapes or videotapes repeatedly (e.g. songs or parts of a movie)
   - Write the words one is learning on pieces of paper/stick-it notes and put them round one's room/home.
   - Put the words into sentences
   - Connect the new words to words belonging to the same topic or situation that he/she already knows (e.g. in tables, diagrams, or pictures)
   - Use the Keyword Method by associating the target word in the foreign language with a word that sounds similar in his/her own language
   - Combine the target word with similar-sounding English words to form picture – e.g. 'mourning (= 'being sad because of someone's death') + 'morning' …. Picture: being sad about someone who died in the morning'
   - Use one's knowledge of the parts or roots of words to remember the meaning
2. **Using Words:**
   - Create sentences of one's own for the words he/she is learning, relating them to his/her own situation
   - Write a story that includes all the words one has learned
   - Write about the topic using the vocabulary learned, or have a discussion or conversation with a partner, trying to use the words appropriately
3. **Recycling Words one has learned:**
   - Follow a news story that is printed or broadcast every day for several weeks
   - Focus on one type of news story that occurs almost ever day
   - Watch movies or read books or magazines on particular topics

- Read books at particular vocabulary levels
- Read several books written by the same author (e.g. Jane Austen)
- Read several books featuring the same characters (e.g. Sherlock Holmes)

Category 2: Strategies for Reducing the 'Forgetting Problem':
- Learn words repeatedly, with increasing intervals between learning sessions
- Have the words one wants to learn with him/her whenever he/she goes, so that he/she can use any 'dead' time. Word cards or vocabulary notebooks are useful
- Set aside a regular time for vocabulary learning or memorising (e.g. just before going to bed, or travelling to and from university)
- Spend more time on the words that one finds difficult

Pemberton (2003) indicated that one of the biggest problems with vocabulary learning is that what is 'learned' today is often forgotten tomorrow, and most of the language learners seem to have all experienced this problem. He proposed a variety of strategies for vocabulary learning. There were two main categories in his vocabulary learning strategy classification, including strategies for learning vocabulary items, and strategies for reducing the 'forgetting problem. Vocabulary learning strategies classified by Pemberton (2003) seem to be the ways for some solutions to remember words for a long period of time, to learn them so well that they become 'known', and fixed in the learner's memory. Moreover, these strategies seem to promote language learners to individual exertion in their independent vocabulary learning.

2.3.2.13 Vocabulary Learning Strategy Classification by Intaraprasert (2004)

Intaraprasert (2004, pp. 55-56) classified vocabulary learning strategies, which were reported to be employed by 133 EST students, into three main categories. These include:

Category 1: Strategies to Discover the Meaning of New Vocabulary Items (DMV)
  DMV 1: Use a Thai-English dictionary;
  DMV 2: Use an English-Thai dictionary;
  DMV 3: Use an English-English dictionary;

DMV 4: Guess the meaning from the context**;**
DMV 5: Ask one's classmate or friend;
DMV 6: Ask one's teacher**;**
DMV 7: Ask someone other than one's teacher, classmate or friend;
DMV 8: Look at the word roots, prefixes or suffixes**;**
DMV 9: Use an on-line dictionary;
DMV 10: Use an electronic dictionary**.**

Category 2: Strategies to Retain the Knowledge of Newly-learned Vocabulary Items (RKV)

RKV 1: Memorise with or without a word list;
RKV 2: Keep a vocabulary notebook;
RKV 3: Group words based on the synonymity or antonymity;
RKV 4: Associate new words with the already-learned ones;
RKV 5: Use new words in writing;
RKV 6: Use new words to converse with peers;
RKV 7: Speak Thai with English loan-words;
RKV 8: Keep words as the computer background;
RKV 9: Keep word cards or word charts in one's bedroom;
RKV 10: Keep words as rhymes or songs;
RKV 11: Use pictures

Category 3: Strategies to Expand the Knowledge of Vocabulary Items (RKV)

EKV 1: Listen to a radio programme in English especially the one for language learning
EKV 2: Watch a television programme in English especially the one for language learning
EKV 3: Surf the Internet especially the websites for language learning
EKV 4: Read different types of different English printed materials, e.g. leaflets, brochures, textbooks or newspapers
EKV 5: Play games in English, e.g. crossword, or hangman
EKV 6: Practise translating from Thai into English and vice versa
EKV 7: Watch an English-speaking film with Thai-narrated scripts
EKV 8: Attend classes of every module regularly
EKV 9: Listen to English songs
EKV 10: Do extra vocabulary exercises from different sources, e.g. book, newspapers or the Internet

Vocabulary learning strategies proposed by Intaraprasert (2004) were classified under three main categories, including strategies 1) to discover the meaning of new vocabulary items (DMV), 2) to retain the knowledge of newly-learned vocabulary items (RKV), and 3) to expand the knowledge of vocabulary items (EKV). On close consideration to the individual vocabulary learning strategies to discover the meaning of new vocabulary items (DMV), it was demonstrated that three main strategy groups were reported being employed by the participants which included dictionary use, social strategies and contextual reliance.

This section has examined a taxonomy of vocabulary learning strategies by different researchers. Vocabulary learning strategies can be categorised in terms of knowledge-oriented strategies; and skill-oriented strategies. Knowledge-oriented strategies include those for understanding and recognising a word (which involve receptive skills). Skill-oriented strategies concern the use of words (which concern productive skills).

Overall, vocabulary learning strategies have been classified differently in various ways by different researchers. Some categories offered are distinctive while some vocabulary learning strategies were made in lists. Although, some of these categories have been named differently, and seem overlapped, they seem to share some common strategies. The most common or notable individual vocabulary learning strategies tend to fall largely in the Memory category. This is followed by Metatcognitive, Cognitive, Social and Determination categories. Most vocabulary learning strategies can be applied to a wide range of vocabulary learning, and are useful at all levels or stages of vocabulary learning. These vocabulary learning strategies are very important for language learners since they promote language learners to take control of their learning away from the teacher. In other words, language learners with a variety of vocabulary learning strategies would make themselves more self-directed learners. They would also make their vocabulary learning easier, faster, more enjoyable and more effective themselves.

2.4 Research Works on Vocabulary Learning Strategies

As mentioned earlier in Section 2.2.2 (the importance of vocabulary), we apparently see that vocabulary is very essential in the development of the four language skills. However, many scholars (e.g. Allen 1983, pp. 1-5; Hedge 2000, pp. 110-111; Morgan and Rinvolucri 1986, p. 4; Richards 1985, p. 176; Schmitt 1997, p. 199) affirm that vocabulary has been given little attention in the language classroom for many years for some reasons. For example, learners themselves do not place considerable significance on vocabulary. Moreover, language teachers have been told a great deal about new discoveries in English grammar, but they have heard much less about ways to help students learn new vocabulary items (Hedge 2000, pp. 110-111). Fortunately, in recent years, some researchers (e.g. Allen, 1983; Nation, 1990, 2001; Meara, 1980; 1982; Schmitt, 1997) suggest that vocabulary has become an area of current interest in language learning and teaching. However, up to present, few research woks have been carried out specifically to investigate vocabulary learning strategies reported being employed by students at any level of education in Thailand. Therefore, it is worth exploring the past research studies on vocabulary learning strategies reported being employed by language learners.

The focal point of this section is to review past research work on vocabulary learning strategies. There are two main reasons for reviewing the past research work. The first reason is that the researcher would like to review how past researchers devise their instruments for data collection to serve the purpose of their studies. The other reason is that the results of these research works can contribute to a better understanding of how language learners cope with unknown words as they encounter them, what strategies language learners at any level of education employed in order to

deal with unknown words. What follow are the available research works on vocabulary learning strategies conducted in other countries and in Thailand:

Table 2.3 Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
1) Palmberg 1988	NNSE learning EFL	The effect of computer games on vocabulary learning	-Elementary	-Experiment	-Computer games
	Result: The testees in this experiment had little difficulty with words in the word list provided.				
2) Brown and Perry 1991	NNSE learning EFL	HEP and LEP students	-Tertiary	-Experiment -Recognition and cued-recall instruments	1. Keyword 2. Semantic 3. Keyword – semantic
	Result: Cued-recall results immediately after treatment revealed that the keyword method facilitated vocabulary acquisition for lower –proficiency students. The delayed results for both the recognition and cued-recall tests suggested that the combined keyword-semantic strategy increased retention above the other strategies.				
3) Luppescu and Day 1993	NNSE learning EFL	The contribution to VL of the use of bilingual dictionaries while reading	-Tertiary	-Experiment	-Bilingual dictionary
	Result: Students who used a dictionary scored significantly better on a vocabulary test than students who did not use a dictionary. Students who used a dictionary read nearly half as quickly as those that did not use dictionaries.				

Notes: **NSE** stands for native/ native-like speaker; **NNSE**: non-native speaker; **ESL**: English as a second language; **EFL**: English as a foreign language; **L2**: second language; **FL**: foreign language; **LL**: language learner; **VLS**: vocabulary learning strategy; **VLSI**: Vocabulary Learning Strategy Inventory; **VLSQ**: Vocabulary Learning Strategy Questionnaire; **SILL**: Strategy Inventory for Language Learning; **LLP**: levels of language proficiency; **HEP**: High English proficiency; and **LEP**: limited English proficiency.

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
4) Sanaoui 1995	NNSE learning ESL and French as L2 (FSL)	-Beginning LLs -Advanced LLs	Adult	-4 case studies of NSE learning ESL and 8 case studies of NSE learning FSL	-Structured learning approach -Unstructured learning approach
	Result: Language learners who had a structured learning approach were more successful in retaining vocabulary taught in their classes than those who had an unstructured learning approach, and that a structured approach was found to be more effective than an unstructured approach for both beginning and advanced learners.				
5) Stőffer 1995	NSE learning French, Russian, Spanish, Japanese, and German as FL	-Overall VLS use	-Tertiary	-VLSI -SILL	-Previous language learning experience -Course level -Language studied -Previous VLSs instruction -Age -Gender
	Result: VLSs employed by university foreign language learners under this investigation have been significantly related to several individual difference variables, such as previous language learning experience, course level, language studied, previous VLSs instruction, and age, but gender failed to make a significant difference in strategy use at the .05 level. Previous VLSs instruction emerged as the best predictor VLS use.				
6) Avila & Sadoski 1996	NNSE learning EFL	-LEP LLs	-Elementary	-Experiment -Informal interviews	-the key word method
	Result: The keyword method produced superior recall and comprehension both immediately and after a week. Results further demonstrated that the keyword method is readily adaptable to actual ESL classrooms.				

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
7) Gu and Johnson 1996	NNSE learning EFL	Overall VLS use	-Tertiary	VLSQ	-Outcomes in learning English

Result: A wide variety of VLSs were reported being employed. Self-Initiation and Selective Attention, two metacognitive strategies, emerged as positive predictors of College English Test (CET Band 2) scores. Contextual guessing, skilful use of dictionaries, note-taking, paying attention to word formation, contextual encoding, and activation of newly learned words also positively correlated with the two test scores. Visual repetition of new words was the strongest negative predictor of both vocabulary size and general proficiency. Strategies aiming at vocabulary retention only related more to vocabulary size than to English proficiency. These strategy combinations, rather than individual strategies, may have made the difference in the participants' learning.

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
8) Lawson and Hogben 1996	NNSE learning EFL	Overall VLS use	-Tertiary	-Think-aloud procedure -Interview	-Outcomes in learning English

Result: The great majority of the procedures students in this study used involved some form of repetition of the new words and their meanings – mostly a simple reading of the dictionary-like entries provided, or repetitions of the word-meaning complexes. They gave relatively little attention to the physical or grammatical features of words, nor did they commonly use elaborative acquisition procedures.

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
9) Ooi & Lee 1996	-NSE -NNSE learning ESL.	The difference in VLS use	- Faculty members (NSE) - Tertiary (NNSE)	-Test of vocabulary -Think-aloud procedure - Interviews	-Different language proficiency levels

Result: Native speakers were able to provide original word answers more often; otherwise high proficiency students approximated very closely to native speakers. Intermediate and low proficiency students' performance was marred by (a) incomplete appreciation of 'contrast within similarity', (b) inadequate knowledge of correct collocations, and (c) inadequate knowledge of word derivations. Overall, subjects in this study have a problem which is related to use rather than to inadequate knowledge of word-meaning.

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
10) Schmitt 1997	NNSE learning EFL	Overall VLS use	-Lower and Upper secondary -Tertiary -Adults	VLSQ	-No variables focused

Result: The most-used strategies for the discovery of a new word's meaning were bilingual dictionary, guess from textual context, and ask classmates for meaning. The least-used strategies in this category was check for L1 cognate. The most-used strategies for the consolidating a word once it has been encountered comprise verbal repetition, written repetition, study the spelling, say new word aloud, take notes in class, study the sound of a word, and word lists. The least-used strategies in this category were use physical action, use cognates in study, use semantic maps, teachers check flash and cards for accuracy. 'Bilingual dictionary', 'written repetition', 'verbal repetition', 'say a new word aloud', 'study a word's spelling', and 'take notes in class' are all strategies which learners already use and believe beneficial.

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
11) Van Hell & Manh 1997	-NNSE learning English, French, and German as FL	-Experienced LL's learning English, French, and German as FL -Inexperienced LL's learning Dutch	- Tertiary	-Experiment (Treatment: keyword learning and rote learning)	-The keyword method -The rote learning

Result: In experiences foreign language learners, rote learners' performance bettered that of keyword learners. In inexperienced learners, rote learners and keyword learners recalled the same proportion of words, though keyword learners had longer retrieval times. Keyword imagery does not impede the learning of abstract word meanings. Finally, keywords meaningfully related to the foreign word more effective retrieval cues than systematically unrelated keywords.

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
12) Chen 1998	-NNSE learning EFL	-High/Low verbal ability learners -Deep/ shallow- elaborative processing learners -High/Low trait anxiety learners	-Adults	-Experiment	-Foreign vocabulary learning proficiency -Learning style -Trait anxiety

Result: (1) Effect of individual differences: 1.1) individual differences in verbal ability, learning style, and trait anxiety did not affect the effectiveness of the keyword method; 1.2) the keyword method did not increase foreign vocabulary learning, relative to the control procedure; 1.3) given the foregoing results, subjects regardless of levels of the individual differences dimensions, generally did not benefit from keyword instruction.

   (2) Predictive power: verbal ability was the best predictor of adult learners' keyword performance, relative to learning style, and trait anxiety.

   (3) Spontaneous use of strategies: 3.1) for the foreign vocabulary learning task, high ability control learners relied mainly on a verbal strategy and a visual strategy, while their low ability counterparts relied on a rote repetition and a verbal strategy; and 3.2) although visual imagery accounted for a relatively infrequent strategy use, high ability learners generally reported using this strategy.

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
13) Zhang 1998	-NNSE learning English and Spanish as FL	- VLS use of LL's with LEP	-Elementary	-Experiment: 1) Keyword 'English' strategy 2) Keyword 'Spanish' strategy 3) Rehearsal strategy	-Perception of strategies in their VL

Result: Results of MANOVA showed statistically significant main effects for time and test and for interaction of test and group. No statistically significant effects for interaction of time and group, interaction of time and test, or interaction of time, test, and group. Post hoc Scheffé tests revealed that students in two keyword strategy groups outperformed their peers in the rehearsal strategy group during vocabulary recall tests and sentence completion tests over time. No statistically significant differences between the two keyword strategy groups during these similar tests.

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
14) Chin 1999	-NNSE learning English as FL	-The effects of 3 types of strategy use of LL's with LEP	-Tertiary	-Experiment: 1) Context 2) Word form analysis 3) Combined context-word form analysis	-LLP
	Result: A significant treatment effect in the fill-in test scores was found. Specifically, students in the context and the combined treatments significantly outperformed students in the word form analysis treatment. The combined treatment group did not significantly produce higher scores than the context treatment group. No significant treatment effect was found in the multiple-choice test scores. Regardless of the treatment, students performed better on the multiple-choice test than on the fill-in test.					
15) Kojic-Sabo & Lightbown 1999	-NNSE learning ESL and EFL	-Overall VLS use	-Tertiary: ESL -Upper secondary: EFL	-Questionnaire -A set of Yes/No test -A cloze test for LLP	-LLP/ success
	Result: More frequent and elaborate strategy use was associated with higher levels of achievement, whereas lack of self-reported effort on the students' part was linked to poor performance. *Time* and learner *independence* were the two most closely related factors for a high level of achievement in vocabulary learning. The use of effective strategies helps language learning become more successful.					
16) Kudo 1999	-NNSE learning English as FL	-Overall VLS use	-Upper secondary	-Survey: VLSQ	-No variables focussed
	Result: Participants in this study did not actively use strategies. They did not use strategies for learning vocabulary because they might not have known about these strategies.					
17) Rodriquez 1999	-NNSE learning English as FL	-Vocabulary retention	-Lower secondary	-Experiment	1) Rote rehearsal 2) Context 3) Keyword 4) Context/ Keyword
	Result: the mnemonic-based methods (i.e. keyword and context/keyword) proved superior to the non-mnemonic-based (i.e. rote rehearsal and context) in both immediate and delayed recall. The context/keyword method produced superior recall to any of the other three methods both immediately and after one week.					

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
18) Taichi 2000	-NNSE learning EFL and ESL	-Overall VLS use	-Upper secondary	-VLSQ -Observation -Oral interviews	-Gender -Levels of achievement -Year of study -Learning environment (EFL vs. ESL)

Result: There were gender differences in dictionary use, note-taking and repetition strategies. The year variable was found related to dictionary use, note-taking and repetition strategies. The location in which the Japanese students learn was found to be the most significant factor affecting all aspects of VLS use.

19) Al-Kaloby 2001	-NNSE learning EFL	-Overall VLS use	-Secondary students -EFL teachers	-Questionnaire -Classroom observation -Document analysis	-No variables focussed

Result: Use of vocabulary learning strategies, the lexical syllabus embodied in the official wordlist and the textbook was insufficient, and presentation of vocabulary aspects was limited to pronunciation and meaning. Vocabulary recycling and vocabulary testing were also found to be ineffective. The summer holiday was found also likely to have an impact on vocabulary loss. The students were found to have low motivational intensity despite favourable attitudes to learning English, and the parental active role was perceived to be not as strong as it can be.

20) Kitajima 2001	-NNSE learning English as FL	-Vocabulary retention	Intermediate level students.	-Experiment	1) Output condition 2) Input-dominant condition

Result: 1) the students retained more words from the output condition than they did from the input-dominant condition, 2) two and one-half months after the initial exposures, although there was no difference between the two conditions with respect to contextual appropriateness of word usage, revealed that students used more words studied under the output condition under the input-dominant condition.

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
21) Winke 2001	-NSE/native-like speaker of English learning Chinese as FL	-Overall VLS use	-Tertiary:	-Focus group interviews -Questionnaire -Classroom observations	-No variables focussed

Result: 1) Students used both non-negotiating (direct) and negotiating (indirect) strategies for acquiring Chinese as a foreign language. They modelled and repeated words, memorised words and wrote words by taking notes in class and by practising words at home. 2) Most class time was spent in the teacher modelling and the students repeating, or with the students being called on one by one. Neither group works nor discussions amongst themselves in Chinese outside of the normal greetings of the day were practised.

22) Gallo-Grail & Zerwekh 2002	-NNSE learning Tagalog/ Filipino as FL	-Overall VLS use	-Tertiary:	-SILL (Version 5.1)	-No variables focussed

Result: 1) Students used both non-negotiating (direct) and negotiating (indirect) strategies for acquiring Chinese as a foreign language. They modelled and repeated words, memorised words and wrote words by taking notes in class and by practising words at home. 2) Most class time was spent in the teacher modelling and the students repeating, or with the students being called on one by one. Neither group works nor discussions amongst themselves in Chinese outside of the normal greetings of the day were practised.

23) Gu 2002	-NNSE learning EFL	-Overall VLS use	-Tertiary	-VLSQ -Vocabulary size tests -General Proficiency Measure	-Gender; -Academic major

Result: Female students significantly outperformed their male counterparts in both a vocabulary size test and a general proficiency test. Female reported significantly more use of almost all vocabulary learning strategies that were found to be correlated with success in EFL learning. Academic major was found to be a less potent background factor. Science students slightly outperformed arts students (though insignificantly) in vocabulary size, but arts students significantly outperformed science students on the general proficiency test.

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
24) Al-Quarni 2003	-NNSE learning English as FL	-Rote repetition for Vocabulary retention	-Tertiary	-Experiment	1) Silent repetition (SR) 2) Verbal repetition (VR) 3) Silent-written repetition (SWR)
	Result: Rote repetition strategies were found as effective strategies for Saudi EFL college students and helped them in increasing their retention scores. The SWR and VWR were found more effective memorisation strategies than VR and SR. The former strategies yielded better retention not only on the immediate recall test (IRT) but also on the delayed recall test (DRT).				
25) Catalán 2003	-NNSE learning Basque and English as L2	-Overall VLS use	-Tertiary	-VLSQ (translated into Spanish	-Gender
	Result: Males and females differ significantly in the number of strategies used. Regarding the range of vocabulary learning strategies, eight out of ten most frequent strategies are shared by males and females. Differences of total vocabulary learning strategies were reported using between males and females.				
26) Fan 2003	-NNSE learning EFL	-Overall VLS use	-Tertiary	-A vocabulary test -VLSQ	-English language proficiency -Age -Language spoken at home
	Result: The students reported that they only sometimes used vocabulary learning strategies although they considered them useful. Strategy used most often and perceived as most useful was the use of dictionary. Strategy used least often and perceived as least useful was the keyword technique.				

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
27) **Gu** 2003	-NNSE learning EFL	-VL during and after reading of successful LL's	-Tertiary	-Think-aloud procedure -Interview	-No variables focussed

Result: Two learners (a) saw vocabulary as but one aspect of language learning that needs to be integrated with language use, (b) demonstrated high levels of self-initiation and selective attention, and (c) employed a wide range of vocabulary learning strategies. Differences in learning style were found between the two learners. Their highly flexible, skilful integration and execution of strategies may be due to a combination of Chinese conceptions of learning, traditional schooling, and literacy practice, the prevailing methods for teaching and learning English in China, the demands of the vocabulary learning task, and individual learning style.

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
28) **Loucky** 2003	-NNSE learning EFL	-Overall VLS use	-Tertiary	-Standardised reading tests; -VLSQ; -Interview	-English language proficiency

Result: Japanese college students tested generally use very few of the most essential VLSs generally recognised as being needed for success in further academic study in English. Results of this study also showed that more structured learners are also more effective in their vocabulary learning, as evidenced by consistently higher vocabulary levels shown by higher level VLSs users.

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
29) **Marefat & Shirazi** 2003	-NNSE learning EFL	-Direct learning strategy use on the vocabulary retention	-Upper secondary	-SILL -2 equivalent tests	-English language proficiency

Result: Learners' strategy use in short-term retention far outweighs that in long-term retention. Memory strategy use was portrayed both in short and long-term retention. The next most frequently used strategies were cognitive and compensation strategies respectively.

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
30) **Rasekh & Ranjbry** 2003	-NNSE learning EFL	-The effect of metacognitive strategy training	-Tertiary	-Experiment; -Nelson Language Proficiency Test -Vocabulary test	-English language proficiency

Result: Explicit metacognitive strategy training has a significant positive effect on the vocabulary learning of EFL students.

Table 2.3 (Cont.) Research work on vocabulary learning strategies conducted in other countries

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
31) Kung & Chen (n.d.)	-NNSE learning EFL	-Overall VLS use	-Elementary	-VLSQ	-English language proficiency
	Result: More proficient learners used vocabulary learning strategies significantly more often than less proficient learners. There was correlation between use of vocabulary learning strategies and English proficiency.				

Table 2.3 shows available past research works on vocabulary learning strategies. The available research works have been particularly analysed according to the purpose of study, research subjects of study, method of data collection, and investigated variables. Table 2.3 summarises the available research works on vocabulary learning strategies from the 1988 up to the mid 2000. Through the extensive review of research works on vocabulary learning strategies, the researcher has attempted to show the reader how previous researchers in the field of language learning investigated vocabulary learning strategies employed by language learners. Beginning with the purpose(s) of previous studies, the main purpose of most previous researchers, both experimental and exploratory research, is to investigate vocabulary learning strategies reported employing by language learners, no matter what level they study.

In terms of variables used in the past experimental research works, different types of vocabulary learning strategies (e.g. rote rehearsal, the keyword method, the use of bilingual dictionaries, mnemonic procedures, etc.) are used as treatments to test the effectiveness between/among those variables. Some researchers focussed on specific individual learner difference variables in their qualitative research works. Significant variables found were as follows:

1) learner individual difference variables:

- gender (Catalán, 2003; Gu, 2002; Sener, n.d.; Stőffer, 1995; Taichi, 2000);
- academic major (Gu, 2002);
- year of study (Taichi, 2000)
- language proficiency (Fan, 2003), or achievement level (Taichi, 2000);
- age (Fan, 2003; Stőffer, 1995);
- previous language learning experience (Chen, 1998, Stőffer, 1995);
- preferred learning style (Chen, 1998);
- (trait) anxiety (Al-Akloby, S. A. A., 2001; Chen, 1998);
- attitude (Al-Akloby, S. A. A., 2001);
- motivation (Al-Akloby, S. A. A., 2001); and
- parental encouragement (Al-Akloby, S. A. A., 2001)

2) teaching and learning conditions:

- previous vocabulary learning strategies instruction (Stőffer, 1995);
- course level (Stőffer, 1995);
- language studied (Stőffer, 1995);
- length of study (Sener, n.d.); and
- type of school (Sener, n.d.)

However, some past researchers also made attempts to examine VLSs employed by language learners and to examine the patterns of VLS use without taking individual learner difference variables into consideration (e.g. Schmitt, 1997; Kudo, 1999; Al-Kaloby, 2001; Winke, 2001; Gallo-Grail and Zerwekh, 2002).

Regarding the subjects of study, the past researchers classified the subjects of their investigation into two groups, based on a language they learn, as native speakers of English and non-native or native-like speakers of English. The native speakers of English learn French, German, Italian, or Spanish as a foreign language (e.g. Lawson and Hogben, 1996; Van Hell and Manh, 1997). The non-native speakers of English learn English as a second language (ESL) or a foreign language (EFL) (e.g. Avila and Sadoski, 1996); Ooi and Kim-Seok, 1996; Kojic-Sabo, and Lightbown, 1999; Fan, 2003). The subjects of the past research works were classified based on their level of study as primary, lower and upper secondary, tertiary-level students as well as adult learners. Obviously, most subjects of the past studies are students studying at the

tertiary level, such as college or university, who are native speakers of English learning other languages as their foreign language, or non-native speakers of English learning English as a second or foreign language. Very few research works have been conducted with young learners or adult learners in the field of vocabulary learning strategies.

In respect of methods of data collection to elicit the information about strategy use, it is obviously seen through the review of research works on VLSs that two major methods of data collection used in the past research works on VLSs include survey through the use of a vocabulary strategy questionnaire, or *an experiment* through the use of different individual vocabulary learning strategies, such as the keyword method, rote rehearsal, and context. Some researchers, such as Schmitt (1997); Kudo (1999); Al-Kaloby (2001); and Gu (2002), have made use of vocabulary strategy questionnaire for their data collection. Some researchers, Brown and Perry (1993); and Luppescu and Day (1993) have made use of an experiment for data collection. Others chose classroom observations (e.g. Winke, 2001; and Al-Kaloby (2001), interviews (e.g. Winke, 2001; Gu, 2003), while Lawson and Hogben, (1996); Gu, (2003) employed think-aloud procedure for the other method of data collection to serve the purpose of the study.

The findings in previous experimental research works revealed that students employed different types of strategies to deal with their vocabulary learning. In the qualitative research work the findings revealed that vocabulary learning strategies generally employed by language learners at any level of study fall into different categories. These include the Memory category which is the most notable individual strategies employed by language learners, followed by cognitive, metacognitive,

social, and determination categories. This may result from different contexts of research works in the past, as well as different characteristics of research population.

In Thailand, through an extensive review of research works on vocabulary learning strategies, very little research work in the field has been carried out with Thai students. The only available research work in the field of vocabulary learning strategies was carried out by Intaraprasert (2004):

Table 2.4 Research work on vocabulary learning strategies conducted in Thailand

Researcher	Language Learners (LL)	Focus of Study	Educational Level	Method of Data Collection	Investigated Variable
Intaraprasert 2004	NNSE learning EFL	LL's overall VLS use	Tertiary	An open-ended strategy questionnaire	No variables focussed
	Result: Three main categories of strategies for vocabulary learning were reported being employed by Thai university students studying English for Science and Technology, including the strategies 1) to discover the meaning of new vocabulary items; 2) to retain the knowledge of newly-learned vocabulary items; and 3) to expand the knowledge of vocabulary.				

Notes: **NNSE**: non-native speaker; **LL**: language learner; **EFL**: English as a foreign language; **VLS**: vocabulary learning strategy

Table 2.4 shows the only available research work on vocabulary learning strategies conducted with Thai students at the tertiary level. The available research work carried out by Intaraprasert (2004) is a preliminary study which has been designed to explore vocabulary learning strategies used by 133 university students studying English for science and technology (EST) at a university in Northeast Thailand. No variables have been taken into consideration. The method of data collection of the study was the open-ended vocabulary strategy questionnaire. Three main categories of strategies for vocabulary learning have been reported being employed by those students. They include the strategies 1) to discover the meaning of

new vocabulary items; 2) to retain the knowledge of newly-learned vocabulary items; and 3) to expand the knowledge of vocabulary.

In summary, it appears that researchers in the past have made use of different systems to classify vocabulary learning strategies. Through the extensive related literature review in the field of vocabulary learning strategies, we can see that some researchers may have their own classification based on other research works conducted by other researchers; on their own research works; or even from their own experience as language teachers or language learners. The vocabulary strategy classification may depend on individual researchers' interests in classifying strategies for learning vocabulary items. A few researchers have applied a few fundamental categories in their schemes of classification, the Memory category, for example, is the most notable individual strategies reported employing by language learners. This is followed by Cognitive, Metacognitive, Social, and Determination categories.

2.5 Summary

Chapter two has mainly examined some significant aspects of vocabulary learning, vocabulary learning strategies and available research works on vocabulary learning strategies. Through the broad literature review in the field of vocabulary learning strategies, we can see that several researchers have made use of different vocabulary learning strategy classification systems. Previous research work has been carried out in a variety of purposes of the investigation, target populations, methods of data collection, places of research conduction, and different variables or factors. Chapter 3 concentrates on research methodology and theoretical framework in vocabulary learning strategies for the present investigation.

CHAPTER 3

RESEARCH METHODOLOGY AND THEORETICAL

FRAMEWORK IN VOCABULARY

LEARNING STRATEGIES

3.1 Introduction and Purpose of the Chapter

The purpose of this chapter is to discuss the theoretical framework of the research with some general principles of research designs which the researcher will apply to the present investigation. The starting point is the discussion of research methods in vocabulary learning strategies, and the theoretical framework for the present investigation. Next, the research questions will be presented, and this is followed by sampling and the rationales that underlie the choice of subjects and institutions for the investigation, and the characteristics of the research subjects. Then, the framework of data collection methods as well as methods for data collection and data generation will be presented. The chapter ends with an explanation of how the data are obtained, analysed, interpreted and reported.

In conducting a research, the research design is crucial since the research design is the systematic plan of what data to gather, from whom, how and when to collect the data, and how to analyse the data obtained. Cohen and Manion (2002) suggest that the research design is determined by research purposes and research questions. Further, Johnson (1977) affirms that the research design describes the purpose of the study,

how subjects of the study are to be obtained, methods or procedures to be followed, measurements to be collected and comparisons or other analyses to be made.

Since one of the purposes of the present investigation is to investigate types of vocabulary learning strategies employed by undergraduate English major and non-English major students learning English at Rajabhat Universities; therefore, of the three types of research, the survey is the main use in the present investigation because surveys concern descriptive studies. Based on purpose(s) of a research, Robson (1993) suggests that the purpose(s) of a research work may help in selecting the research strategies used. The purpose of any research works include explanatory, descriptive, or exploratory.

After reviewing the purpose(s) of research works thoroughly, it is apparent that the present investigation is classified as an exploratory research work in nature which aims to describe types of vocabulary learning strategies and how frequently undergraduate students report employing when learning English at Rajabhat Universities.

3.2 Methods in Language Learning Strategy Research

"Research methods are procedures a researcher follows in attempting to achieve the goal of a study" (Johnson 1977, p. 9). Intaraprasert (2000, p. 53) affirms that the research methods used to investigate language learning strategies are procedures a researcher follows in trying to achieve the goals of a study of language learning strategies, i.e. to elicit information about language learning strategies employed by language learners when they learn a language, particularly the target language. However, Cohen and Scott (1996) point out, "no single research method succeeds in

the field; certain research methods are well established but imperfect". Besides, Robson (1993) points out that there are many methods which a researcher can use to investigate how learning strategies are employed by students or language learners in order to cope with language problems, or to enhance their language learning. Each method has both weak and strong points, but whatever method a researcher employs, he or she must take the main purpose of the study into consideration.

In this section, the main research methods or procedures used to gather data on language learning strategies will be discussed. This is followed by the framework of methods for data collection for the present investigation. Since vocabulary learning is part of language learning, therefore, the main research methods for language learning strategies can be adapted to vocabulary learning strategies as well. These include: 1) Classroom Observation; 2) Oral Interview; 3) Written Questionnaire; 4) Think-Aloud; and 5) Diary Studies.

3.2.1 Classroom Observation

Observational methods are procedures and techniques that are based on systematic observation of events, e.g. using audio and video recorders, check lists, etc. Observational methods are often used in studying language use and classroom events. (Richards et al. 1992, p. 255). Observation is one of the effective data collections if the researcher is also conducting a research about culture, feelings or subjects' ways of life. For example, if the researcher wants to study ways of life of the hill-tribes, one of the key elements of collecting data is to observe participants' behaviours by participating in their activities.

Collecting data from classroom observation is a good technique because the researcher can directly study and collect the data that concern many factors of those

situations. Robson (2002, pp. 310-311) mentions that "a major advantage of observation as a technique is its directness" since a researcher does not ask language learners about their views, feelings or attitudes, but he or she can watch what they do and listen to what they say. This can help the researcher get the facts during those situations. Oxford and Burry-Stock (1995) point out that classroom observations are easy to use and can be conducted both formally and informally. On the contrary, Cohen and Aphek (1981) concluded that observation is not a very fruitful or workable method. They mention that this method fails to provide much information about learning strategies that learners employ.

3.2.2 Oral Interview

The term interview is regarded as a directed conversation between an investigator and an individual or group of individuals in order to gather information (Nunan, 1989, p. 60; Richards et al. 1992, p. 189). It is one of the major data collection tools in qualitative research. It is a very good way of accessing people's perceptions, meanings, definitions of situations and constructions of reality. It is also one of the most powerful ways the researchers have of understanding others (Punch 2005, pp. 168-169). Interviewing has a wide variety of forms and a multiplicity of uses. The most common type of interviewing is individual, face-to-face verbal interchange, but it can also take the form of face-to-face group interviewing, mailed or self-administered questionnaires, and telephone surveys (Fontana and Frey 1994, p. 361).

Brown (2001, p. 5); Nunan (1989, p. 60; 1992, p. 149); Punch (2005, p. 169); and Robson (2002, pp. 270-271) indicate, according to types and styles of interviews, that interviewing can be fully structured, focused or semi-structured, or unstructured.

Oxford and Burry-Stock (1995) address that whether they are structured or unstructured, student interviews provide personalised information on many of language learning strategies which would not be available through classroom observation. Likewise, interviews can be used to investigate a range of issue including developmental aspects of learner language and learning-style preference (Nunan 1989, p. 60). Of the three types of interview mentioned, Nunan (1992, p. 149) affirms that semi-structured interview seems to be popularly used in qualitative designs since they are flexible. The semi-structured interview also gives the interviewee a degree of power and control over the course of the interview. This is consistent with Merriam's (1998, p. 74) conclusion in that a semi-structured interview is flexible enough to allow the researcher to respond to the situation at hand, to the emerging world-view of the participants, and to new, or unforeseen ideas on the topic. With regard to time spent on interviewing, an interview can be a one-time, brief exchange, lengthy sessions, sometimes spanning days, as in life-history interviewing (Fontana and Frey 1994, p. 361).

Collecting data by interviewing is widely used in social studies research because it helps the researcher to get data about subjects' personal information, behaviours, beliefs, attitudes, opinions, etc. One of the good points of the interview is that when the interviewees are asked but they are not clear about the questions, the interviewer can clarify his or her questions so that the interviewees can understand. Some weak points of the interview include time constraint, expenses of going to interview the subjects, and sometimes the interviewees may distort their answers intentionally.

3.2.3 Written Questionnaire

Questionnaire is "a set of questions on a topic or group of topics designed to be answered by a respondent" (Richards et al. 1992, p. 303). Similarly, questionnaires are defined by Brown (2001, p. 6) as "any written instruments that present respondents with a series of questions or statements to which they are to react either by writing out their answers or selecting from among existing answers." It is one of the most useful instruments used to collect the data in the qualitative research. Nunan (1989, p. 62) indicates that written questionnaires, like oral interviews, can be utilised to investigate practically any aspect of the teaching or learning process in order to obtain information from teachers about their teaching practices, or learners' learning-style preferences. Besides, Cohen and Scott (1996) affirm that written questionnaires are used to elicit learner responses to a set of questions, and they require the researcher to make choices regarding question format and research procedures. Therefore, in order to get reliable information from respondents in the field of vocabulary learning strategies or other fields, designing questionnaires which are valid, reliable and unambiguous is a very important issue for the researchers to take account of.

Regarding the type of questionnaire, Nunan (1989, p. 62); McKernan (1996, pp. 125-126) maintain that questionnaires can be open-ended form (or unstructured questionnaire), or closed-ended form (or structured questionnaire). Generally, closed-ended form is widely used since it is convenient and save respondents' time. Questionnaires have many good points. Nunan (1989, p. 62; 1992, p. 149) remarkably affirms that written questionnaires enable the researcher to collect data in field settings and the data obtained is more amendable to quantification than those

collected through free-form field notes, participant observing journals or the transcripts of oral interviews. That is to say, a questionnaire is not difficult to construct and the answers from questionnaire are easy to analyse. It can also be sent to many subjects in different parts of the country and the researcher can collect a lot of data. However, there are weak points with questionnaires. For example, the researcher may not receive all questionnaires back and it may take time to contact the subjects and ask for the rest of questionnaires.

3.2.4 Think Aloud

Think aloud is a procedure used in investigating learner strategies, in which learners think aloud as they are completing a task, in order that the researcher can discover what kinds of thinking processes or strategies they are making use of (Richards et al. 1992, p. 380). Regarding the method of thinking aloud, Bell (2004, p. 1) mentions that it is used to model the cognitive processes of reading comprehension. Students verbalise their own thoughts as they read aloud, modelling the kinds of strategies a skilled reader uses during the reading. The main purpose of a think aloud is to model for students the thought processes that take place when difficult material is read.

A think aloud is a strategy used to slow down the reading process and let students get a good look at how skilled readers construct meaning from text (Richards and Vacca n.d., p. 1). Feldmann and Stemmer (1987) point out that it has been used mainly to investigate the process of translation and communication in a foreign language. Moreover, think aloud procedures have been employed to investigate learners' ongoing cognitive processes and strategies in four major second language areas including translation, reading, writing, and testing (Matsumoto 1993, p.36).

While language learners think aloud, the researcher listens to them. In so doing, Oxford and Burry–Stock (1989) indicate that think aloud protocols provide the most detailed information since the student describes strategies they employ while doing a language task. This method provides a researcher with individual information rather than group responses.

3.2.5 Diary Studies

The diary study is "a first-person account of a language learning or teaching experience, documented through regular, candid entries in a personal journal and then analysed for recurring patterns or salient events" (Bailey 1990, p. 215). Besides, Richards et al. (1992, p. 107) view a diary study as "a regular kept journal or written record of a learner's language development, often kept as part of a longitudinal study of language learning. With a diary study, the researcher records examples of the learner's linguistic production in as much detail as possible, as well as information about the communicative setting involved" (i.e. the participants, the purpose).

In terms of the purpose of diary studies, Richards et al. (1992, p. 107) report that diary studies are often used to supplement other ways of collecting data, such as through the use of experimental techniques". Besides, diary studies can be employed to monitor the learning process or the teaching process or both. They can provide information and insights into language learning which is unlikely to be obtained by other means (Nunan 1989, p. 55). Diaries are generated by learner, usually unstructured, so the entries may cover a wide range of themes and issues. They may include learners' written reports of the cognitive, metacognitive, and social strategies they use dairy in language learning (Cohen and Scott, 1996). Chamot et al. (1999,

pp. 127-129) suggest that students should be encouraged to write their journals and diaries in the target language because of the language practice involved. The goal is for students to write about their experiences in using their own learning strategies. Typically, a diary asks a user to record the date and time of an event, where they are, information about the important event, and a rating of how they feel.

Since the present investigation aims at examining what types of vocabulary learning strategies were reported employing by undergraduate English major as well as science-oriented and non science-oriented students learning English at Rajabhat Universities located in different geographical regions in Thailand, and the present investigation is mainly classified as an exploratory research in nature, therefore the semi-structured interview and the written vocabulary strategy questionnaire were adopted for methods of data collection. The reasons are that the semi-structured interview seems to be flexible, and the questionnaire is found to be a useful instrument to collect the data in the survey research. In the present investigation, the written vocabulary strategy questionnaire was used to elicit language learners' responses to a set of questions, and the responses from the questionnaire are not too difficult to analyse.

3.3 Theoretical Framework and Rationales for Selecting and Rejecting Variables for the Present Investigation

The main purpose of carrying out an extensive available related literature review and other materials on vocabulary learning strategies in Chapter 2 was to find evidence which would help the researcher in developing a theoretical framework, locating the present investigation in the context of past research and other authors'

opinions, and creating the rationale for selecting and rejecting variables for the present investigation.

The focal point of the present investigation is to examine how five independent variables which are 1) students' gender, 2) major field of study, 3) previous language learning experience, 4) type of academic programme of study, and 5) level of vocabulary proficiency, separately relate to one dependent variable which is vocabulary learning strategy. Before proposing the theoretical framework of the present investigation in which vocabulary learning strategy use will be examined as a dependent variable, predictably influenced by the five independent variables mentioned, the theoretical framework based on empirical past studies on vocabulary learning strategies must be presented alongside in order to clarify what variables affect vocabulary learning strategies:

Figure 3.1 Factors related to vocabulary learning strategies, and learning outcomes in past research work

Learner Individual difference variables: -beliefs -attitudes -anxiety -motivation -past language learning experience -sex/gender -age -major field of study -preferred learning style -parental encouragement, etc.	**Learner's choice of VLSs:** -type -frequency	**Learning outcomes:** -Levels of language proficiency/ ability/ achievement
Teaching and learning variables: -previous VLSs instruction -course level -language studied -length of study -task performed, etc.		

(Source: Adapted from Ellis 1994, p. 530)

Based on the review of related literature on vocabulary learning strategies, we can see in Figure 3.1 that the theoretical framework of the past research works on vocabulary learning strategies reveal that types of vocabulary learning strategies, and learners' frequency of vocabulary learning strategy use have been hypothesised to be influenced by two major sets of variables. These include 1) learner individual difference variables (e.g. beliefs, attitudes, anxiety, motivation, past language learning experience, sex/gender, age, major field of study, preferred learning style, and parental encouragement); and 2) teaching and learning conditions (e.g. previous vocabulary learning strategies instruction, course level, language studied, length of study, and task performed). Regarding learning outcomes, such as proficiency, or

ability, or achievement, we can see that the relationship between learners' vocabulary learning strategy use and this set of variables is bi-directional. This can be described as learners' choice of vocabulary learning strategy use (both type and frequency of use) is resulted from learners' language proficiency or learners' language proficiency is resulted from vocabulary learning strategy use.

For the present investigation, the researcher decided to select variables in past research studies which have been received very little attention from most previous researchers (i.e. gender, field of study, and previous language learning experience); one variable which has never been investigated before in vocabulary learning strategies, i.e. type of academic programme, and the most commonly investigated variable, i.e. vocabulary proficiency level, with the assumption that they may be related to students' choices of vocabulary learning strategy use. Below is the theoretical framework for the present investigation:

Figure 3.2 Theoretical framework for the present investigation
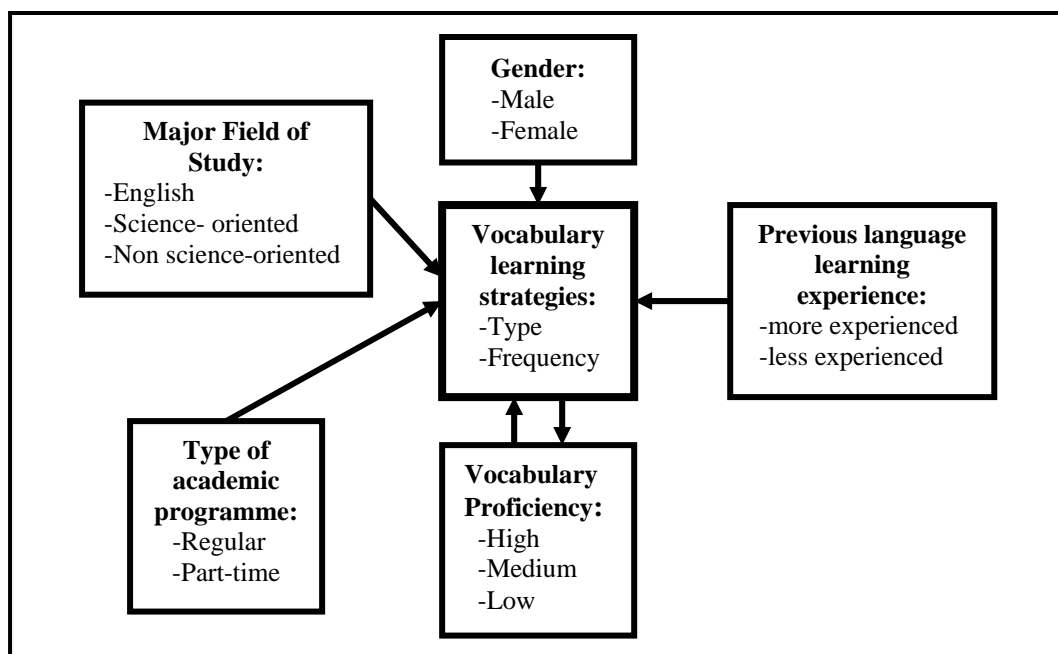
(Source: Adapted from Intaraprasert 2000, p. 59)

In the context of the present investigation, the proposed theoretical framework in Figure 3.2 is formed based on the related literature and past research work on vocabulary learning strategies. It shows that types of vocabulary learning strategies and learner's frequency of use of vocabulary learning strategies will be predictably hypothesised to have a one directional relationship with the individual learner difference variables, namely gender, major field of study, previous language learning experience, and type of academic programme. This means that learner's gender, major field of study, previous language learning experience, and type of academic programme will be examined as independent variables that are assumed to influence types of vocabulary learning strategies and learner's frequent use of vocabulary learning strategies. Of the four variables mentioned, no past empirical research works in the field of vocabulary learning have been carried out to see the relationship between type of academic programme of study and students' use of vocabulary learning strategies.

Regarding the language performance variable which refers to vocabulary proficiency in the present investigation, the relationship between vocabulary learning strategy use and vocabulary proficiency is two directional. This two-directional relationship is complex since there is no clear conclusion that it is learner's vocabulary learning strategy use that results in vocabulary proficiency, or it is vocabulary proficiency that results in learner's vocabulary learning strategy use. In the context of the present investigation, vocabulary proficiency will be examined as one of the independent variables that may influence learner's vocabulary learning strategy use. To be specific, in the context of the present investigation, there will be altogether five independent variables, including learner's gender, major field of study,

previous language learning experience, type of academic programme of study, and levels of vocabulary proficiency. One dependent variable for the present investigation is vocabulary learning strategy use. That is to say, students' vocabulary learning strategy use is predictably hypothesised to be influenced by the five independent variables under the present investigation.

However, the five main types of variables shown in the theoretical framework are most probably interactive or linked with one another in terms of vocabulary learning in a formal setting. That is to say, the variables in the present investigation were sources for vocabulary learning and teaching to take place, and language performance, as Intaraprasert (2000, p. 60) affirms, is the product which is equally interactive with vocabulary learning strategies as a result of the teaching and learning process.

Chapter 2 reveals that past researchers in the field of vocabulary learning strategies have taken several variables affecting students' use of strategies into account for their investigation. They have found that some variables have a strong relationship, while others have little or no relationship with students' use of strategies. This depends largely upon the context of an investigation, for example, the subjects of the investigation.

Since the present investigation is designed to examine vocabulary learning strategy use of English and non-English major students learning English at Rajabhat Universities, the educational context at Rajabhat Universities has been reviewed, in order to look at and establish the variables to be investigated for conducting this study with the hope that it will be possible to make use of the research findings to help improve vocabulary learning and teaching to those students as well as the language

teachers. The researcher's emphasis is to find out the appropriate way that can be used to encourage English major and non-English major students learning English at Rajabhat Universities in different locations of institution to achieve their own vocabulary learning goals, and it can help them to become more independent or self-directed students. However, it is very difficult to examine all the variables found in the review of related literature and previous research work in the field of vocabulary learning strategies; therefore, students and the five main variables mentioned earlier are the particular focus for the present investigation. The theoretical framework illustrates that the five main types of variables could be investigated. Even though different types of academic programmes of study are hypothesised to be related to learner's strategy use, they have never been investigated in the field of vocabulary learning before.

For the present investigation, the researcher explored the independent variables which have been neglected by most previous researchers, such as the student's gender, major field of study, previous language learning experience, and type of academic programme of study, as well as one of the most investigated variables by previous researchers in the field of vocabulary learning strategies, i.e. language performance, which refers to vocabulary proficiency in this investigation, so as to see whether or not these variables are related to types and frequency of students' use of vocabulary learning strategies. What we shall see next are the discussions of basic assumptions about the relationships between learners' strategy use and the five variables, based on the theoretical framework, related literature, other researchers' opinions, and the researcher's justification of the selected variables for the present investigation:

3.3.1 Students' Use of Vocabulary Learning Strategies and Gender

Research works on vocabulary learning strategies which have examined the relationship between gender and students' use of vocabulary learning strategies have come to mixed conclusions. Through an extensive review of individual difference variables, gender is obviously seen as one of the major factors that influences language learning (Gu, 2002), but gender has received little attention in the field of vocabulary learning strategies (Catalán, 2003, p. 55). The previous research works on vocabulary learning strategies conducted by Stőffer (1995) revealed that gender failed to make significant difference in students' choices of strategy use whereas Gu (2002) and (Catalán, 2003), came to the conclusion that gender had a significant relationship to students' choices of strategy use.

In Stőffer's (1995) study, she assessed university foreign language students' use of vocabulary learning strategies as related to individual difference variables with 707 students enrolled in French, German, Japanese, Russian, and Spanish classes at the University of Alabama during the spring semester of 1994 and 1995. She used Vocabulary Learning Strategy Inventory (VLSI) and a modified version of the Strategy

Inventory for Language Learning (SILL, Version 7.0). One individual difference variables she has focused was students' gender. The finding showed that no significant differences in students' choices of strategy use has been found at the .05 level.

Gu (2002) examines how gender was related to vocabulary learning strategies and learning results of Chinese learners in the Chinese EFL context. The findings of his study revealed that female students significantly outperformed their male

counterparts in both a vocabulary size and a general proficiency test. Female also reported significantly more use of almost all vocabulary learning strategies that were found to be correlated with success in EFL learning, but differences on most strategy categories were less clear-cut than were those between male and female participants.

Catalán (2003) investigated sex differences in a second language vocabulary learning strategies of 581 Spanish-speaking students (279 males and 302 females) learning Basque and English as L2. The results showed that male and female second language learners differed significantly in the number of strategies used, and that the two groups used different strategies. The females' total strategy usage percentages were higher than the males', which pointed to either different perceptions of vocabulary learning behaviours or different patterns of vocabulary strategy usage for males and females.

As mentioned earlier, gender is one of the major factors that influences language learning but it still has received little attention by most past researchers. The purpose of the current study is to examine whether or not gender differences among students is related to their use of vocabulary learning strategies.

3.3.2 Students' Use of Vocabulary Learning Strategies and Major Field of Study

Through an extensive review of research works on vocabulary learning strategies, major field of study is little focused by previous researchers as the main variable in exploratory research. The only available research work on vocabulary learning strategies that examines students' academic major as one of the main variable affecting vocabulary learning strategies is found in Gu's (2002) study. Gu (2002) examines how students' academic major is related to vocabulary learning strategies

and learning results of a group of adult Chinese EFL learners in the Chinese EFL context using vocabulary learning questionnaire. The academic major of the students in his study included Arts and Science. The findings showed that academic majors were found to be a less potent background factor. Science students slightly outperformed arts students (though insignificantly) in vocabulary size, but arts students significantly outperformed science students on general proficiency test. Strategy differences were also found between arts and science majors.

In the present investigation, the students' different major fields of study are investigated in order to see whether or not this variable is related to their vocabulary learning strategy use. Major fields of study in the present investigation include English, science-oriented, and non science-oriented majors.

3.3.3 Students' Use of Vocabulary Learning Strategies and Previous Language Learning Experience:

In the field of language learning strategies, some past researchers, such as Oxford and Nyikos (1989) and Wharton (2000), carried out research works with regard to the effects of previous language learning experience on language learning strategies. They focused on years of study as previous language learning experience, and the findings revealed that there was little relationship between previous language learning experience and students' use of language learning strategies.

Through an extensive review of research works on vocabulary learning strategies, it is noted that previous language learning experience has received little attention from most of the past researchers. The only available research work on vocabulary learning strategies focussed on vocabulary learning experience has been carried out by Stőffer (1995). The results in Stőffer's (1995) study revealed that

students' use of vocabulary learning strategies was significantly related to previous language learning experience.

In the present investigation, students' previous language learning experience is also examined in order to see whether or not this variable is related to students' use of vocabulary learning strategies. Previous vocabulary learning experience in the context of the present investigation is concerned with the fundamental English 1 and 2 that students take at Rajabhat Universities. To be more specific, students are examined for their previous language learning experience based on whether or not they have completed the fundamental English 1 and 2. If they have already completed the fundamental English 1 and 2, they are classified as '*more experienced*'. If they have not completed the fundamental English 1 and 2 yet, they are classified as '*less experienced*' language learning.

3.3.4 Students' Use of Vocabulary Learning Strategies and Type of Academic Programme of Study

Type of academic programme of study provided for undergraduate students at Rajabhat Universities can be classified into two main types: *regular* and *part-time* programmes. The learning conditions and environments of these two programmes are rather different. For example, most part-time students have a job. They spend part of their time studying on Saturdays and Sundays, or in the evenings, whereas regular students attend class from Mondays to Fridays studying full time. Different types of academic programme may be assumed to affect the choice of students' vocabulary learning strategy use. However, to date, in the field of vocabulary learning strategies, no past empirical research work carried out to explore the relationship between different types of academic programme and students' use of vocabulary learning

strategies have been found. Consequently, the present investigation aims to examine whether or not different types of academic programme as mentioned is related to students' choice of vocabulary learning strategy use.

3.3.5 Students' Use of Vocabulary Learning Strategies and Level of Language Proficiency

Previous research works on vocabulary learning strategies have been carried out in as both experimental and exploratory research. Variables in the experimental research consist of different types of vocabulary learning strategies used to compare which strategy is more or the most effectively used by the students. However, in most exploratory research works, some remarkable individual learner difference variables, such as age, gender, previous language learning experience, preferred learning style, have been examined.

Regarding students' level of language proficiency, research works on vocabulary learning strategies show what method previous researchers made use of to assess students' use of vocabulary learning strategies (e.g. through questionnaire, interviews, observations, think-aloud procedures or diary studies), or how they measured language proficiency (e.g. by performance on vocabulary size test, general vocabulary learning proficiency tests, student self-ratings, or grades in language learning). A few research works examined language proficiency/ability as the predictor, related to the students' use of different types of vocabulary learning strategies have been found conducted.

In previous research works on vocabulary learning strategies, students' language proficiency is apparently found conducted in explorative research (e.g. Fan 2003; Gu and Johnson, 1996; Kojic-Sabo and Lightbown, 1999; Lawson and Hogben,

1996; Louky, 2003; Marefat and Shirazi, 2003; Ooi and Lee, 1996; Taichi, 2000; Kung and Chen, n.d.). Students' language proficiency was also found to be focussed in experimental research when the researcher wants to find out whether or not the high proficiency group of students outperforms the low proficiency group under different individual instructional conditions or treatments (e.g. Avila and Sadoski, 1996; Brown and Perry, 1991; Chen, 1998; Zhang, 1998; Chin, 1999; Van Hell and Mahn, 1997; Rasekh and Ranjbary, 2003).

Students' language proficiency in previous research works was generally found to be classified into two main groups as high/successful/good language proficiency and low/less successful/poor language proficiency. Some studies have focussed on a specific group of high proficiency language learners, some have focussed on only low proficiency language learners, and some researchers have focussed on both groups. However, very few researchers aim at examining students with medium language proficiency in their studies. In the present investigation, besides high and low vocabulary proficiency, students with medium vocabulary proficiency are examined as well. Therefore, vocabulary proficiency in the present investigation are classified into three levels as *high, medium,* and *low* based on the students' scores obtained through the researcher-constructed Vocabulary Proficiency Test (VPT).

3.4 Research Questions:

Based on the proposed relationship of learners' vocabulary learning strategy use, the five selected independent variables (see Section 3.3), and through an extensive review of related literature, the research questions were formed. Since the present investigation aims to describe vocabulary learning strategies reported employing by

English, science-oriented, and non science-oriented major students learning English at Rajabhat Universities, it is designed to provide answers to the following specific questions:

1) What types of vocabulary learning strategies do Rajabhat University students under this particular investigation report employing for their vocabulary learning?

2) How frequently are these vocabulary learning strategies reported being employed by Rajabhat University students?

3) Do students' choices of vocabulary learning strategies vary significantly with their gender? If so, what are the main patterns of variation?

4) Do students' choices of vocabulary learning strategies vary significantly with their major field of study? If so, what are the main patterns of variation?

5) Do students' choices of vocabulary learning strategies vary significantly with their levels of vocabulary proficiency? If so, what are the main patterns of variation?

6) Do students' choices of vocabulary learning strategies vary significantly with their previous language learning experience? If so, what are the main patterns of variation?

7) Do students' choices of vocabulary learning strategies vary significantly with type of programme they study? If so, what are the main patterns of variation?

3.5 Sampling and Rationales for Choice of Subjects

The 'sample' whom researchers actually examine is defined as "a subset of a population selected from the full set or the entirety of population in accordance with the research design" (Howitt and Cramer 2000, p. 93; Runyon and Haber 1991, p.7), which is representative of the whole population" (Dörnyei 2003, pp. 70-71). Kinner

and Gray (2000, p. 2) and Robson (2002, p. 260) view a sample as "a selection of observations (often assumed to be random) from a reference set, or population of possible observations that might be made". All research works, including qualitative research, involve sampling. This is because no study, whether quantitative, qualitative or both, can include everything: 'you cannot study everyone everywhere doing everything' (Miles and Huberman 1994, p. 27). Therefore, the process of selecting sample known as a subset of members of a population is very important since the sample is the actual group of the population or people drawn from the total target group who would be the subject of the research.

A good sample can be represented or generalised to the whole target population. Bell (1999, p. 126) affirms that the sampling techniques will be employed in order to produce a sample which is, as far as possible, representative of the population as a whole. That is, a sample must be a good representative of the target population. Kane (1983, p. 90) indicates, that the sample has to be similar to the population. If not, the results of the study are useless. This is consistent with Dörnyei (2003, p. 71) who indicates that a good sample is very similar to the target population in its most important general characteristics such as age, gender, ethnicity, educational background, academic capability, social class, socioeconomic status, etc. Besides, de Vaus (1996, p. 60) indicates that since a sample is obtained by collecting information about only some members of the population, thus samples can reflect the populations from which they are drawn with varying degrees of accuracy. In short, the sample should provide results similar to the entire population studied.

In selecting the sample for an investigation, many points are questioned by novice researchers, for instance, who the sample shall consist of, or how many people are

needed to survey, or how large the sample should be, or whether or not the subjects are representative, etc. According to the sample size, Cohen and Manion (1994, p. 89) state, "the correct sample size depends on the purpose of the study and the nature of the population under scrutiny". The sample size is very important because, as Drew (1980); Ferguson (1981); and Runyon and Haber (1991) affirm, if the sample does not accurately represent the population, interpretations of the results may not be accurate for individuals other than those actually used as subjects.

Based on the classification of the purposes of research works proposed by Robson (1993) and Runyon and Haber (1991), the present investigation is broadly classified as an exploratory research. The researcher had to consider that the sample should not be too big to be manageable. This meant that the research subjects should be the representative of English major and non English major students studying English at Rajabhat Universities. However, Dörnyei (2003, p. 71) points out, "in most L2 survey research, it is unrealistic or simply not feasible to aim for perfect representativeness in the psychometric sense".

In terms of numbers of subjects used in the investigation, Locke et al. (1998) offer that the sample should be adequate, not too big or not too small, since it finds out if it is reasonable to believe that the results of the research would hold for any situation or group of people. Besides, Bell (1999, p. 126) also suggests that the number of subjects in an investigation will necessarily depend on the amount of time researchers have. As mentioned earlier, the present investigation is broadly exploratory, therefore some crucial factors dealing with the variables for the present investigation have been taken into consideration when selecting the sample, for example, how many subjects should be in the present investigation, and how to select the research subjects. What follow

are characteristics of the research population and institutes for the present investigation.

3.6 Characteristics of the Research Population and Institutes

In Section 3.5, sampling and rationales for choice of subjects are discussed. This section focusses on characteristics of population in the present investigation. Tables 3.1-3.4 below is the breakdown of the number of participating students related to each variable in the data collection so that it provides a context for the results obtained through data analysis for the present investigation. This breakdown has been crosstabulated, and the chi-square (χ^2) tests were used to examine the distribution of the research subjects among the investigated variables.

Table 3.1 Number of students by 'gender' in terms of 'major field of study', 'previous language learning experience', 'type of academic programme of study' and 'level of vocabulary proficiency'

Gender	Major Field of Study			Previous Language Learning Experience		Type of Academic Programme of Study		Level of Vocabulary Proficiency		
	Eng	Sci	Non-Sci	More exp	Less exp	Reg	Part	Hi	Me	Lo
Male (n=488)	96	210	182	146	342	194	294	36	137	315
Female (n=993)	390	268	335	381	612	637	356	92	384	517
Totals (n=1481)	486	478	517	527	954	831	650	128	521	832
χ^2 Value	$\chi^2 = 65.60$***			$\chi^2 = 10.19$***		$\chi^2 = 79.07$***		$\chi^2 = 20.87$***		

Note: 1) Eng means 'English'; Sci 'science-oriented'; and Non-sci 'non science-oriented' majors;
2) More exp means 'more experienced'; and Less exp 'less experienced';
3) Reg means 'regular'; and Part 'pert-time';
4) Hi means 'high'; Me 'medium'; and Lo 'low'; and
5) *** P < .001

The figures in Table 3.1 demonstrate the number of students in each group of the four variables when related to 'gender of the students'. Of the variables presented in the 'white' areas, the chi-square (χ^2) results reveal that the distribution of the subjects varied significantly with major field of study, previous language learning experience, type of academic programme of study and level of vocabulary proficiency. That is to say, there are more students studying in non science- than English and science-oriented majors; more students with less experience of language learning than those with more experience of language learning; more regular than part-time students. A closer examination on students' levels of vocabulary proficiency reveals that a large number of students with 'low'- 'medium'- and high vocabulary proficiency are female students.

Table 3.2 Number of students by 'major field of study' in terms of 'previous language learning experience', 'type of academic programme of study', and 'level of vocabulary proficiency'

Major Field of Study	Previous Language Learning Experience		Type of Academic Programme of Study		Level of Vocabulary Proficiency		
	More exp	Less exp	Reg	Part	Hi	Me	Lo
English (n=486)	250	236	320	166	115	264	107
Science (n=478)	157	321	235	243	6	138	334
Non-Science (n=571)	120	397	276	241	7	119	391
Totals (n=1481)	527	954	831	650	128	521	832
χ^2 Value	$\chi^2 = 89.40$***		$\chi^2 = 29.62$***	$\chi^2 = 79.07$***	$\chi^2 = 418.32$***		

Note: *** P < .001

In light of 'major field of study', the figures as the results of the chi-square (χ^2) tests in Table 3.2 show that the distribution of the number of students in each major field of study varied significantly within the three variables: previous language learning experience, type of academic programme of study and level of vocabulary

proficiency. It is apparent that there are more students with 'less'- than those with 'more' experience of language learning; more 'regular' than 'part-time' programmes; and more 'low'- than 'medium'- and 'high'-vocabulary proficiency. To illustrate, there are more students with 'more' previous language learning experience studying in English than science- and non science-oriented majors while more students with 'less' previous language learning experience studying in non science than science-oriented and English majors. In terms of type of academic programme of study, more 'regular' students studying in English than non science- and science-oriented majors; more 'part-time' students studying in science- than non science-oriented and English majors. Regarding level of vocabulary proficiency, more 'high'- than 'medium' and 'low'-vocabulary proficiency students studying in English major; more 'medium-' studying in English than science- and non science-oriented majors while more 'low'- than 'medium'- and 'high'-vocabulary proficiency students studying in non science-, science-oriented and English majors respectively.

Table 3.3 Number of students by 'previous language learning experience' in terms of type of academic programme of study' and 'level of vocabulary proficiency'

Previous Language Learning Experience	Type of Academic Programme of Study		Level of Vocabulary Proficiency		
	Regular	Part-time	High	Medium	Low
More experienced (n=527)	305	222	77	241	209
Less experienced (n=954)	526	428	51	280	623
Totals (n=1481)	831	650	128	521	832
χ^2 Value	N.S.		$\chi^2 = 89.40^{***}$		

Note: *** P < .001, and N.S. 'not significant'

In respect of students' previous language learning experience, the figures as the results of the chi-square (χ^2) tests in Table 3.3 reveal the distribution of the number of

students in previous language learning experience varied significantly with level of vocabulary proficiency, but not type of academic programme of study. It appears that there are more students with 'less' than those with 'more' previous language learning experience. A high proportion of students with 'less' previous language learning experience are of 'low'- and 'medium'-vocabulary proficiency levels than those of the 'high' level. However, when looking at the number of students and 'type of academic programme of study, it is apparent that the patterns of type of academic programme of study is consistent irrespective of previous language learning experience. In other words, students with 'more' and 'less' previous language learning experience are those study in both regular and part-time programmes.

Table 3.4 Number of students by 'type of academic programme of study' in terms of 'level of vocabulary proficiency'

Type of Academic Programme of Study	Level of Vocabulary Proficiency		
	High	**Medium**	**Low**
Regular Programme (n=831)	71	324	436
Part-time Programme (n=650)	57	197	396
Totals (n=1481)	128	521	832
χ^2 Value	$\chi^2 = 12.48$ $P < .001$		

The figures as the results of the chi-square (χ^2) tests shown in Table 3.4 reveal that the distribution of the number of students in type of academic programme of study varied significantly with their levels of vocabulary proficiency. To illustrate, there are more students studying in 'regular' programme than in 'part-time' programme. A higher proportion of both regular and part-time programmes are of 'low'-, and 'medium'- than of the 'high' level. Table 3.5 below summarises the

research population characteristics when the distribution of the number of students among the variables is examined:

Table 3.5 Summary of the variation of the research population characteristics

	Major Field of Study	Previous Language Learning Experience	Type of Academic Programme	Level of Vocabulary Proficiency
Gender	YES	YES	YES	YES
Major Field of Study		YES	YES	YES
Previous Language Learning Experience			NO	YES
Type of Academic Programme				YES

Note: 'YES' means the population varies significantly; and 'NO' means the population does not.

Table 3.5 below summarises the characteristics of the research population when the distribution of the number of students among the variables is examined. The information reveals whether the distribution of the research population varies significantly when related to different variables. This population characterisation can be used to interpret some cases of the research findings in Chapter 7.

The research population can be summarised as follows:

- The total number of students reveals that there are more 'female' students than their 'male' counterparts; more 'more' previous language learning experience than 'less' previous language learning experience; more students studying in 'regular' than 'part-time' programmes; and more 'low'- than 'medium'- and 'high' vocabulary proficiency level students.

- The number of female students studying in English major is slightly larger than both non science- and science-oriented majors.

- The number of female students with 'less' previous language learning experience is much larger than those with 'more' previous language learning experience.

- The number of female students studying in 'regular' programme is larger than those studying in 'part-time' programme.

- A larger number of female students fall into the 'lower' vocabulary proficiency level than in the 'higher' vocabulary proficiency level.

In terms of the characteristics of the subject distribution shown in Tables 3.1-3.4, it is generally satisfactory since the distribution is quite well-balanced as assumed and planned. This can be summarised briefly as follows:

1. The Selection of Students

Proportion of male and female students as well as previous language learning experience is not fairly-balanced since the number of female students is much larger than male students, and the number of students with 'less' is much larger than those with 'more' previous language learning experience. However, proportion of type of academic programme of study: regular and part-time is acceptable. The number of the students in the former is not much bigger than those in the latter. However, as seen in the second column of Table 3.1 demonstrated earlier, it appears that the distribution of major field of study is very well-balanced among the three majors: English, science- and non science-oriented. Proportion of the three majors is very satisfactory with the number of students of 486, 478, and 517 respectively.

2. The Students' Level of Vocabulary Proficiency

As we have seen in the last column of Table 3.1, proportion of level of vocabulary proficiency is not perfectly well-balanced, either, since the number of 'low' vocabulary proficiency level is the largest proportion. The smallest proportion

of level of vocabulary proficiency is the 'high' level. However, it is unpredictable whether students with different gender, major field of study, previous language learning experience and type of academic programme of study would do the vocabulary proficiency test (VPT) better than others. Based on the VPT results for the present investigation, the larger percentages of 'low' and 'high' vocabulary proficiency levels students were distributed unsatisfactorily.

In order to investigate the variables that may affect vocabulary learning strategies employed by undergraduate students studying English at Rajabhat Universities, these students with different gender, major field of study, previous language learning experience, type of academic programme of study, and levels of vocabulary proficiency have provided the researcher with sufficient and very useful information for the present investigation.

3.7 Framework of Methods for Data Collection for the Present Investigation

Robson (1993, p. 290) points out, "There is no rule that says that only one method must be used in an investigation. Using more than one method in an investigation can gain substantial advantages, even though it almost inevitably adds to the time investment required. One important benefit of multiple methods is in the reduction of inappropriate uncertainty. Using a single method and finding a pretty clear-cut result may delude investigators into believing that they have found the right answer". This would suggest that using more one method of data collection in a research work is accepted and will probably be more beneficial.

However, to serve the purpose of their research works, researchers have their own ways to choose methods of data collection. Creswell (2003, p. 12) indicates, "Individual researchers have a freedom of choice. They are 'free' to choose the methods, techniques, and procedures of research the best meet their needs and purposes." The key is that individual researchers can select the methods of data collection that best suit their purposes of their investigation. Certainly different methods of data collection can result in different conclusions of each study.

Since there are different methods of data collection, and each method has its own advantages and disadvantages; therefore the researchers have to take crucial aspects of method of data collection into consideration, and justify which method can best suit the purpose(s) of their studies. Ellis (1994, p. 534) suggests that the use of structured interviews and questionnaires are methods that have been found to be successful since they call for retrospective accounts of the strategies learners employed. Likewise, O'Malley and Chamot (1990, p. 88) affirm that questionnaires and guided interviews can be used to draw out language learners' broadest range of experience for strategy use. Creswell's (2003) study suggested that the sequential procedures of strategies associated with the mixed methods approach may begin with a qualitative method for exploratory purposes and followed by a quantitative method with a large sample so that it can generalise results to a target population.

Through an extensive review of related literature in the field of vocabulary learning strategies, different methods of data collection have been employed. The two main methods of data collection used in past research works in the field of vocabulary learning strategies include *survey studies* through the use of a vocabulary strategy questionnaire or/and interviews; or *experimental studies* through the use of different

individual vocabulary learning strategies (see Section 2.4). Other methods of data collection, such as classroom observations, think-aloud procedure, and diary studies were sometimes employed in experimental studies, in order to serve the particular purpose of the study.

In the context of the present investigation, methods for data collection have been taken into consideration, and a multi- method approach known as 'triangulation' – a mixed methods for data collection – has been selected, and how to analyse data were carefully planned for the employment. Triangulation, as Allwright and Bailey (1991); Bell (1999); Cohen and Manion (1994); Merriam (2002); Metz (2000); and Robson (1993; 2002) emphasise, is the use of two or more methods of data collection to study complex issues and to increase valid of research findings. As a result, both qualitative and quantitative methods for data collection for the present investigation which include one-to-one semi-structured interviews and written vocabulary strategy questionnaire were adopted.

Since the present investigation is exploratory and descriptive research work, it aims to explore, describe, and explain types of vocabulary learning strategies and how often these vocabulary learning strategies are reported employing in coping with unknown or unfamiliar words or vocabulary items, thus triangulation, both one-to-one semi-structured interviews and written vocabulary strategy questionnaire, were adopted and assumed as the appropriate methods for data collection. The hope is that triangulation methods for data collection could serve the purposes of the present investigation as they were to provide a great deal of information of vocabulary learning strategies reported employing by the research subjects.

3.8 Methods for Data Collection and Data Generation

In order to answer the research questions for the present investigation, the semi-structured interviews and the written vocabulary strategy questionnaires are used for data collection. The written vocabulary strategy questionnaire were administered to undergraduate English major and non-English major students studying English at Rajabhat Universities in academic year 2006. In the present investigation, there were two phases for data collection, including the semi-structured interview, and the written strategy questionnaire. What follows is the detail of each method for data collection:

3.8.1 Student Oral Interviews

Bell (1999, p. 139) points out that the type of interview selected to an extent depends on the nature of the topic and what exactly a researcher wants to find out. In the context of the present investigation, the semi-structured interviews were used as the main method in the first phase of data collection, in order to elicit the vocabulary learning strategies reported employing by English major and non-English major students studying English at Rajabhat Universities. The data obtained through the semi-structured interviews in the first phase was used to generate the vocabulary learning strategy inventory (VLSI), and then the written vocabulary strategy questionnaire (VLSQ) which was used as the main instrument in the second phase for data collection, or the main fieldwork scheme. This was to examine the overall vocabulary learning strategy use as well as patterns of variation of vocabulary learning strategies that English major and non-English major students studying English at Rajabhat Universities reported employing in general.

The reason that the researcher has made use of the semi-structured interviews to obtain the qualitative data from individuals in the first phase of data collection was that this technique has been widely used and has been proved by many researchers to be more generally useful and effective in the qualitative research works since it is flexible. Merriam (1998, p. 74) indicates that interviews are a tool the researcher can use to explore the past, understand the present, or predict the future. Interviews help provide an understanding of interpersonal, social, and culture aspects of the participants being studied. Interviews also allow the interviewees to develop ideas and speak more widely over the course of the interview on the issues raised by the researcher (Nunan 1992, p. 149; Robson 2002, p. 271; Denscombe 2003, p. 167). Having realized good points of interviews, and since the present investigation is broadly classified as exploratory and descriptive research, interview is adopted to be used in the first phase of data collection. Hopefully the semi-structured interviews will best serve the purposes of the present investigation.

The questions from the semi-structured interviews comprised 15 items. The researcher intended using Question No. 1 to lead and build a good relationship between the interviewer and the interviewees. It also helped build trust and confidence to the interviewees. Questions 2-15 pinpoint the students' vocabulary learning strategies they reported employing both inside and outside a language classroom. The students were asked what they have found difficult in learning English vocabulary and how they solved the problems. The semi-structured interviews for the present investigation were conducted by the following steps:

1. Meet students as the interviewees at each Rajabhat University based on our appointment. Arrange time for each interviewee to be interviewed based on their preference.

2. State the objectives of the interview for the present investigation to the interviewees.

3. Interview them with 15 prepared questions and with their permission, record the conversation.

4. Use the data obtained through the interview to generate the vocabulary strategy inventory and vocabulary strategy questionnaire. The interview concentrates on each interviewee's type and the frequency of use of vocabulary learning strategies. The interview questions were carefully checked by the researcher's supervisor, and it, then, would be revised under his recommendation. Below is the interview question guides used to obtain data in the first phase of data collection:

- **The interview questions for tapping the students' vocabulary learning strategies in the first phase of data collection:**

1) What is your name/nickname?

2) How many hours a week do you study English in the classroom at your university?

3) According to question No. 2, do you think it is enough?

4) How is English very important in your daily life?

5) How is English important for your future career?

6) What do you think is very difficult for you in English language learning?

7) What language element do you think is necessary for good listening, speaking, reading, or writing English?

8) What do you like to do to help you discover the meanings of English vocabulary, especially when in class?

9) What do you like to do to help you discover the meanings of English vocabulary, especially when outside class?

10) What do you like to do to help you retain the newly-learned English vocabulary, especially when in class?

11) What do you like to do to help you retain the meanings of English vocabulary, especially when outside class?

12) What do you like to do to expand English vocabulary when in class?

13) What do you like to do to expand your vocabulary, especially when outside class?

14) How do you develop a variety of techniques for your vocabulary learning?

15) Do you have any comments on vocabulary learning in your present classroom?

Then the interview questions were piloted with undergraduate English major, science-oriented and non science-oriented major students, who were from the target population but not participating in the present investigation, in order to check that all questions were clear for the interviewees. The interview questions were translated from English into Thai so as to reduce the possibility of being misinterpreted and misunderstood by the participants whose first language is Thai. Then, the interview questions were re-worded and re-arranged with a discussion with the researcher's supervisor before their actual uses.

Each interviewee's appointment was arranged at different times based on his/her convenience when s/he selected to take part in the semi-structured interviews. Normally, the duration of the interview is approximately twenty-five to thirty minutes. Before starting the semi-structured interviews, the researcher asked permission to the tape-recorder the interview so that, when transcribing, she would not miss any information of the interview. Then, the researcher herself transcribed the data obtained through each recording interview. This interview process provided the preliminary data to help create a better understanding in vocabulary learning strategies employed by students studying English under the context of EFL at Rajabhat Universities. Later, the items in the written vocabulary strategy questionnaire obtained from the self-report data through the semi-structured interview were generated. However, some items of vocabulary strategy questionnaires from past research works were taken when found to be appropriate.

3.8.2 Written Strategy Questionnaire

The written vocabulary strategy questionnaire as the main instrument in the second phase for data collection was administered alongside the vocabulary proficiency test (VPT) with 1,481 undergraduate students studying English at twelve Rajabhat Universities (RUs) to be sampled, excepting those from five RUs who already took part in the first phase for data collection (see Appendix 1). The main aim of using the written strategy questionnaire is to draw out types and the frequency of use of vocabulary learning strategies (VLSs) reported employing. The other purpose of making use of the written vocabulary strategy questionnaire is to look into whether or not the investigated variables, such as gender, major field of study, previous language learning experience, type of academic programme of study, and level of

vocabulary proficiency, related to students' self-reported use of vocabulary learning strategies obtained through the written strategy questionnaire.

The questionnaire for the present investigation is a 4-point rating scale. The scale is valued as 1, 2, 3, or 4.

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1 = Never or almost never (never)
2 = Sometimes (once a week)
3 = Often (2-6 times a week)
4 = Always or almost always (every day)
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Bialystok (1981) indicates the advantage of the written questionnaire that this type of instrument can easily be administered to a large group of participants, scoring and data compilation are relatively simple, and more importantly precise, quantitative measures can be derived. Besides, it is "possible to discover attitudes by asking individuals to respond to series of statements of preference … The pattern of responses is then viewed as evidence of one or more underlying attitudes" (Fraenkel and Wallen, 1993).

According to the written vocabulary strategy questionnaire for the present investigation, the Thai translation was also conducted, as this could make it easy in terms of administration and ensure greater accuracy of results, especially with the low-ability students. The translation has been done by the researcher herself and were, then, checked for the validity by her supervisor and with her colleagues who are Thai teaching Thai language working at the university. To qualify a written vocabulary strategy questionnaire, Denscombe (2003, pp. 144-145) suggests that it should be designed to collect information which can be used subsequently as data analysis. Moreover, it consists of a written list of questions that serve the purpose of the research, and it can gather information by asking people directly about the points concerned with the research. It is

essential since it is concerned with the accuracy of the actual measuring instrument or procedure that yields the same result on repeated trials.

After the Thai version of the written strategy questionnaires were validated by three Thai instructors teaching Thai in a university for years, the questionnaires were administered with 1,481 RU students studying in twelve RUs located in different geographical regions in Thailand. The data obtained through the written strategy questionnaires provided enough information for the researcher to look into type and the frequency of vocabulary learning strategies these students reported employing for their vocabulary learning, either when in or outside class. Figure 3.3 below demonstrates the framework of data collection process for the present investigation:

Figure 3.3 Framework of Data Collection Process

<table>
<tr><td>

Data Collection Phase 1: Semi-structured Interviews

Samples: 67 students from five Rajabhat Universities. One Rajabhat University is the representative of each region

Purpose: to explore what vocabulary learning strategies Rajabhat University students reported employing with reference to the investigated variables
</td></tr>
</table>
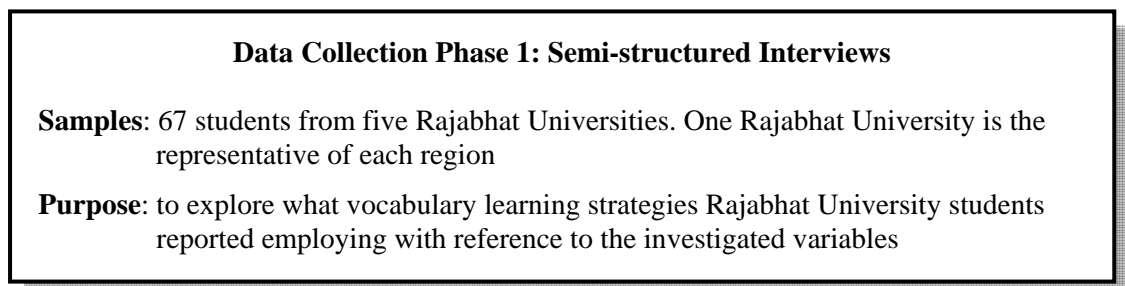
The data obtained from the first phase of data collection were used to generate the written vocabulary strategy questionnaire in the second phase for data collection.

<table>
<tr><td>

Data Collection Phase 2: Survey (Questionnaires)

Samples: 1,481 students from 12 Rajabhat Universities (RUs) stratified from 40 RUs

Purpose: to describe the overall use and the patterns of vocabulary learning strategies Rajabhat University students reported employing with reference to the investigated variables
</td></tr>
</table>
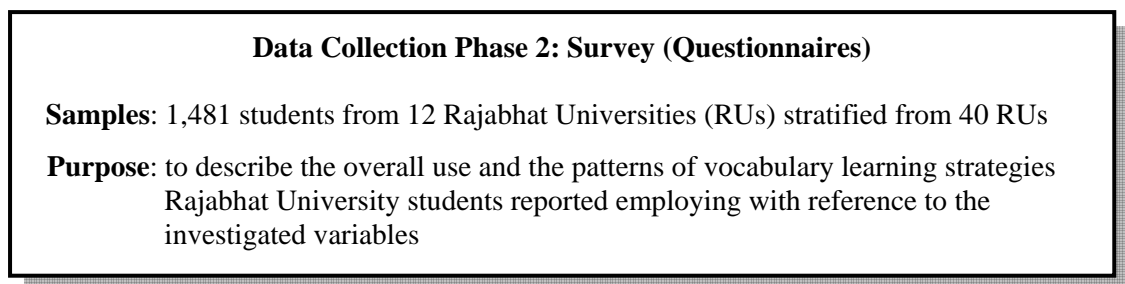
3.9 Analysing, Interpreting, and Reporting Data

In the previous section, the researcher looked at characteristics of the research subjects and institutions. This section emphasises how the data obtained was analysed, interpreted, and reported.

3.9.1 Semi-Structured Interviews

The transcribed data were analysed with 'open and axial coding' techniques proposed by Punch (2005, pp. 207-211) and Strauss and Corbin (1998, pp. 61-62). 'Open coding' is "the process of breaking down, examining, comparing, conceptualising, and categorising data". It is "the part of analysis that pertains specifically to the naming and categorising of phenomena through close examination of data". 'Axial coding' is "a set of procedure whereby data are put back together in new ways after open coding paradigm involving conditions, context, action/interactional strategies and consequences" (Strauss and Corbin 1998, pp. 61-62). With 'axial coding', the data will be "put back together in new ways by making connections between a category (open coding) and its sub-category (axial coding) (Strauss and Corbin 1998, p. 96).

3.9.2 Vocabulary Strategy Questionnaire

The returned questionnaires were tallied and tabulated with the assistance of the SPSS programme to identify the correlated relationships of variables regarding vocabulary learning strategies. The researcher also attempted to find and analyse whether there are patterns of vocabulary learning strategy use in relation to each of the five variables. If any, what kind of patterns exists.

To achieve the research purpose in terms of analysis and interpretation of the data obtained through the written strategy questionnaire, different statistical methods

with the assistance of SPSS programme were used. These include: 1) frequency of strategy use, 2) an analysis of variance (ANOVA), 3) the post-hoc Scheffé test, 4) the chi-square test, and 5) factor analysis. What follow are the statistical methods used to analyse data obtained:

1. Frequency of Strategy Use

This method was used to compare the extent to which strategies were reported to be used frequently or infrequently by students in general, three levels of strategy use: 'high use', 'medium use', and 'low use' based on the holistic mean scores of frequency of strategy use by the research subjects under the present investigation were defined.

2. Analysis of Variance (ANOVA)

An analysis of variance is a method of statistical analysis that is broadly applicable to a number of research designs, and used to determine differences among the means of two or more groups of a variable. The independent variables are usually nominal. Chao (1974, p. 302); Ferguson (1981, p. 234); Howitt and Cramer (2000, p. 195); Nunan (1989, p. 171); and Roscoe (1975, p. 292) point out that the ANOVA is used in order to test the significance of differences between the mean of a number of different populations. It is also used when a researcher wishes to divide the variation observed in two or more sets of data into different parts, assign the parts to different causes, or factors, and then test to see whether the variation is greater than predicted. In the context of the present investigation, this statistical method was used to determine the relationship between students' overall picture of reported vocabulary learning strategy use as regards their 1) gender: male, female; 2) major field of study: English, science-oriented, non science-oriented; 3) previous language learning

experience: more experienced, less experienced; 4) type of academic programme of study: regular, part-time; and 5) levels of vocabulary proficiency: high, medium, low.

3. The post-hoc Scheffe′ Test

The post-hoc or posterior Scheffe′ test is a statistical method used to determine the significant differences as the results of ANOVA where the variables have more than two groups (Byrkit 1975, pp. 276-267; Roscoe 1975, p. 315). If the researcher wants to know which pair has different means (among groups), the post-hoc Scheffe′ test is used to indicate which pair of the groups under such a variable contributes to the overall differences. In the context of the present investigation, the post-hoc Scheffe′ test was used to test the significance of differences of 'major field of study' (English, science-oriented, non science-oriented majors). It was also used to test the significance of differences of students' levels of vocabulary proficiency (high, medium, low).

4. The Chi-square Tests

The chi-square (χ^2) test is the statistical method used when dealing with data which involve frequencies rather than scores (Howitt and Cramer 2000, p. 142), or when analyzing the number of times a particular event(s) occur (Nunan 1989,

p. 173; 1992, p. 229). This test is used to determine whether there is a relationship between the two variables (Chao 1974, p. 277; de Vaus 1996, pp. 165-166; Ferguson 1981, p. 199; Heyes et al. 1986, p. 50; Roscoe 1975, p. 254; Runyon and Haber 1980, p. 322; 1991, p. 476; Weiss 1995, p. 706). The test looks at the numbers of observations made in each category, and compares this with the number of observations which would be expected if there was no relationship between the

variables, and if differences between the populations in each category were simply a result of chance (Heyes et al. 1986, p. 50).

In the context of the present investigation, the chi-square tests were used to determine the significant variation patterns in students' reported strategy use at the individual item level. This method was also used to check all the strategy items for significant variations by students' gender; major field of study; previous language learning experience; type of academic programme of study; and levels of vocabulary proficiency. Moreover, the chi-square tests were used to compare the actual frequencies with which students give different responses on the 4-point rating scale, a method of analysis closer to the raw data than comparisons based on average responses for each of the items. According to the chi-square test for the present investigation, responses of 1 and 2 ('Never' and 'Sometimes') were consolidated into a single "low strategy use" category whereas the responses of 3 and 4 ('Often' and 'Always or almost always') were combined into a single "high strategy use" category. The purpose of consolidating the four response levels into two categories, as Green and Oxford (1995, p. 271) indicate, is to obtain cell sizes with expected values high enough to ensure a valid analysis.

5. Factor Analysis

Factor analysis is a procedure used to reach a meaningful interpretation of the ways in which the variables in a data set are more related to each other (Cohen and Manion, 1994; Ferguson, 1981; Kinner and Gray, 2000; Nunan, 1989; Richards et al., 1992; Skehan, 1989) by reducing attribute space from a large number of variables to a smaller number of variables referred to as *factors*, and determined the nature of underlying patterns among a large number of variables (Child, 1973; Cohen and

Manion, 1994; de Vaus 1996; Ferguson, 1981; Howitt and Cramer, 2000). In the context of the present investigation, the researcher emphasised to find the underlying patterns of vocabulary learning strategies which are emerged from such analysis as well as the variation patterns which are strongly related to each of the five independent variables, including the student's gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency.

3.10 Summary

In this chapter, a background of research methodology which includes research design, types of research, and purposes of research works have been presented. More than that, the chapter has looked into methods in language learning strategies (classroom observation, oral interview, written questionnaire, think aloud, diary studies); as well as theoretical framework and rationale for selecting and rejecting variables for the present investigation. Then, research questions; framework for data collection methods; and methods for data collection and data generation for the present investigation have been proposed. This is followed by sampling and rationales for choice of subjects. Finally, characteristics of the research population and institutes have been discussed before pinpointing the analysis, interpretation, and report of data to end the chapter.

CHAPTER 4

VOCABULARY LEARNING STRATEGY INVENTORY AND THE STRATEGY QUESTIONNAIRE FOR THE PRESENT INVESTIGATION

4.1 Introduction and Purpose of the Chapter

This chapter mainly concentrates on the Vocabulary Learning Strategy Inventory (VLSI) which emerged from the data obtained through the student oral semi-structured interviews conducted with 67 Rajabhat University (RU) students from five Rajabhat Universities in different geographical regions in Thailand in the first semester of academic year 2006. The researcher will present the procedures how to obtain the data from these 67 students in the first phase for data collection, followed by a description how to generate the VLSI based on the data obtained through the semi-structured interviews. Then, the generation of the definite VLSI as well as how to validate it will be discussed. The chapter ends with the vocabulary learning strategy questionnaire (VLSQ) which will be used as the main instrument in the second phase for data collection.

It is generally accepted among many researchers that no single classification system of language learning strategies is perfect. This is also true in the field of vocabulary learning strategies (VLSs). Based on a related literature review of VLSs in Chapter 2, we see that different researchers have offered different ways of

classifying VLSs which might be based on their own ways of vocabulary learning strategy classification or other researchers' research works, or on a review of related literature in the field of VLSs. However, whatever the VLSs past researchers have presented, it is not wrong to conclude that no single classification system is perfect. We can see that the VLS classification system which is accepted as a suitable way for a researcher to use to elicit one group of students' vocabulary learning strategy use may not be suitable for another. Since there is no single, perfect VLS classification system, the researcher took the VLS classification system proposed by different researchers into consideration and viewed that making use of the information reported by Rajabhat University students themselves, to develop an effective way to elicit their VLS use. What follow are the procedures of how to generate the VLSI and the VLSQ for the present investigation.

4.2 The Main Stage of the Student Oral Interviews

The student oral interviews used in the first phase for data collection under the present investigation were the one-to-one semi-structured interviews. They were carried out with 67 Rajabhat University students from mid August 2006 to the last week of September 2006 (see Appendix 2 for the interview timetable). The main purpose of the student oral interviews at this stage was to elicit the students' vocabulary learning strategy use, as well as to investigate how often they reported of making use of those vocabulary learning strategies (VLSs). The reported statements obtained in the first phase of data collection were used to generate the vocabulary learning strategy inventory (VLSI), and then vocabulary learning strategy questionnaire (VLSQ). The interview questions were mainly posed to ask them about

what makes learning English difficult, how vocabulary plays an important role in their learning or improving their English language skills, what VLSs they employed in order to learn vocabulary items, and how they solved their problems of vocabulary learning both when in and outside the classroom. The content of the interview questions partly emerged from a related literature review, available research works in the field of vocabulary learning strategies, and partly through the researcher's personal experience as a language learner and language teacher about strategies for learning vocabulary items. (see Appendix 3 for interview question guide). What follow are a summary of sample interview questions:

Q1: an introductory part of the interviews, including the interviewer's name, purposes of the interviews, the interviewee's name

Q2: an investigation of the fundamental English courses each interviewee is studying, or has studied already

Q3: an investigation of how many hours a week he/she studies the fundamental courses, and whether or not it is enough

Q4, Q5: an investigation of each interviewee's opinion how important English is in his/her student life, and future career

Q6: an investigation of what problems each interviewee has in learning English, and how he/she solves the problems

Q7: an investigation of each interviewee's opinion what crucial knowledge he/she should have for good listening, speaking, reading, or writing English

Q8: an investigation of each interviewee's opinion on what aspects of problems he/she has in learning vocabulary items

Q9: an investigation of each interviewee as to what he/she employs to discover the meanings of new English vocabulary items, and how often he/she does that

Q10: an investigation of each interviewee as to what he/she employs to retain the knowledge of newly-learned English vocabulary items, and how often he/she does that

Q11: an investigation of each interviewee as to what he/she employs to expand their knowledge of new English vocabulary items, and how often he/she does that

Q12, Q13, Q14: an investigation whether or not each interviewee studies English outside the class to help them learn vocabulary items better, and what he/she does that

Q15: an investigation of each interviewee's comments about vocabulary learning in his/her present classroom

After the discussion with the supervisor about the oral interview process, the researcher for the present investigation started collecting the data by asking for official letters from Chair of School of English for co-operation from the five Rajabhat Universities (RUs) stratified from different geographical regions as the subjects in the oral interviews. Two are in the Northeast, one in the North, one in Bangkok, and one in the West. Since there are three main target groups of students: English, science-oriented, and non science-oriented majors, the letters were sent to Dean of each Faculty of Humanities and Social Sciences, and Dean of each Faculty of Science and Technology, asking for permission to interview the students in each major. The interviewees were students studying in English, science-oriented, and non science-oriented major both in regular and weekend programmes. The selection of students studying at five RUs was to ensure there would be enough useful information for the

researcher to generate a strategy questionnaire to be used in the second phase of data collection. Among these students who would be interviewed, 28 students were male and 39 were female, 30 were part-time students and 37 were regular students. Hopefully, these students were representatives of the students who would be the research population in the second phase of data collection.

The researcher spent the last week of August 2006 and the first week of September 2006 at her University preparing materials for the interview data collection. The materials prepared included the interview timetable, interview guides, cassette tapes, and tape recorder for interview recordings. Since the interview data collection would be time-consuming and costly, and the researcher did not want to waste time; thus, all materials were prepared in advance to make sure that everything was ready before starting the interview process.

The first semi-structured interviews were conducted with twelve students at one RU in the Northeast. The university had already prepared ten students for the interviews; therefore, it was not difficult for the researcher to make appointments with these students before the interview process started. Everything was smooth for arranging an appointment since both the university and the students were very co-operative.

The interview process was explained to these twelve students and they were informed what the researcher's interview purposes were. Some students seemed to be worried because they thought that they would be interviewed in English. The researcher had to re-sure them that the language used for the interview was Thai and not English. Then the timetable was arranged and the interview guide was given to every student. Intaraprasert (2000, p. 81) suggested that it was found to be helpful for students to

have an interview question guide before the interview took place to focus their preparation to respond to the proposed questions.

Apart from interview skills, there are some other important points for a good interviewer to consider, and these involve setting a relaxed atmosphere and building a good relationship between the interviewer and the interviewees. Denscombe (2003, p. 179) indicates that setting a relaxed atmosphere in which the students feel free to open up on the topic is necessary. Building *trust* and *rapport* - a good relationship - between the interviewer and the students is also very important. Measor (1985) suggests that one way to build a good relationship between the interviewer and the student is to ask the student's name. Therefore, the researcher strictly followed this point and addressed the students by their name, or nickname based on their preference. Denscombe's (2003, p. 179) and Measor's (1985) suggestions appeared to be very helpful since the students reported that they trusted the researcher and felt free, more confident, and less anxious when being interviewed under a relaxed atmosphere. Furthermore, the researcher also followed Robson's (2002, p. 274) suggestions and guidelines during the interview process in that the researcher should listen to the student more than speak; should put questions in a straightforward, clear and non-threatening way to the students while interviewing; should avoid cues which lead interviewees to respond in a particular way; should look satisfied with responses; and should make interviewees feel that they were understandable and easy to talk to, ect. A similar interview process was employed at the other four Rajabhat Universities.

As a whole, the semi-structured interview was used in the first phase for data collection. Everything was conducted as planned and scheduled, and thus most of the things worked quite smoothly. After the interview process had finished, the researcher

transcribed each interview recording, and then a transcription of each interview recording was translated from Thai to English. The next process was to analyse data obtained after translation in order to discover vocabulary learning behaviours reported to be employed by these Rajabhat University students. It was rather time-consuming; therefore, took the researcher almost two months to finish the process of transcription as well as the translation. The subsequent data analysis was used to generate the VLSI, then the VLSQ for the second phase of data collection.

4.3 How the Vocabulary Learning Strategy Inventory was Generated?

After the interview data obtained were transcribed and translated into English, the next step needed to be done was to consider how the vocabulary learning strategy inventory was to be generated. The researcher started with the following steps:

1. The researcher looked through the interview data obtained through 67 undergraduate Rajabhat University students for the overall picture of what behaviour they reported employing for their vocabulary learning.

2. The researcher looked at each interview transcription, and ascertain what could be considered or/and defined as strategies for learning vocabulary items based on the particular working definition of vocabulary learning strategies proposed by Intaraprasert (2004, p. 9) to serve the purpose of the present investigation (see Chapter 2, Section 2.2.3). Each consistent, individual strategy for learning vocabulary items found to serve the working definition for the particular investigation was identified.

3. From the list of interview transcription, the researcher looked into the similarities and differences, as a whole, between the statements reported by these 67

students, and found that there were altogether 1,071 statements about behaviours for learning vocabulary items. The researcher had to consider how to categorise all these 1,071 reported statements.

4. The researcher then carefully categorised all these 1,071 statements based on the similarities of the context of strategy reported employing by 67 students for their vocabulary learning. These reported statements were mostly employed so that the students could achieve some particular vocabulary learning goals. Again, the researcher had to think about the reported statements since they could be categorised roughly like those of some other scholars, such as Cohen (1990); Intaraprasert (2004); Lawson and Hogben (1996); Pemberton (2003); Rubin and Thompson (1994); or Schmitt (1997). Since strategies were formed by a series of co-ordinated actions for the purpose of achieving an objective reflected by the acquisition of knowledge, know-how, attitude, and learning skills (Richterich 1996, p. 44), and these strategies could be categorised according to the purpose of each strategy use (Intaraprasert 2004, p. 48); therefore, the researcher decided to follow Intaraprasert's (2004, p. 48) vocabulary strategy classification. Moreover, the researcher had to keep in mind again how to categorise the reported statements appropriately and systematically, in order to facilitate the classification that best serves the purpose of the present investigation. Finally, the preliminary classification of 1,071 statements reported being employed by 67 students in learning vocabulary items was administered based on the working definition of vocabulary learning strategies like Intaraprasert's (2004) study because this would serve the purpose of vocabulary learning of students in the Rajabhat University context.

5. At this stage, the researcher had to take vocabulary learning purposes into consideration. For example, one of the science-oriented major students reported his strategy used in order to discover the meaning of new vocabulary items as, "I use the English-Thai dictionary to discover the meaning(s) of unknown or unfamiliar vocabulary items both in and outside class" [translated]. One non science-oriented major student reported, "Normally, when in class, I use a dictionary to find out the meaning(s) of new vocabulary items. If I don't have a dictionary, I ask my classmates, friends or a teacher of English. When at home, I ask the family members the meaning(s) of unknown vocabulary items" [translated]. An English major student reported, "When I don't know the meaning(s) of unknown words, I look them up in an English-English dictionary. I rarely ask friends, but sometimes I ask my English teacher. Generally, when listening or reading, I try to guess the meaning(s) of unknown words through context" [translated]. Since the interview was conducted in Thai, the researcher got straightforward answers in relation to the interview questions. Based on 1,071 statements obtained from 67 students through the semi-structured interview, three main groups of vocabulary learning strategies were emerged and identified as consistent with the working definition of vocabulary learning strategies for the present investigation proposed by Intaraprasert (2004, p. 9).

6. The next step was to identify each group of vocabulary behaviours. It was not easy to merge each strategy use into a suitable group since some strategies reported being employed by students for their vocabulary learning purposes seemed to overlap with others. With regard to the review of related literature on vocabulary learning strategy classification proposed by many scholars, the researcher noted that even though different researchers could classify the vocabulary learning strategies

differently, every strategy item at least shared one common characteristic. When looking back on 1,071 statements of vocabulary learning behaviours reported being employed by 67 interviewees, the researcher considered that vocabulary learning behaviours could be classified certainly based on the working definition. Then, "The Proposed Vocabulary Learning Strategy Inventory" (VLSI) with three main categories of vocabulary learning behaviours were identified. These include strategies 1) to discover the meanings of new vocabulary items, abbreviated as DMV; 2) to retain the knowledge of newly-learned vocabulary items, abbreviated as RKV; and 3) to expand the knowledge of new vocabulary items, abbreviated as EKV. The first category for the present strategy inventory runs from DMV 1 to DMV 14, the second - from RKV 1 to RKV 21, and the third - from EKV 1 to RKV 19. DMV 10, for example, refers to the tenth individual vocabulary learning strategy which students reported employing to discover the meaning of new vocabulary items through the use of an English-Thai dictionary.

As mentioned earlier in stage 6, it was remarkable that some strategies reported being employed by students for their vocabulary learning purposes overlapped with others. For example, some strategies which students reported employing to discover the meanings of new vocabulary items may be employed to retain the knowledge of newly-learned vocabulary items, or expand the knowledge of vocabulary, or vice versa. To be precise, vocabulary learning strategies under the three main categories have a spiral relationship rather than linear. Moreover, some strategies for learning vocabulary items were reported being employed both when in and outside class. This means that there are no clear-cuts at all among the strategy use.

To summarise, the researcher made an attempt to find out the common characteristics of the 1,071 reported statements obtained through the semi-structured interviews conducted with 67 Rajabhat University students studying different major fields and in different years of study, and then these statements were emerged into three main categories based on the working definition. These vocabulary learning behaviours were regarded as 'vocabulary learning strategies', or VLSs, and they were reported being employed by the students so that they could achieve some particular vocabulary learning goals. These statements were then identified and categorised as the strategies to discover the meaning of new vocabulary items, to retain the knowledge of newly-learned vocabulary items, and to expand the knowledge of vocabulary. In so doing, different aspects of vocabulary learning strategy classification proposed by many different researchers were taken into consideration so that they could be used to underlie the researcher's vocabulary learning strategy classification. This stage took the researcher over a month to develop a satisfactory vocabulary learning strategy inventory (VLSI). Table 4.1 below summarises the VLSI which emerged from the data obtained through the oral semi-structured interviews conducted with 67 Rajabhat University students.

Table 4.1 The outline of the vocabulary learning strategy classification for the present investigation

Vocabulary Learning Strategy Inventory		
Main Category	**Purpose to be Achieved**	**Individual Strategy**
Main Category 1	To discover the meaning of new vocabulary items	DMV 1- DMV 14
Main Category 2	To retain the knowledge of newly-learned vocabulary items	RKV 1- RKV 21
Main Category 3	To expand the knowledge of newly-learned vocabulary items	EKV 1 –EKV 19

4.4 Vocabulary Learning Strategy Inventory and the Validation

Once the vocabulary learning strategy inventory (VLSI) was generated, it needed validation in order to be proved more reliable when other people check the correct usage of wording and made comments about the VLSI. The validation processes of the VLSI took place as soon as the researcher had finished compiling the proposed categorisation system. The validation of the VLSI was carried out with three Thai native speaking university teachers, two native speaking teachers of English, as well as five university teachers of English so that they could check that the proposed VLS classification was valid in terms of content and wording.

The purpose of the validation of the VLSI was to ascertain if other people as experts or specialists in the field of vocabulary learning would agree with the proposed inventory, whether or not there were any problematic strategy items in the VLSI, and if so, what improvement or refinement of the inventory needed to be done. To validate the VLSI, the VLSI was given to three Thai native speaking university teachers, two native speaking teachers of English, and five university teachers of English as experts or specialists. All ten teachers have been teaching at a university for years. The Thai version of the VLSI was given to three Thai native speaking university teachers, and the English version of the VLSI were given to two native speaking teachers of English as well as five teachers of English who have been teaching at a university for years so that they could check the content validity as well as wording of the statements in the VLSI. The results of the validation of the VLSI revealed that the VLSI was acceptably appropriate both in content validity and wording. What follow are all ten teachers' opinions about the proposed VLSI tabulated.

Table 4.2 Opinions of Thai native speaking teachers on the content validity of the VLSI

Statement	Experts' Opinions on the VLSI			Total	Mean Scores ($\overline{x}$)	Judgment
	Exp 1	Exp 2	Exp 3			
Category 1 (Items 1-14)	1.0	1.0	1.0	3.0	1.0	✓
Category 2 (Items 15-35)	1.0	1.0	1.0	3.0	1.0	✓
Category 3 (Items 36-54)	1.0	1.0	1.0	3.0	1.0	✓

Note: 1) Exp. stands for an expert   2) "1.0" means 'valid'; "0" refers to 'not at all valid'
3) ✓ means 'acceptable'

As can be seen in Table 4.2, of the three main category of the VLSI checked for the content validity by three Thai native speaking university teachers as experts, the results based on the mean scores revealed that all of the three main categories were acceptable as valid in content.

Table 4.3 Opinions of teachers of English on the content validity of the VLSI

Statement	Experts' Opinions on the VLSI					Total	Mean Scores ($\overline{x}$)	Judgment
	Exp 1	Exp 2	Exp 3	Exp 4	Exp 5			
Category 1 (Items 1-14)	1.0	1.0	1.0	1.0	1.0	5.0	1.0	✓
Category 2 (Items 15-35)	1.0	1.0	1.0	1.0	1.0	5.0	1.0	✓
Category 3 (Items 36-54)	1.0	1.0	1.0	1.0	1.0	5.0	1.0	✓

Note: 1) Exp. stands for an expert   2) "1.0" means 'valid'; "0" refers to 'not at all valid'
3) ✓ means 'acceptable'

Table 4.3 is a summary of the opinion of five university teachers of English as experts on the content validity of the VLSI for the present investigation. The results, which are based on the mean scores, revealed that all of the three main categories of the VLSI were acceptable as valid in content.

Table 4.4 Opinions of native speaking teachers of English on the content validity of the VLSI

Statement	Experts' Opinions on the VLSI		Total	Mean Scores ($\overline{x}$)	Judgment
	Exp 1	Exp 2			
Category 1 (Items 1-14)	1.0	1.0	2.0	1.0	✓
Category 2 (Items 15-35)	1.0	1.0	2.0	1.0	✓
Category 3 (Items 36-54)	1.0	1.0	2.0	1.0	✓

Note: 1) Exp. stands for an expert   2) "1.0" means 'valid'; "0" refers to 'not at all valid'
3) ✓ means 'acceptable'; and X refers to 'unacceptable'

Table 4.4 is a summary of the opinions of two native speaking teachers of English on the content validity of the VLSI for the present investigation. The results based on the mean scores revealed that all of the three main categories of the VLSI checked by two native speaking teachers of English were acceptable as valid in content.

After the processes of the validation of the VLSI had been done, the next stage was to use it to generate the VLSQ which was used as the main instrument for the last phase of data collection to elicit the research subjects' frequency of VLS use. The vocabulary learning strategy questionnaire (VLSQ) will be discussed later in Section 4.6.

4.5 The Vocabulary Learning Strategy Inventory

As previously mentioned, the Vocabulary Learning Strategy Inventory (VLSI) for the present investigation emerged from the data obtained through the one-to-one oral semi-structured interviews carried out with 67 Rajabhat University (RU) students studying in different majors fields, levels, and types of academic programme of study at five RUs located in different geographical regions in Thailand. The interview data obtained were transcribed first, and then analysed qualitatively, and finally

classified into three main categories based on the working definition of vocabulary learning strategies which mainly involve achieving particular goals of vocabulary learning.

According to the working definition of vocabulary learning for the present investigation, there are three main goals for vocabulary learning. These include 1) to discover the meaning of new vocabulary items; 2) to retain the knowledge of newly-learned vocabulary items; and 3) to expand one's knowledge of vocabulary. However, as previously presented in Chapter 3, some VLSs from other researchers could be picked up when found appropriate for the VLSI for the present investigation. Therefore, two strategies in Cohen's (1987); Schmit's (1997) and Hedge's (2000) studies were adopted since they were reported by their research subjects as useful strategies for vocabulary learning. They were 'using semantic maps' and 'making a word-network of vocabulary associated with a particular item'. The researcher wanted to explore whether or not these two strategies would be reported being employed for vocabulary learning in the context of Rajabhat Universities. The following section involves the results of the interview data emerged from 1,071 statements reported being employed by 67 RU students in order to achieve some particular goals of vocabulary learning, as well as two statements adopted from Cohen's (1987); Schmitt's (1997) and Hedge's (2000) vocabulary learning strategy classification. The samples of the student oral interviews with regard to the VLSs reported being employed by students were demonstrated, but each student as the interviewee is labelled as a code according to academic programme of study in which he or she is studying. For example, Reg 1 refers to the interviewee who is a regular student studying full time at a Rajabhat University, and he or she is the first student who

was interviewed. Week 1 and Eve 1 are used to label those weekend and evening students studying in the part-time programme.

4.5.1 Vocabulary Learning Strategies to Discover the Meaning of New Vocabulary Items (DMV)

The vocabulary learning strategies under this main category are the strategies that 67 Rajabhat University students reported employing in order to discover the meaning of new vocabulary items, especially when in class. However, some strategies were reported employing both when in or outside class so that one can achieve some particular goals of his/her vocabulary learning. Below are 14 individual strategies reported employing by the interviewees in order to discover the meaning of new vocabulary items (DMV) which include:

DMV 1: Guess the meaning from a single vocabulary item to discover the meaning of new vocabulary items

DMV 2: Guess the meaning from contexts to discover the meaning of new vocabulary items

DMV 3: Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items

DMV 4: Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items

DMV 5: Guess the meaning by analysing a structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items

DMV 6: Guess the meaning from aural features, such as stress, pronunciation, to discover the meaning of new vocabulary items

DMV 7: Guess the meaning from real situations to discover the meaning of new vocabulary items

DMV 8: Guess the meaning from gestures to discover the meaning of new vocabulary items

DMV 9: Use an English-English dictionary to discover the meaning of new vocabulary items

DMV 10: Use an English-Thai dictionary to discover the meaning of new vocabulary items

DMV 11: Use a Thai-English dictionary to discover the meaning of new vocabulary items

DMV 12: Ask classmate s and friends to discover the meaning of new vocabulary items

DMV 13: Ask teachers of English to discover the meaning of new vocabulary items

DMV 14: Ask other people, such as members of one's family or native speakers of English, to discover the meaning of new vocabulary items

- **DMV 1: Guess the meaning from a single vocabulary item**

Week 2: … Many years ago, I was taught to learn English vocabulary items by guessing the meaning through word by word, so I am used to doing this technique …

Eve 4: … I think I understand text readings by guessing the meaning from a single vocabulary item …

- **DMV 2: Guess the meaning from context**

Reg 28:   … When listening to a conversation, or an English song, watching an English-speaking film with no subtitles, or taking an English test, … I guess the meaning of vocabulary items from context …

Week 11:   … Generally, when listening or reading, I try to guess the meaning of unknown words through context. If I fail in guessing through context, I look them up in the dictionary, or ask my classmate or a teacher of English …

Eve 2:   … When taking a test of English, we are not allowed either to use a dictionary or to ask a classmate, I have to struggle to discover the meaning of vocabulary items through context …

- **DMV 3: Guess the meaning from word classes, such as noun, verb, adjective, adverb**

Reg 31:   … It is not difficult to guess the meaning from nouns, verbs, adjectives, or adverbs because they carry meanings. These words carry lexical meanings, even out of context…

Week 22:   … When reading a text, I often guess the meaning from nouns, verb, adjectives, or adverbs …

- **DMV 4: Guess the meaning from grammatical structure of a sentence**

Reg 28:   … For me, apart from vocabulary, grammar is also important. If I know the grammatical structure of a sentence clearly, it also helps me guess the meaning of words in grammar …

Week 16:   … I studied English many years ago, and grammar was the focal point. Grammar comes along with vocabulary. I learn the meaning of words from grammatical structure of a sentence …

- **DMV 5: Guess the meaning by analysing a structure of words (prefixes, roots, and suffixes)**

Reg 11:   … To discover the meaning of words, looking at the prefixes and suffixes can help guess the meaning of words…

Eve 2:   … when looking at prefixes and suffixes of a word, it helps me guess the meaning of new words. I can discover the meaning of new words by analysing the prefixes and suffixes …

- **DMV 6: Guess the meaning from aural features, such as stress, pronunciation**

Reg 22:   … I sometimes guess the meaning of new vocabulary items from syllable stress. For example, the words 'record' as a noun and a verb, and 'desert', as a noun and a verb, give different meanings because of the different syllable stress…

- **DMV 7: Guess the meaning from real situations**

Reg 34:   … Some real situations can help me guess the meaning of unknown words. For example, I guess the meaning when I hear foreigners ordering a meal in a restaurant …

- **DMV 8: Guess the meaning from gestures**

Reg 3: … My English is limited. Sometimes, in some real situations I guess the meaning of words from gestures …

Week 20: … Once I saw two foreigners giving his thumb down to his wife, I guess that he may not be happy for her about something …

- **DMV 9: Use an English-English dictionary**

Reg 15: … Dictionary is an easy and fast way to discover the meaning of a new word, and normally I rely on an English-Thai dictionary. I can use a dictionary anywhere **…**

Reg 17: … If I fail in guessing unknown words through context, I look them up in the dictionary. It is a fast way to know the meaning of new words, including word families, and other things, such as stress, or pronunciation …

Reg 36: … My major is English, so we are taught to use an English-English dictionary, in order to discover the meaning of new vocabulary items as well as to expand the knowledge of vocabulary…

- **DMV 10: Use an English-Thai dictionary**

Reg 3: … I use an English-Thai dictionary to discover the meaning of English vocabulary items. I seldom use an English-English dictionary because I don't know how to use it …

Reg 14: … I usually use an English-Thai dictionary to discover the meaning of English vocabulary items because it is a quick way…

Reg 27: … I use an English-Thai dictionary when I don't understand the meaning of English vocabulary items shown in an English-English dictionary…

Eve 2: …To discover the meaning of unfamiliar words, the first thing I rely on is to use an English-Thai dictionary. I carry it with me almost everywhere …

- **DMV 11: Use a Thai-English dictionary**

Week 13: … I sometimes use a Thai-English dictionary when I want to check how to say Thai words in English …

Week 19: …When I want to know the meaning of Thai words in English, a Thai-English dictionary is used …

- **DMV 12: Ask classmates and friends**

Reg 13: … I learn new words by talking with my classmates and friends both when in and outside class …

Week 11: … If I fail in guessing through context, and if I don't have a dictionary, I ask my classmates, but I never ask a teacher of English for the meaning of unknown words… I'm shy …

Eve 1: … I like talking with my friends in English. I often learn the meaning of new words from them …

- **DMV 13: Ask teachers of English**

Reg 16: … I usually ask my teachers of English for the meaning of new vocabulary items. I seldom ask my classmates because I think that they don't know the meaning of new words…

Eve1: … One of my teachers of English is very kind. When I don't know the meaning of new vocabulary items, I usually ask her …

- **DMV 14: Ask other people, such as members of one's family or native speakers of English**

Reg 18: … When at home, I usually ask my sister for the meaning of unfamiliar words. She is a university teacher … At the university, I sometimes ask my teachers of English, or the native speakers of English …

Reg 21: … I'm very closed to my mother. She's a teacher of English at an upper secondary school. When at home, I usually ask her for the meaning of new vocabulary items …

Reg 28: … I'm lucky. My neighbour is British, and I'm close to his Thai wife. Whenever I talk with him, I practise my English speaking, and also learn the meaning of new vocabulary items from him ...

Week 18: … I sometimes ask the native speakers of English for the meaning of new vocabulary items. He is very patient to explain the meaning of new vocabulary items to me …

4.5.2 Vocabulary Learning Strategies to Retain the Knowledge of New Vocabulary Items (RKV)

The vocabulary learning strategies under this main category are the strategies reported employing by 67 Rajabhat University students in order to retain the knowledge of newly-learned vocabulary items, especially when in class. However, some strategies were reported employing by some of these students either when in or outside the classroom in order to achieve some particular goals of vocabulary learning. The 21 individual strategies for the retention of the knowledge of newly-learned vocabulary items (RKV) include:

RKV 1: Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 2: Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 3: Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 4: Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 5: Listen to an English conversation of other people, such as classmates, friends, teachers, or native speakers of English, to retain the knowledge of newly-learned vocabulary items

RKV 6: Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items

RKV 7: Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items

RKV 8: Sing English songs to retain the knowledge of newly-learned vocabulary items

RKV 9: Review previous English lessons to retain the knowledge of newly-learned vocabulary items

RKV 10: Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items

RKV 11: Make a vocabulary list with meanings and examples used in one's notebook to retain the knowledge of newly-learned vocabulary items

RKV 12: Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom to retain the knowledge of newly-learned vocabulary items

RKV 13: Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items

RKV 14: Group vocabulary items according to the similarity of meaning, pronunciation, and spelling to retain the knowledge of newly-learned vocabulary items

RKV 15: Do English exercises after class to retain the knowledge of newly-learned vocabulary items

RKV 16: Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items

RKV 17: Associate pictures with vocabulary items to retain the knowledge of newly-learned vocabulary items

RKV 18: Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items

RKV 19: Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items

RKV 20: Connect newly-learned vocabulary items to one's previous learning experience to retain the knowledge of newly-learned vocabulary items

RKV 21: Use semantic maps to retain the knowledge of newly-learned vocabulary items

- **RKV 1: Say a single vocabulary item with its meanings repeatedly**

Reg 13: … If I want to remember the meaning of a vocabulary item, the first thing I do is to say it with its meaning aloud to myself or in my mental image, again and again … till I can remember it …

Week 4: … I can remember the meaning of a word if I say it aloud to myself with it meanings …

Eve 3: … I remember the meaning of words by saying it aloud with its meaning many times. If I don't say it aloud, I can't remember it …

- **RKV 2: Say vocabulary items in sentences repeatedly**

Reg 10: … I used to say a single word aloud in order to retain the meaning of vocabulary items, but now I know that saying words aloud in sentences repeatedly to myself can help me retain the meaning of vocabulary items better and longer …

Reg 39: … I put a word in a sentence, then I say it aloud and repeatedly. This can help me remember the meaning of the new word …

Week 21: … One way to remember the meaning of a new word is to put it in a sentence, then say that word aloud in a sentence repeatedly until it is stored in memory. I often use this technique …

- **RKV 3: Say vocabulary items with their lexical sets repeatedly**

Week 13: … I often say vocabulary items with their lexical sets repeatedly. For example, I say the words 'biology, geography, chemistry' in one set, because they are subjects we study in sciences. This technique helps me remember the meaning of vocabulary items …

- **RKV 4: Say vocabulary items in rhymes repeatedly**

Week 18: …When I was young, my teacher of English taught me to say vocabulary items in rhymes starting with an English or Thai word alongside its meaning. I've found that this technique helps me retain the meaning of vocabulary items, and I still use this technique ...

- **RKV 5: Listen to an English conversation of other people, such as classmates, or friends, teachers, native speakers of English**

Reg 9:   … I like listening to other people speak English, because I can review and then remember already-learned words, and I can learn new words with their meanings …

Week 22: … When listening to my classmates converse in English, the meanings of some learned words flash into my memory …

- **RKV 6: Use vocabulary items to converse with classmates or friends**

Reg 12:   … After studying new vocabulary items, I try to use them to converse with my classmates and friends. I usually use this way to help me pronounce vocabulary items correctly. More importantly, I can retain the meaning of new vocabulary items better and longer than other technique …

Reg 20:   … I try to talk with my friends by using the newly-learned words in our conversation …

Reg 35:   … Exchanging word meanings with a friend helps me retain the meaning of them …

Week 24: … Converse with my classmates, or friends in English frequently helps me retain the meaning of vocabulary items very well…

- **RKV 7: Use vocabulary items to converse with teachers of English**

Reg 20: … I study some courses with a native speaker of English, and I have to communicate with him in English. Conversing with him in English helps me improve my English skills, and I can … I can review the already-learned vocabulary items and retain their meanings …

- **RKV 8: Sing English songs**

Reg 17:   … I like both listening and singing English songs… because I think I know the meaning of new words from English songs. English songs help me improve my English, at least my listening and pronunciation …

Reg 21:   … I like singing English songs. I learn new words or phrases in the songs. English songs make me happy to learn new words and their meanings. More importantly, I can recall and remember the meanings of the words …

Reg 28:   … I like listening and singing English songs. They are helpful for improving my English ability, such as listening and pronunciation, even vocabulary. I recall and remember already-learned vocabulary items with meanings. I can also learn new words from English songs …

Week 15: … Although my major is not English, my English is not so poor. I like listening and singing English songs to improve my listening and vocabulary. I remember already-learned vocabulary items from English songs …

- **RKV 9: Review previous English lessons**

Reg 9: … My English is not very good, so when finishing the English class, I review my English vocabulary by reading and doing homework regularly. Reviewing by reading helps me remember already-learned vocabulary items …

Reg 37: … Doing English homework regularly can help me remember already-learned vocabulary items and I can also learn some new words in the English exercises …

Week 21: … Whatever you're a good or poor language learner, learning English without reviewing what we've learned is impossible…

- **RKV 10: Look at words' affixes (prefixes and suffixes)**

Reg 25: … Prefixes and suffixes makes the word change its form and its meaning. Studying words' affixes helps me analyse word form and word meaning, and then remember the meaning of words ...

Week 6: … I remember the meaning of a word by looking at the forms of words …

Eve 3: … I try to remember the meaning of words from the word formation …

- **RKV 11: Make a vocabulary list with meanings and examples used in one's notebook**

Reg 32: … When in or outside the English class, I have to write words with their meanings and examples used in a list. Then I read, or say vocabulary items aloud repeatedly …

Week 7: … When learning English, one thing I usually do is to write already-learned vocabulary items in a list, and read them out, or I can't remember their meaning …

Eve 3: … I have to make a list of vocabulary. I also write word meanings and examples in my notebook and speak or read them. This technique makes me retain the meaning of vocabulary items …

- **RKV 12: Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom**

Reg 4: … One way to help me remember the meaning of vocabulary items is to write them in pieces of paper and stick them on the wall in my bedroom. I look at and read the them every day till I remember their meanings …

Reg 19: … I do many ways to help me retain the meaning of newly-learned vocabulary items, such as say a word with its meanings aloud repeatedly. At home I write words with meanings and stick them on the wall in my bedroom and kitchen. I read them until I retain their meanings, and I do the same way with other new words that I want to store them in memory …

- **RKV 13: Group vocabulary items according to the synonyms and antonyms**

Reg 33: … Grouping words according to the synonyms and antonyms and read them help me retain the meaning of vocabulary items …

Eve 1: … I write words with their synonyms and antonyms in my notebook, and read or speak them out with their meanings. I've found that this can help me retain the meaning of vocabulary items …

- **RKV 14: Group vocabulary items according to the similarity of meaning, Pronunciation and spelling**

Reg 1: … I sometimes group words according to the similar meaning, such as 'home, house, hut, cottage', into one group; ' jog, run, jump' into another group …

Reg 29: … I group vocabulary items in my own way by looking at the words which share similar meaning or spelling …

Week 3: … I remember words and their meanings by linking the English words to a Thai word with similar sound …

- **RKV 15: Do English exercises after class**

Reg 30: … My English is not very good, but I'm not lazy. After class, I do English exercises regularly. Doing English exercises regularly helps me remember already-learned vocabulary items …

Reg 37: … Doing English homework regularly can help me remember already-learned vocabulary items and I can also learn some new words in the English exercises …

Week 23: … It's impossible to learn English without doing homework. We have a lot of English homework every day, but it is good for me because I can recall and remember the meaning of already-learned vocabulary items …

- **RKV 16: Use newly-learned vocabulary items to practise writing in sentences**

Reg 18: … I practise using vocabulary items by writing them in sentences and read them. This can help me remember the meaning of them …

Reg 35: … Exchanging word meanings with a friend help me retain the meaning of them …

Eve 3: … My English grammar is not very bad. I put the newly-learned words in the sentence and read them until I remember their meaning in context …

- **RKV 17: Associate pictures with vocabulary items**

Reg 6: …When looking at pictures, I try to associate those pictures with English vocabulary items … This can help me remember the meaning of them …

Reg 31: …I often associate pictures with vocabulary items because it helps me remember the meaning of vocabulary items …

- **RKV 18: Look at real objects and associate them with vocabulary items**

Reg 28: … When I look at an object, I try to link it with English words. For example, when I look at a piece of hanging cloth that can be pulled across to cover a window, I associate it the word 'curtain', or when looking at a container for a plant, I associate it to the word 'flower pot'… This is a very helpful way to remember the meaning of vocabulary items …

Reg 39:   … I associate real objects around me with English vocabulary items. For example, when I look at a tool for digging that has a long handle and a broad metal blade that we push into the ground, I associate it with a 'spade'.

- **RKV 19: Associate newly-learned vocabulary items with previously-learned ones**

Reg 11:   … I remember the meaning of newly-learned vocabulary items by associating them with already-learned ones. I associate them in term of meaning, spelling, or pronunciation …

- **RKV 20: Connect newly-learned vocabulary items to one's previous learning experience**

Eve 1:   … The way that I sometimes use to help me recall and remember the meaning of vocabulary items is to connect them to my previous learning experience since I was a primary and secondary school student …

- **RKV 21: Use semantic maps to retain the knowledge of newly-learned vocabulary items**

4.5.3   Vocabulary Learning Strategies to Expand the Knowledge of Vocabulary (EKV)

The vocabulary learning strategies under this main category are the strategies which 67 Rajabhat University students reported employing in order to expand the knowledge of vocabulary, mainly when outside the classroom. The 19 individual strategies for the expansion of the knowledge of vocabulary (EKV) include:

EKV 1: Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary
EKV 2: Listen to English songs to expand the knowledge of vocabulary
EKV 3: Listen to English radio programmes to expand the knowledge of vocabulary
EKV 4: Converse with classmates and friends in English to expand the knowledge of vocabulary
EKV 5: Converse with teachers of English in English to expand the knowledge of vocabulary
EKV 6: Converse with foreigners in English to expand the knowledge of vocabulary
EKV 7: Converse with foreigners in English through the internet to expand the knowledge of vocabulary
EKV 8: Read English articles from different sources, such as texts, newspapers, brochures, leaflets, etc. to expand the knowledge of vocabulary
EKV 9: Read a book of English-Thai conversation in various situations to expand the knowledge of vocabulary
EKV 10: Study vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary
EKV 11: Watch English programme channels on TV to expand the knowledge of vocabulary
EKV 12: Watch an English-speaking film with subtitles to expand the knowledge of vocabulary
EKV 13: Search for English information through the internet to expand the knowledge of vocabulary

EKV 14: Practise using a dictionary regularly to expand the knowledge of vocabulary

EKV 15: Practise translating sentences from English to Thai, or from Thai to English to expand the knowledge of vocabulary

EKV 16: Do extra English exercises from other sources, such as texts, newspapers, internets, to expand the knowledge of vocabulary

EKV 17: Make a word-network of vocabulary associated with a particular item to expand the knowledge of vocabulary

EKV 18: Play English games, such as scrabble, crossword puzzles, to expand the knowledge of vocabulary

EKV 19: Take an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary

- **EKV 1: Practise listening to English lectures, presentation, or cassettes of English conversation**

Reg 15:   … I must attend English class regularly, and I have to listen to my teacher of English attentively. I increase many new words from their lectures…

Reg 31:   … We are assigned to present our work in English in pair or in a small group. The assignment forces us to help each other to study English vocabulary items harder for our presentation. When we present our work, other students listen to us. When they present their work, we listen to them. I learn many new words listening to the presentation …

Reg: 36:   … I have to listen to my native speaker of English when in or outside the classroom. In this case, I learn many new words from him …

Week 23: … When driving back home, I listen to cassettes of English conversation to expand my vocabulary items …

- **EKV 2: Listen to English songs**

Reg 10:   … I like listening to English songs because it makes me happy. Besides, I can review my already-learned vocabulary items and also learn many new vocabulary items in the songs …

Reg 14:   … Songs is a helpful source for vocabulary expansion. I increase my English vocabulary by listening to English songs …

- **EKV 3: Listen to English radio programmes**

Reg 16:   … I increase my English vocabulary by listening to English radio programmes …

Eve 2:   … Listening to English radio programmes helps me improve my English listening skill. Furthers, I learn new words from the radio programmes. When driving home, it's a good time to practise listening to English radio programmes in a car …

- **EKV 4: Converse with classmates and friends in English**

Reg 5:   … I try to use vocabulary items to converse with my classmates and friends. This way makes

me confident to pronounce vocabulary items. More importantly, I exchange the meaning of words with friends and can expand the knowledge of my vocabulary …

Reg 14:   … I try to talk with my friends by using the newly-learned words in our conversation …

Week 24: …Converse with my classmates, or friends in English frequently helps me increase the knowledge of my vocabulary …

- **EKV 5: Converse with teachers of English in English**

Reg 17: … One of my teachers of English teaches us in English. She never wants to speak Thai with us. It forces us to practise to communicate with her in English. It's good because I learn many new words from her. I want every teacher of English to teach in English like her …

- **EKV 6: Converse with foreigners in English**

Reg 17: … I study some courses with a native speaker of English, and I have to speak English with him. This helps me improve my English listening and speaking, and I can learn many new words from him

Reg 28: … My neighbour is British, and I'm close to his Thai wife. Whenever I talk with him, I learn new vocabulary items from him ...

Week 21: … My parents run a business in Los Angeles now, when I visit them, I have to communicate with foreigners in English. If I don't understand anything, I ask them. I learn many new words by talking with them…

Eve 2: …I work in a company. My boss is American. Even though he speaks Thai fairly well, we avoid talking in Thai. We speak English, and I expand my vocabulary by speaking English with him …

- **EKV 7: Converse with foreigners in English through the Internet**

Eve 2: … I work in a company. My boss is American. Even though he speaks Thai fairly well, we avoid talking in Thai. We speak English, and I expand my vocabulary by speaking English with him Sometimes, when wants me to do this .. and that .. for him, we chat in English through the Internet …

Reg 14: … I use the Internet to chat with a foreigner. I can practise speaking by using the chat programme. I can also learn new English words …

- **EKV 8: Read English articles from different sources, such as texts, newspapers, brochures, leaflets**

Reg 10: … I read printed materials in English from different sources, such as billboards, newspapers, magazines, brochures, and leaflets, to expand the knowledge of my vocabulary …

Reg 22: … I sometimes read a magazine in English, and learn many new English words …

Reg 26: … 'Student Weekly' is an easy English newspaper I can expand the knowledge of my vocabulary …

Week 12: … I can learn some new English words and phrases by reading a newspaper and brochures. If a new logo of a video interests me, I'll try to look it up in a dictionary …

- **EKV 9: Read a book of English-Thai conversation in various situations**

Week 17: … I like reading a book of English-Thai conversation in different situations to expand my vocabulary …

Week 22: … It's a shortcut to increase my vocabulary by reading a book of English-Thai conversation. This is because this kind of book provides us vocabulary both in Thai and English …

- **EKV 10: Study vocabulary items from advertisements, public relations notices, traffic signs, etc.**

Reg 16:   … I can learn new English vocabulary items by reading advertisements and billboards in English …

Reg 22:   … I sometimes read advertisement and notices in a magazine in English, and learn many new English words …

Week 24: … When I go somewhere, I also learn new vocabulary items in advertisements and notices…

Eve 4:   … I increase the knowledge of my vocabulary by looking at the traffic signs, such as the word 'undertake' …

Week 18: … I learn some new words from looking at the name of the departments in the office, which is sometimes written both in Thai and English, such as 'Office of the Rector' …

- **EKV 11: Watch English programme channels on TV**

Reg 11:   … I expand my vocabulary by watching English programme channels on TV …

Reg 27:   … I like watching TV about features in English, such as wildlife, traveling, …

Week 16: … I have a cable TV at home, and I watch English programme channels in order to expand the knowledge of my vocabulary …

Eve 4:   … I watch TV programmes in English to improve both listening and expand my the knowledge of my vocabulary …

- **EKV 12: Watch an English-speaking film with subtitles**

Reg 18:   … I see an English-speaking film with the Thai subtitles. I can learn some new vocabulary items from the subtitles …

Reg 24:   … When I see an English-speaking film, even with the Thai subtitles, I try to avoid looking at them. This is because I like to guess the meaning of words spoken in the film and improve my listening …

Reg 39:   … I expand my vocabulary by watching an English-speaking film with subtitles.

- **EKV 13: Search for English information through the Internet**

Reg 6:   … I use the Internet to search for English information to write a classroom report. I learn many new words from information in the Internet …

Reg 29:   … I serf the Internet to learn and acquire new words. The Internet helps me learn many new word …

Week23: … When I serf the Internet, I have to use English. This helps me learn many new words in the Internet …

- **EKV 14: Practise using a dictionary regularly**

Reg 3:   … A dictionary is the first thing I rely on in for my vocabulary learning. I can use a dictionary both when in and outside the classroom. I practise using a dictionary regularly because I can learn a lot of English words …

Reg 11: … Normally, I use a dictionary both inside and outside the class. When I want to find out the meaning(s) of a word, I look them up in the dictionary. I also learn a number of new words in a dictionary …

Reg 29: … Dictionary is an easy and fast way to discover the meaning of a new word, and normally I rely on an English-Thai dictionary. I can use a dictionary anywhere …

Week 17: … A dictionary is most readily available, and cheapest learning resources for me to expand my vocabulary. I practise using it almost every day …

Eve 2: … I like to use a dictionary to look up the meaning of English words as well as to expand my vocabulary …

- **EKV 15: Practise translating sentences from English into Thai, or from Thai into English**

Reg 38: … When my friend asks me to explain them some English sentences in Thai, I have to look the meaning of unknown words up in the dictionary, then try to translate sentences from English into Thai for him. When I use a dictionary, I learn my new words …

- **EKV 16: Do extra English exercises from other sources, such as texts, newspapers, the Internet**

Reg 2: … There some English tests in the newspapers like 'Student Weekly' and 'The Nation Junior'. I try those tests to expand my English vocabulary …

Reg 6: … I do extra English exercises in the other books beyond the class. I learn a lot of English words by doing English exercises …

- **EKV 17: Make a word-network of vocabulary associated with a particular item**

- **EKV 18: Play English games, such as scrabble, crossword puzzles**

Reg 15: … I play scrabble games with my friends in the self-access center. I can learn a lot of new vocabulary items from this game .,.

Reg 27: …I play crosswords, and scrabble games with friends. I often lose, so I have to practise more vocabulary to win the game … This game can help me learn a lot of new words …

Week 12: … I use a computer to play games in English. Before starting the game, I have to read and understand the text in English. I learn new English words from the instructions of the games ...

- **EKV 19: Take an extra job at tour offices, hotels, etc.**

Reg 9: … After class, I take an extra job at the hotel. I meet a lot of westerners who want to book a room. I increase my English vocabulary when speaking with them …

Reg 33: … Sometimes, I take an extra job at tour offices to gain more experience. I have to contact some tourists in English during taking extra job. I learn a lot of new English words …

To sum up, the vocabulary learning strategy inventory for the present investigation was based on the data obtained through the oral semi-structured interview conducted with 67 Rajabhat University students studying in different major fields, levels, and

programmes of study in September 2006. These students were studying in five Rajabhat Universities located in different geographical regions in Thailand. 54 individual vocabulary learning strategies emerged from the students' self-report data obtained through the interview. These emergent 54 individual vocabulary learning strategies were then classified into three main categories based on the working definition of vocabulary learning strategies which involve the particular purposes of vocabulary learning. These include strategies 1) to discover the meaning of new vocabulary items; 2) to retain the knowledge of newly-learned vocabulary items; and 3) to expand one's knowledge of vocabulary items. The vocabulary learning strategy inventory was used to generate the subsequent vocabulary learning strategy questionnaire as the main instrument in the last phase of data collection, in order to elicit answers from a large number of Rajabhat University students for their vocabulary learning strategy use.

4.6 The Vocabulary Learning Strategy Questionnaire

The next step was to generate the vocabulary learning strategy questionnaire (VLSQ) to be used as the main instrument in the last phase for data collection. The VLSQ was first in Thai in order to avoid the misunderstanding by the research subjects as to the questions. The Thai version was used to ensure greater accuracy of results especially with the lower-ability students. The Thai version of VLQS was checked for the correct usage by the researcher's supervisor and three Thai native speaking university teachers who have been teaching Thai for years at a university. This is a very important process because, as Denscombe (2003, p. 152) indicates, the wording of the questions is important to get right. It was found that some question

items were not clear and needed refinements. After the refinement of the question items, the Thai version of the VLSQ was translated into the English for purposes of discussion within the research (see full English version of VLSQ in Appendix 7). The English version of the VLSQ was given to five teachers of English, and two native speakers of English, and five university teachers of English teaching English at a university, for content validity and wording.

As indicated, the VLSQ was particularly designed and generated with the main aim of eliciting the frequency of subjects' VLS use. The first part of the VLSQ was about the student personal background questionnaire which was employed for each student's gender, major field, level, and type of academic programme of study, as well as their institution, and personal perception of their ability in English language learning. It was necessary to determine the student personal background in the questionnaire because it involved the major variables being investigated and the relationship between these variables and frequency of the student's VLS use.

The whole VLSQ was divided into three main parts. Each part of the VLSQ started by asking what levels of VLS the student employed to achieve their particular goals of vocabulary learning, and then they indicated the appropriate frequency of VLS use from the range 'never', 'sometimes', 'often', and 'always or almost always'. If there were some other strategies not included in the VLSQ, there was an open-ended choice for other strategies provided at the end of each section in the form of 'others (please specify)' for each of the students to fill in. This form of the VLSQ was intended to reveal the frequency of the student's self-reported strategy use. Each student was able to express their own judgment on the frequency of strategy use to achieve vocabulary learning goals. As Denscombe (2003, p. 159) points out, the

advantages of this form of instrument include the fact that, besides a relatively low cost (in terms of materials, money and time), it can be easily arranged and supplied standardised answers. Additionally, Bialystok (1981) comments that a questionnaire can be easily administered to a large group of research subjects and easily scored. Compiling data is quite simple and, more importantly, precise quantitative measures can be derived.

Even though the VLSQ was not used in the piloting stage, Alpha Coefficient (α) or Cronbach alpha was used to check the internal consistency of the VLSQ. Franenkel and Wallen (1993) assert that this procedure, Alpha Coefficient (α), was appropriate for calculating the reliability of the items that were not scored right versus wrong. What follows is the reliability estimate based on a 1,481-student sample shown in a tabular format.

Table 4.5 Reliability estimate of the vocabulary learning strategy questionnaire as a whole and the three main categories:

Vocabulary Learning Strategy Category	Strategy Questionnaire as a Whole (54 Items)	DMV (14 Items)	RKV (21 Items)	EKV (19 Items)
Reliability Estimate (Alpha Coefficient: α)	.94	.76	.90	.90

As can be seen in Table 4.5 above, the figures of reliability estimates of the VLSQ for the present investigation are high when compared with the acceptable reliability coefficient of .70. In general, the reliability coefficient of .70 is acceptable as a useful rule of thumb for research purposes (Fraenkel and Wallen, 1993). Oxford and Burry-Stock (1995) reported the reliability coefficients of different SILL (Strategy Inventory for Language Learning) versions as a whole ranging from .85 to .95. This can

be concluded that the reliability estimates of the VLSQ for the present investigation are acceptable. Figure 4.5 below shows a sample of the questionnaire used as the main instrument for the last phase of data collection in order to elicit the students' frequency of vocabulary learning strategy use.

Figure 4.1 A sample of the vocabulary learning strategy questionnaire

Please mark your response with a "✓" in the corresponding space provided that tells how frequent you employ each vocabulary learning strategy				
Statements	**Levels of Your Own Vocabulary Learning Strategy Use**			
	Always/ almost always	Often	Sometimes	Never
(1) Strategies to Discover the Meaning of New Vocabulary Items:				
1.1 Guess the meaning from a single vocabulary item			✓	
1.2 Guess the meaning from context	✓			
1.3 Guess the meaning from word classes, such as noun, verb, adjective, adverbs		✓		
1.4 Guess the meaning from grammatical structure of a sentence		✓		

4.7 Summary

Chapter 4 has dealt with the process involved in designing a particularly designed vocabulary learning strategy questionnaire (VLSQ), the main instrument used in the last phase for data collection. In doing so, the chapter has explained how the vocabulary learning strategy inventory (VLSI) was generated. It has also discussed and proposed the three main categories of vocabulary learning behaviours reported employing by 67 Rajabhat University students studying in different major fields, levels, and types of academic programme of study, as well as their institutions. Then, the process used to categorise vocabulary learning behaviours reported employing by these students as well

as how to validate the VLSI was presented. The chapter ends with how to generate the VLSQ as the main instrument used in the last phase of data collection. The next chapter concentrates on how the vocabulary proficiency test (VPT) used to elicit and determine the students' levels of vocabulary proficiency through different text readings is constructed.

CHATER 5

VOCABULARY PROFICIENCY TEST FOR THE

PRESENT INVESTIGATION

5.1 Introduction and Purpose of the Chapter

In the previous chapter, the researcher reported how the vocabulary learning strategy inventory (VLSI) was generated, and concluded with the vocabulary learning strategy questionnaire (VLSQ). This chapter aims to present how to construct the test used to determine the research subjects' levels of vocabulary proficiency through different reading texts. This test will be referred to as 'Vocabulary Proficiency Test' or 'VPT'. The test was specifically designed for use in the present investigation, not particularly related to or designed for any course of study of any research subjects. The chapter starts with the importance of language tests, types and purposes of language tests and theoretical background for test construction. This is followed by the VPT used in the present investigation, reporting on the pre-piloting as well as the piloting stages. Then, the scores of those tested in the main scheme of data collection and their levels of vocabulary proficiency are presented.

There may be more than one way to determine students' levels of proficiency or ability. For example, a researcher may ask for the students' own perceptions, or make use of students' grades in their previous language learning. Whatever method we use for determining students' levels of vocabulary proficiency, the main thing for the test

constructor to take into consideration is which method would be more reliable to encapsulate students' true language ability since this still remains problematic. Hill (1995, p. 243) proposes that the higher test score would be a more realistic and reliable reflection of students' abilities. And thus, in tapping students' proficiency or ability, Alderson et al. (1995) affirm that testing plays an important part in language evaluation. This may be true because, as Bachman (1990, pp. 20-21) indicates, tests can be used for different purposes and especially they can be designed to evaluate the relevant attributes or abilities that are of interest to the researcher.

5.2 The Importance of Language Tests

A test, as one type of measurement, is "an instrument designed to elicit a specific sample of an individual's behaviour" (Bachman 1990, p. 20). A test, in simple terms, is defined as "a method of measuring a person's ability, knowledge, or performance in a given domain" (Brown 2004, p. 3). Testing, including all forms of language testing, is one form of measurement. It is a universal feature of social life (McNamara 2000, p. 1). There could be no science as we know it without testing or measurement (Henning 1987, p. 1). This can also be true for language testing.

Language tests play a powerful role in many people's lives (McNamara 2000, p. 4), and an important part of every teaching and learning experience (Madsen 1983, p. 3). Without testing, there is no reliable means of knowing how effective a teaching sequence has been. A language test is important not only in language learning and teaching but also in conducting research. In language learning and teaching, testing provides a form of feedback, both for learners and teachers (Thornbury 2002, p. 129).

This is consistent with Madsen (1983, pp. 4-5) who asserts that good tests can benefit students, teachers, and even administrators.

Well-made tests of English can at least help students in 2 ways: 1) to create positive attitudes toward language classes with the help of their teachers to provide positive classroom experiences for them; and 2) to master the language by requiring students to study hard, emphasising course objectives, and showing them where they need to improve (Madsen 1983, p. 5). Similarly, in the field of vocabulary learning, testing helps to motivate language learners to review vocabulary in preparation for a test (Thornbury 2002, p. 129). For example, if learners know that they are going to be tested on their vocabulary knowledge, they may study their vocabulary harder. Madsen (1983, p. 5) indicates that language tests can also help language teachers reflect on their teaching methods, and make decisions in administering tests on the placement of students for particular purposes.

With regard to language tests used to serve some particular purposes in research work on language studies, McNamara (2000, p. 5) points out that some researchers may need to have measures of the language proficiency of the subjects under their investigation. Therefore, an understanding of language tests and testing is helpful for researchers in creating language tests, and using tests or the information they provide, in practical and research contexts. In addition, a language test plays 3 important roles as gateways at important transitional moments in education, in employment, and in moving from one country to another.

In sum, a language test and testing play an important role both in language learning and teaching, and in research as well. Good tests can benefit language learning and teaching by sustaining or enhancing class morale, aiding learning, and also reflecting

how the students have been responding in class and in their assigned work. Apart from reflecting the results of their instruction, language tests help language teachers in decision-making in administering tests on the placement of students for particular purposes. Tests and testing also help researchers understand how to create tests to be used to serve the particular purpose of their investigation in research contexts.

5.3 Types and Purposes of Language Tests

Not all language tests are of the same kind. They differ with respect to how they are designed, and what they are for in respect of the test method and test purpose. There is no best test or best technique existing (McNamara 2000, p. 5). A test which proves ideal for one purpose may be quite useless for another; a technique which may work very well in one situation can be entirely inappropriate in another (Hughes 1989, p. 6). Normally, the main purpose of testing is to determine a learner's potential talent or capacity for learning languages, and to determine someone's proficiency in a language (Bailey 1998, p. 37). Therefore, understanding test types can be very helpful to the test constructor since tests of one kind may not be successfully substituted for those of another kind.

Some researchers, such as Hughes (1989; 2003); Millman and Greene (1993); Genesee and Upshur (1996); Bailey (1998) and Brown (2004), have classified language test types in a similar way. Hughes (1989, p. 9), categorises four main types of tests: *proficiency tests*, *achievement tests*, *diagnostic tests*, and *placement tests*. Like those of Hughes' categories, Millman and Greene (1993), Genesee and Upshur (1996, p. 153), and Brown (2004, pp. 43-47) add one or two more type of other tests. Millman and Greene (1993) add progress tests; Brown (2004) - language aptitude tests while

Genesee and Upshur (1996) – *performance tests* and *screening tests* apart from the four main types of tests proposed by Hughes (1989).

These test types are certainly differently designed in order to provide information for different kinds of educational decisions, and existing tests may prove to be useful but the researcher must decide whether an existing test is suitable for a particular purpose, or it is necessary to write appropriate new tests. It is appropriate to look at each language test type that the researcher kept in mind in deciding in what test should be employed to serve the particular purpose of the present investigation:

1) Placement tests are used to identify a particular performance level of the students and to place them at an appropriate level of instruction (Carroll 1980, p. 75; Henning 1987, p. 2; Brown 2004, p. 45) at the beginning of a course (Heaton 1990, p. 15). Such a test should be as general as possible and should concentrate on testing a wide and representative range of ability in English. It should avoid concentrating on narrow area of language and specific skills. Consequently, questions measuring general language ability can form a useful part of a placement test. These questions often consist of filling in blank items and tests of dictations.

2) Achievement tests tend to be given at the end of the course (Alderson et al 1995, p. 12). They are associated with the process of instruction. They accumulate evidence during, or at the end of, a course study in order to see whether and where progress has been made in terms of the goals of learning (McNamara 2000, p. 6). A test of achievement measures a student's mastery of what had been taught. It is thus concerned with covering a sample (or selection) which accurately represents the contents of a syllabus or a course book (Heaton 1990, p. 14). It is also used to

measure the extent of learning in a prescribed content domain, often in accordance with explicitly stated objectives of a learning programme (Henning 1987, p. 6).

3) Progress tests are given at various stages throughout a language course to measure to what extent learning goals are being learned or achieved (Carroll 1980, p. 80; Alderson et al, 1995, p. 12) during the course of instruction. Tests or quizzes are used as part an ongoing assessment procedure. It enables teachers to determine how well their students are doing with the materials that have been covered (Bailey 1998, p. 39), and it should produce a cluster of high mark. If teachers test what has recently been taught and practised, they should then expect students to score fairly high marks. If most of the students fail to score high marks, something must have been wrong with the teaching, the syllabus or the materials (Heaton 1990, p. 9).

4) Diagnostic tests are used to identify students' strengths and weaknesses (Carroll 1980, p. 81; Heaton 1990, p. 11; Henning 1987, p.1; Alderson et al, 1995, p.12; Hughes 1989, p.13). Diagnostic tests also seek to identify those areas in which a student needs further help. This test, for example, can show whether a student needs particular help with a range of skills, or they can be more specific, seeking perhaps to identify weaknesses in the students' uses of grammar or vocabulary (Alderson et al, 1995, p. 12).

5) Proficiency tests are designed to test the ability of students with different language training background (Alderson et al, 1995, p.12; Bailey 1998, pp. 37-38). In other words, it is designed to measure students' ability in a language regardless of any training they may have had in that language. The content of a proficiency test, therefore, is not based on the content or objectives of language courses which students taking the test may have followed. Rather, it is based on a specification of what students

have to be able to do in the language in order to be considered proficient (Hughes 1989, p. 9), and to measure how suitable students will be for performing a certain task or following a specific course (Heaton 1990, p. 17).

6) Aptitude tests are designed to measure capacity or general ability to learn a foreign language and ultimate success in that undertaking, and to apply to the classroom learning of any language (Brown 2004, p. 43). A language aptitude test may also be used to predict the possibility of success of a candidate in learning a foreign language or a second language (Henning 1987, p. 6; Madsen 1983, p. 200).

7) Performance tests are employed to elicit information about students' ability to use the language to perform authentic tasks, for example, work as a telephone operator or in a bank (Bailey 1998, p. 39; Genesee and Upshur 1996, p. 153).

8) Screening tests (which are sometimes referred to as *admissions tests* by Bailey 1998, p. 38) are used to admit or reject students for participation in particular courses or programmes of instruction or to award a certificate of success or completion (Bailey 1998, p. 38; Genesee and Upshur 1996, p. 153.).

As reviewed above, we can see that different types of language tests and testing carry a particular purpose, and test constructors use tests to elicit information from the target subjects. Based on the context of the present investigation which is a large-scale and an exploratory research work in nature, as well as the purpose of each type of tests and testing reviewed above, a proficiency test is considered the most suitable since it is designed to measure the overall vocabulary proficiency or ability of the research subjects with different language learning background. Besides, the proficiency test is not based on any particular content or objectives of any language courses on offer at the Rajabhat University. Rather, it is the researcher-constructed test

which is particularly designed to determine the research subjects' levels of vocabulary proficiency through different reading tasks.

5.4 Vocabulary Tests

As mentioned earlier in Chapter 2 (Section 2.2.2), even though vocabulary is a sub-skill of a language, it has been viewed as a dominant part in language learning and teaching. Without vocabulary, understanding any language is impossible whether in the spoken or the written forms, and language skill improvement is impossible. Therefore, knowledge of vocabulary is essential to the development and demonstration of linguistic skills. It is believed that the more English words students know, the better they can perform the English skills (Hughes 1989, 146). This means that knowing words helps students perform the language skills well. In essence, the attitudes held by teachers and learners of a foreign language are that vocabulary enrichment contributes to language proficiency (Barrow et al 1999, pp. 223-247; Lee 2003, pp. 537-561).

As vocabulary has been seen as a priority area in language learning and teaching, tests to monitor learners' progress in vocabulary learning are crucial. In the field of L2 vocabulary assessment, Koda (2005, pp. 55-56) indicates that the current L2 vocabulary measures used in research and instruction can be classified into three major categories: assessing vocabulary as an integral aspect of general L2 proficiency; estimating vocabulary size (number of words known); and measuring vocabulary depth (how well one knows each word).

In order to test students' knowledge of vocabulary, researchers have to put it into perspective and have been attempting to determine what constitutes knowing a word.

This is because word meanings can be 'known' to varying degrees. In doing so, some researchers, (e.g. Laufer et al., 2004; Doff, 1988; Nation, 2001; and Qian, 2002), have divided vocabulary knowledge into different dimensions with different names. Nation (2001, pp. 26-28) classifies it into "receptive" and "productive", whereas Doff (1988, p. 19); Ellis and Sinclair (1989, p. 28); Laufer et al. (2004, p. 203) call 'receptive' as "passive" and 'productive' as "active" vocabulary, with the former referring to the ability to recognise forms and meanings of a word while the latter involves the ability to use a word correctly in free production. Furthermore, Qian (2002, p. 515) proposes that vocabulary knowledge could be regarded breadth and depth. The former refers to the knowledge of word meaning of which one has at least some superficial knowledge while the latter refers to how well one knows a word. This could contain such components as pronunciation, spelling, meaning register, morphological syntax and collocation.

In respect of vocabulary testing, deciding how to test vocabulary is related to how we teach it (Madsen 1983, p. 13). Since many researchers (e.g. Carter, 1998; Chapelle 1994; Gu, 2003; Hulstijn, 1992; Madsen, 1983; Nagy, 1997; Nation, 1990; Read, 1997; 2000; Sökmen, 1997; Sternberg, 1987; Thornbury 2002) affirm that an effective strategy for learning vocabulary items is guessing the meaning of words presented in context. Similarly, testing vocabulary items should be through the context of the sentence related to the aspects of what constitutes of knowing a word. Read (2000, p. 61) further insists that language learners who were presented with the words in a rich context were significantly better at guessing what they meant than those who did not have the benefit of contextual clues. In brief, testers need to avoid presenting or testing words in isolation.

Basically, the purpose of vocabulary tests is to "measure the comprehension and production of vocabulary items used in speaking or writing" (Madsen 1983, p. 12). However, before focusing on the particular researcher-constructed vocabulary proficiency test (VPT) used for the present investigation, a discussion of types of vocabulary tests is also crucial, in order to better understand and select types of vocabulary tests that best suit the particular purpose of the present investigation.

There are different test types for testing vocabulary items, including multiple-choice tasks, completion, translation, or matching tasks (Read 2000, p. 2). Short answer questions, cloze test, multiple-choice questions, selective deletion gap filling and C-test are also suggested by Weir (1993); Read (2000); and Thornbury (2002). Additionally, Madsen (1983, p. 12) presents four general kinds of vocabulary tests: limited response, multiple-choice completion, multiple-choice paraphrase, and simple completion. What follow are brief descriptions of each vocabulary test type proposed by Madsen (1983, p. 12):

1. Limited Response is a vocabulary test for children or beginners. These test items require either a simple physical action like pointing at something or a very simple verbal answer such as 'yes' or 'no'. This test type can be used as individual testing or group testing.

2. Multiple-choice completion is a test in which a sentence with a missing word is presented, and testees choose one of four vocabulary items given to complete the sentence.

3. Multiple-choice paraphrase is a test in which a sentence with one word underlined is given. Testees choose which of four words is the closet in meaning to the underlined item.

4. Simple completion (words) is the test that requires testees to write in the missing part of words that appear in sentences.

Table 5.1 below portrays vocabulary test types and the advantages and limitations:

Table 5.1   Types of vocabulary test and its advantages and limitations

Vocabulary Test Type	Advantage	Limitation
Limited Response	1. It causes less stress or nervousness. 2. It avoids skills such as reading and writing that have not yet been developed. 3. It can be scored easily and objectively.	1. It requires individual testing, which takes longer than group testing. 2. It is usually difficult to test abstract words. 3. Sketches are sometimes ambiguous (e.g. an orange may look like a ball; running may look like dancing or jumping).
Multiple-Choice Completion	1. It helps testees see the full meaning of words by providing natural contexts. Also it is a good influence on instruction: it discourages word-list memorisation. 2. Scoring is easy and consistent. 3. It is a sensitive measure of achievement.	1. It is rather difficult to prepare good sentence contexts that clearly show the meaning of the word being tested. 2. It is easy for testees to cheat by copying what others have circled.
Multiple-Choice Paraphrase	1. Context preparation is rather easy. 2. Scoring is easy and consistent. 3. It is sensitive measure of achievement.	1. It is difficult to find good synonyms. 2. It is easy for testees to cheat.
Simple Completion (Words)	1. It reflects teaching approaches. 2. It is generally faster and easier to construct than are items with distractors.	1. Fewer words can be tested this way than multiple choice. 2. There is some difficulty in avoiding ambiguous contexts.

(Source: Madsen 1983, pp. 12-33)

Table 5.1 above displays four general types of vocabulary tests, including limited response, multiple-choice completion, multiple-choice paraphrase, and simple completion along with their advantages and limitations. However, the researcher cannot state whether one type is better than others since McNamara (2000, p. 5); Read (2000, p. 203); and other scholars insist that there is "no best method" or "best technique" for language testing. This can also be true for vocabulary testing.

Therefore, all the researcher can do is to select rigorous types of tests that best serve the particular purpose of the investigation. In so doing, advantages and limitations of each vocabulary test type must be taken into consideration.

Having considered the aforementioned advantages and limitations of each type of vocabulary tests as well as the purpose of the present investigation, it is considered that limited response is suitable for children, young learners or beginners. Moreover, both limited response and simple completion (words) should be efficient for productive skills. Consequently, two types of vocabulary tests: multiple-choice completion, and multiple-choice paraphrase were mainly employed. The next section describes how the VPT was constructed for the particular purpose of the present investigation.

5.5 The Vocabulary Proficiency Test Construction

This section aims at providing details of how the vocabulary proficiency test (VPT) for the present investigation was constructed. The main purpose of the VPT was to determine the research subjects' vocabulary proficiency in dealing with different reading tasks.

In testing proficiency, Genesee and Upshur (1996, p. 144) argue that there is no universal agreement about how to assess language proficiency or a specific aspect of language proficiency. This is also true for vocabulary testing. No single test method or a certain combination of methods can be claimed to be the best measure of vocabulary knowledge since it could be measured in many ways, such as by asking learners to provide equivalents of target language words in their first language, by asking for a word's definitions or synonyms or antonyms in the target language, or by

asking learners to supply appropriate words to complete sentences in which certain words have been deleted. As Spolsky (1995, p. 39) indicates, there is a need for multiple measures because any single measure could be wrong or inaccurate. This means that multiple methods wound be ideal, and they would provide a favourable estimate of vocabulary skills. However, this is rather impractical since it may be too complicated or time constraint, and thus the researcher for the present investigation had to choose appropriate testing methods that best served the purpose of the present investigation.

The proficiency test used to serve the purpose of any investigation must have firm theoretical foundations and it should be carefully piloted and revised if necessary (Skehan, 1984). Therefore, in order to achieve the purpose of the VPT to serve the purpose of the present investigation, many aspects of vocabulary testing were considered. The foundations which the researcher used as a guide in test construction include:

1. The VPT for the present investigation was administered to sample the research subjects' proficiency in performing a string of tasks for academic purposes. Coleman (1991) suggests that the tasks in the test should be as authentic as possible, and the marking of the test items should be reasonably straightforward. Authenticity, is defined by Bachman and Palmer (1996, p. 23; 2002, p. 23) as "the degree of correspondence of the characteristics of a given language test task to the features of a target language task", or "a function of 'interaction' between the test taker and the test task with 'communicative' or 'real-life' language use" (Bachman 1990, p. 317). When making a claim for authenticity in a test task, this task is likely to be enacted in the 'real world' (Brown 2004, p. 28). Authentic texts are those produced in genuine

communication providing learners with opportunities to experience language as it is used beyond the classroom (Nunan 1999, p. 79). Authenticity is viewed in terms of the degree to which materials have the qualities of natural speech and writing. They should be taken from authentic sources, but they could be modified to remove ambiguities or grammatical errors (Gower et al., 1995). The authentic sources could be scientific magazines, books, academic papers or newspaper articles (Raatz, 1985). On the contrary, using texts from common textbooks that students may have learned already should be avoided so that the students with prior knowledge of the content of the text, when doing the test, do not have an advantage over those with no prior knowledge (Alderson and Urquhart, 1985). To demonstrate their levels of vocabulary proficiency, research subjects should be able to perform reading tasks containing the target vocabulary items based on the aspect of 'what involves in knowing a word' proposed by many scholars (see Sub-Section 2.2.6).

2. Since the research subjects under the present investigation are students majoring in different fields, different years of study, and with different previous language learning experiences, the vocabulary items selected to be tested in the VPT should not be too difficult. This is because "choosing difficult words doesn't make much sense" (Madsen 1983, p. 12). Therefore, most vocabulary items tested are general or core vocabulary that the student might meet in the 'real-world' situations. Additionally, they are presented through authentic texts as defined above. Furthermore, vocabulary items selected to be tested are based on the results of the item analysis in terms of the level of difficulty and power of discrimination carried out after the piloting stage.

3. As to vocabulary items tested in the researcher-constructed VPT for the present investigation, only content words (nouns, verbs, adjectives and adverbs) were included. This is because content words or lexical words, "are words that carry a lexical meaning, even out of context, whereas function words or grammatical words (articles, determiners, prepositions, conjunctions, pronouns, auxiliary verbs) do not have clear lexical meanings but create meanings when they are used with content words" (Cameron 2001, p. 82). Further, function words should only appear in grammar tests (Madsen 1983, p. 17). Consequently, it is reasonable to test research subjects with content (or lexical) words rather than function (or grammatical) words. A content word in this particular researcher-constructed VPT may consist of word (e.g. student, break, English, cow), but it may also consist of a short phrase (e.g. switch on, cut down, hurry up, in front of, sister-in-law).

4. Many scholars, e.g. Carter (1998); Chapelle (1994); Clarke and Nation (n.d.); Gu (2003); Hughes (1989; 2003); Hulstijn (1992); Madsen (1983); Nagy (1997); Nagy et al. (1987); Nation (1990); Read (1997; 2000); Schmitt (2000); Sökmen (1997); Sternberg (1987); and Thornbury (2002), point out that an effective strategy to deal with unknown or unfamiliar words is to guess their meanings through contexts. Consequently, the researcher avoided presenting or testing words in isolation. To be precise, vocabulary items in the VPT were presented in contexts rather than in isolation because, as Madsen (1983) indicates, a contextualised vocabulary test may be viewed as more natural and direct than a synonym-matching test. This is consistent with Brown (2004, p. 229) who affirms that presenting or using a word in a sentence is the more authentic task rather than presenting it in isolation.

5. Most vocabulary study is carried out through reading (Brown 2004, p. 229), and as indicated that the present investigation is a large-scale, exploratory research work in nature, so it might be difficult and time-consuming to test a large number of research subjects' productive skills through speaking or writing. Rather, testing their receptive skill or tapping vocabulary that they can recognise and understand the meaning when encountering different text readings is an alternative, appropriate, useful and feasible way because reading is generally accepted as a dominant skill for most students and a number of assessments of reading recognition of vocabulary have been carried out. In academic areas of study, students deal with reading more than other skills, and they acquire vocabulary through reading. Their receptive vocabulary can become part of their productive vocabulary when they learn more and gain wider knowledge. This is consistent with Allen (1983, p. 105) who suggests that, "some words which we have learned for comprehension (or recognition) become part of our active (or productive) vocabulary. Even in our own native language, we recognise and understand many more words than we say or write". Therefore, to suit the nature of the present investigation, the receptive skill through reading was employed rather than productive skills through speaking or writing.

6. Long tests are generally more reliable than short ones (Bachman 1990, p. 220). In choosing reading texts for testing vocabulary items, the researcher estimated text length and level of difficulty based on her many years experience as a teacher of English at her university as well as some guidelines for testing vocabulary items through reading materials suggested by many scholars. For example, the reading materials for testing vocabulary items should be selected from real-world sources that testees are likely to have encountered or will encounter (Brown 2004, p. 28; Gower

et al., 1995). The real-world sources of materials could be magazines, books, academic papers or newspaper articles (Raatz, 1985). However, those reading tasks selected should not be too long, otherwise the testees may become bored or fatigued by the time they reach the end of the test, and hastily respond incorrectly (Brown 2004, p. 22).

7. The vocabulary tests should contain enough items so that research subjects would be able to reveal their vocabulary proficiency through different reading tasks within a limited time. In administering and completing the test items, the research subjects were asked to guess the meaning(s) that was a synonym of a word in context by choosing the most appropriate synonym from the list or alternatives for the underlined or bold word in the sentence, choosing the most appropriate vocabulary item from the list to fill in the blanks, and matching the most appropriate synonym provided in the sentence on the right for the underlined vocabulary item on the left. The total test contained 60 test items to be completed within 60 minutes (see full version of the VPT in Appendix 8).

8. Regarding vocabulary test formats or methods, a number of assessments of reading recognition of vocabulary are multiple-choice and matching formats since Madsen (1983, p. 8) argues that they are not complicated to construct, and they can be scored easily, quickly and consistently. Likewise, Bailey (1998, p. 130) affirms that multiple-choice tests are fast, easy, consistent, and economical to score. They can be scored objectively and thus may give the test the appearance of being fairer and/or more reliable than subjectively scored tests. This is consistent with Read (1997, p. 304) who supports that multiple-choice vocabulary tests have been proved to be highly reliable and to correlate very well with tests of reading comprehension as well

as psychometric measures of intelligence. Thus, these two formats were mainly employed in the VPT for the present investigation.

9. Tests, to be useful, must provide the tester with reliable and valid measurement for a variety of purposes. Brown (2004, p. 20) indicates that a reliable test is consistent and dependable. Apart from test reliability, validity of the test is crucial (Davies, 1984; Vincent, 1985). Validity is defined as "the relationship between evidence from test performance and the inferences about candidates' capacity to perform in the criterion that are drawn from the evidence" (McNamara 2000, p. 138). A test is said to be valid if it provides consistently accurate measurements (Hughes 1989, p. 22; 2003, p. 50). Major kinds of validity comprise content or face validity, response validity, concurrence validity, predictive validity, and construct validity. Many scholars, such as Bachman et al (1996); and Raatz (1985), affirm that of all types of validity, content validity is possibly the most important concept and is widely seen to be essential for the language test because it provides an important component in the validation of score interpretations. In order to validate the VPT in all aspects except predictive validity, questionnaires were given to language teachers as 'experts' or 'specialists' in the field of language learning, and also to a pilot sample of Rajabhat University students majoring in a variety of different fields.

10. Level of difficulty and power of discrimination of the VPT are also essential points for the researcher to take into consideration since they are the basis for the selection of test items (Alderson et al., 1995; Henning, 1987; Hughes, 1989; 2003; Madsen, 1983; Mehrens and Lehmann, 1978). For more details about level of difficulty and power of discrimination of test items, see Section 5.8: Tables 5.3-5.10.

11. Test practicality was also taken into the researcher's consideration. Brown (2004, p. 19) indicates that an effective test is practical. Moreover, it should not be excessively expensive, stay within appropriate time constraints, be relatively easy to administer, and have an evaluation procedure that is specific and time-efficient.

5.6 What does the Vocabulary Proficiency Test consist of?

As mentioned earlier in Section 5.5, the researcher-constructed vocabulary proficiency test (VPT) for the present investigation was particularly designed to determine the students' levels of vocabulary proficiency through different reading tasks. The test contains altogether 60 vocabulary items to be tested, and these vocabulary items were presented in sentence context, paragraph context, and passage context. The test consists of two main parts: 1) vocabulary items with more than one meaning; and 2) vocabulary items in different contexts (For full version of the VPT, see Appendix 8). What follows is the breakdown of the test specifications for each part of the VPT after the piloting stages, and an item analysis had been conducted. The piloting stages will be discussed in detail in Section 5.7, and subsequently the item analysis in Section 5.8.

Part 1: Vocabulary Items with More than One Meaning (Numbers 1-9)

This part contains nine target vocabulary items to be tested (Numbers 1-9), and the research subjects were advised to spend about nine minutes. To demonstrate their vocabulary proficiency, they are expected to choose the appropriate synonym of the word given.

Part 2: Vocabulary Items in Context (Numbers 10-60)

There are 3 sub-sections of vocabulary items in context: 1) vocabulary items in sentence context; 2) vocabulary items in paragraph context; and 3) vocabulary items in passage context. The whole part contains 51 target vocabulary items to be tested (Numbers 10-60):

- Numbers 10-20: Choosing the most appropriate synonym of the underlined word given

- Numbers 21-27: Matching the most appropriate synonym provided in the list on the right for the underlined word on the left

- Numbers 28-34: Choosing the most appropriate synonym of the bold word

- Numbers 35-44: Choosing the most appropriate vocabulary item from the list to fill in the blanks *(The passage was taken from Redman and Shaw 1999, p. 82)*

- Numbers 45-54: Choosing the most appropriate synonym from the list for the underlined word in the passage *(The passage was taken from Redman and Ellis 1990, p. 34)*

- Numbers 55-60: Choosing the most appropriate synonym for the bold vocabulary item in the passage *(The passage was taken from Ley, 1980)*

In summary, the researcher-constructed VPT for the present investigation contains 60 question items. The vocabulary items selected to be tested for this particular investigation consist of both a single word and short phrases. Items to be tested are core and content vocabulary items. The four alternatives and vocabulary items in the list have been provided to the research subjects. The test formats are multiple-choice

completion and multiple-choice paraphrase. Since it is the test constructed particularly to determine the research subjects' levels of vocabulary proficiency, the time was limited to one hour.

5.7 The Piloting of the Vocabulary Proficiency Test

Based on the theoretical guidelines suggested by many scholars as mentioned earlier in Section 5.5, drafts of the VPT containing 77 test items were prepared for the piloting or try-out stage. The process of test construction was carefully done under the supervision of the researcher's supervisor. The drafts of the researcher-constructed VPT, especially language use and appropriateness of test items, would be modified or changed where necessary. Different aspects of the test, such as reliability, validity, and item analysis were not taken into consideration at this stage, as they would be performed in the next step. The 'piloting' or 'try-out' stage involved pre-piloting, piloting, and post piloting stage. Each stage had a different purpose as shown in Table 5.2 below:

Table 5.2 The stages of the test trial (or try-out)

Stage:	Pre-Piloting	Piloting	Post-Piloting
Purpose:	To identify main problems or gross errors within the test	To analyse the test items for test reliability and validity as well as item analysis	To examine some problematic test items
Research Subjects:	42 university students	463 university students studying in 5 universities	The same students as in the pre-piloting stage
Result:	The research subjects provided comments and implications for the test improvement before the piloting took place	Data obtained was substantial to carry out item analysis, test refinement, and test validation.	To examine the refined problematic test items and conclusion of the final version of the test.

5.7.1 The Pre-Piloting Stage

The main purpose of the pre-piloting stage was to seek the central problems or gross errors in the instructions, contents, time allocations and layout of the test so that all problems would be corrected before the piloting stage took place. The pre-piloting stage took place in the second week of August, 2006. In the pre-piloting stage, the VPT containing 77 test items attached to a multiple-choice questionnaire was administered to 42 students studying different major fields and in different years of study at a university in the Northeast of Thailand.

After having done with the VPT, the students were asked to complete the questionnaire for feedback and comments on the test. This was very helpful for the researcher since these students provided useful information for the test improvement. At this stage, the level of difficulty and power of discrimination of the test were not taken into consideration since this stage mainly concentrated on time allocations, test instructions and the layout of the test.

Based on the results obtained through the questionnaire attached with the VPT, most of the non-English-major students reported that the test was rather difficult whereas most English major students found the test moderately difficult. The "perceived" difficulty may depend on students' age, year and major field of study, language ability, and on the type of skill being tested. However, these students' test scores revealed a positive correlation with their perception of the text difficulty. This means that students who found the test difficult or rather difficult got lower scores than those who found the test moderately difficult or rather easy. In the pre-piloting stage, the researcher was unable to judge whether the VPT was easy or difficult since the test was employed by only a small number of students. In short, even though the

VPT had been pre-piloted with a small number of students, it gave the researcher enough useful and helpful information for test improvement for the piloting stage which will be discussed later in Section 5.7.2. What follows is a summary of some implications obtained through the questionnaires during the pre-piloting stage which were considered for the test improvement for the piloting stage.

- **Test Instructions**

Some science-oriented and non science-oriented students suggested that test instructions in the VPT should be translated into Thai in order to avoid misunderstanding of the test instructions.

- **Time Allocation**

Some science-oriented and non science-oriented students reported that they were unable to finish the test within the time recommended for each part of the test. They said they needed at least 15 minutes more to complete the test because there were too many vocabulary items, so what was done for the piloting stage was to reduce the number of vocabulary items being tested.

- **The Layout of the Test**

A few English major students suggested that the layout of the test should be set attractively to draw attention of the testees.

5.7.2 The Piloting Stage

Even though the researcher got some useful implications from the pre-piloting stage, a few sections of the test were refined, and time recommended for each part was re-allocated. However, the research subjects in the piloting stage were required to complete the VPT within 60 minutes to demonstrate their vocabulary proficiency. After the pre-piloting stage, the piloting stage took place in the first week

of September 2006. At this stage, the test was administered to 463 students studying in different major fields and in different years of study in five Rajabhat Universities (one in Bangkok, one in the North, one in the West, and two in the Northeast). The students were sampled based on convenience and availability basis. Like the pre-piloting stage, before doing the test, the research subjects were asked to give feedback and comments in the questionnaire attached to the test. To be more specific, the researcher handed out the questionnaire alongside the test because the questionnaire should be completed right after they finished the test while information about the test was still fresh in their minds.

With respect to the scoring of the test items, a correct answer was given '1' whereas an incorrect or unanswered item was given '0'. Some test items were left blank, suggesting that the vocabulary items were too difficult or the test was too long. Since it was a timed test, some research subjects were unable to finish the test, and the test items that were left blank in the unfinished test were given '0' as well.

5.8 Item Analysis

Item analysis is a procedure or simple statistical way for checking individual test items (Madsen 1983, p. 180), or exploring the research subjects' responses to each of the test item so that test writers can judge the quality of the item (Mehrens and Lehmann, 1978; 1984). Item analysis is a very useful procedure for the test constructor to take into consideration when constructing a test. Hughes (1989) gives a comment about the importance of the item analysis:

> "Even individual items make their own contribution to the total test. Some contribute more than others, and it is the purpose of item analysis to identify those that need to be changed or replaced" (p. 160)

Additionally, Madsen (1983, p. 180) argues that an item analysis provides the test constructor basically three things: 1) how difficult each item is; 2) whether or not the question 'discriminates' or tells the difference between high and low students; and 3) which distractors are working as they should.

It is therefore essential to employ the students' test scores obtained through the piloting stage for the item analysis as it may be able to help the researcher see the quality of each item, and whether or not it could be changed, improved, or removed. However, Henning (1987, p. 43) indicates, "Very often, weak items cannot be identified and modified or removed without a 'try-out' or 'pilot' administration of the test". Thus, for 'a good test', the tester must 'test' the 'test' before he uses it to measure person abilities. Another good point of the item analysis is that it is appropriate when the number of subjects taking the test is over one hundred (Mehrens and Lehmann, 1978; 1984). For the present investigation, the number of subjects taking the test were 463.

Traditionally, there are two measures which are calculated for each of the objective test items: the facility value, and the discrimination index, with the former referring to the percentage of students (high and low combined) who got each item right whereas the latter refers to how well an item distinguishes between students at different levels of ability (Alderson et al, 1995). In other words, the former measures the level of difficulty of an item while the latter measures the extent to which the results of an individual item correlate with results from the whole test.

There are different item-analysis procedures, such as the classical test theory (CTT), and the item response theory (IRT), but the 'Third Technique' as suggested by Madsen (1983, p. 180) and Hopkins (1998, p. 256) was adopted in the VPT for level

of difficulty and power of discrimination. With this technique, after the test papers were scored and arranged in order, from the one with the highest score to the one with the lowest, they were divided into three equal groups: those with the highest scores in one stack (or 'the top scoring third'); this is the high group, the middle in one stack (or 'the middle third'), and the lowest in another (or 'the bottom third'); this is the low group. Then a table was constructed in order to show how many students in the top and bottom scoring thirds got the answer correct. These top and bottom scoring thirds were chosen to calculate the level of difficulty and power of discrimination of each test item. A formula suggested by Mehrens and Lehmann (1984) was used to calculate level of difficulty for each item:

Figure 5.1   A formula for item difficulty

$$\textbf{Difficulty} \quad = \quad \frac{\textbf{\textit{R}}}{\textbf{\textit{T}}} \textbf{ x 100}$$

where $\textbf{\textit{R}}$ = number of students who answered item correctly
$\textbf{\textit{T}}$ = total number of students in the two groups combined (high+low)

(Source: Mehrens and Lehmann 1984, p. 191)

Regarding the discrimination level, the researcher calculated the item discrimination by subtracting the number getting it right in the low group (R_L) from the number getting it right in the high group (R_H), and dividing by the total number of students in either group. A formula for discrimination level then is:

Figure 5.2   A formula for item discrimination

$$\textbf{Discrimination} \ = \ \frac{\textbf{\textit{R}}_{\textbf{\textit{H}}} \textbf{ - } \textbf{\textit{R}}_{\textbf{\textit{L}}}}{\textbf{\textit{(1/2)T}}}$$

(Source: Adapetd from Mehrens and Lehmann 1984, p. 192)

Mehrens and Lehmann (1978; 1984) indicate that the higher the power of discrimination, the better. The level of difficulty is dependent upon many factors, but the most important ones is the purpose of the test and the type of objective item used. In selecting good test items, any test items with the value of 0.20-0.80 for the level of difficulty, and 0.20-1.00 for the power of discrimination are considered acceptable, and no change or improvement for these test items is needed as suggested in Garrett (1996, cf. Castillo, 1990). On the contrary, any test items with the lower or higher value than those mentioned would be judged as weak items: too easy or too difficult. They need to be improved or discarded. However, as the VPT for the present investigation is examined as a whole rather than as individual parts, it should contain both easy and difficult items. Madsen (1983, p. 182) suggests that placing two or three very easy items at the beginning of the test should motivate or encourage the testees for taking the test. In brief, the results of the item analysis provided the researcher with many valuable insights into evaluating the test items, judging the quality of the test, revising of the test, and discussing test results.

In selecting good test items, only those that reach the acceptable criteria for level of difficulty and power of discrimination as the result of item analysis were chosen in the VPT. Some items that did not reach the criteria mentioned were discarded or improved by changing, modifying, or adding some more items. The item analysis of the results of the VPT for the piloting stag, the number of research subjects in high and low groups who got the item correct, the values of level of difficulty and power of discrimination, and whether items were accepted, improved, or discarded are shown in Tables 5.3-5.11:

Table 5.3 Results of item analysis of 'word associations'

Item Number		High (n=154)	Low (n=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
1	---	143	139	0.91	0.03	*discarded
2	---	122	113	0.76	0.06	*discarded
3	---	121	118	0.77	0.02	*discarded
4	---	114	72	0.60	0.28	acceptable
5	---	120	82	0.65	0.25	acceptable
6	---	109	80	0.61	0.19	*improved
7	---	133	121	0.82	0.08	*discarded
8	---	129	148	0.89	-0.13	*discarded
9	---	141	98	0.77	0.28	acceptable
10	---	124	118	0.78	0.04	*discarded

Table 5.3 reveals that three items were acceptable as good test items since they met the acceptable criteria for both the level of difficulty and the power of discrimination (Items 4, 5, and 9). One item (Item 6) needed improvement since power of discrimination was rather low. The rest were discarded because they did not meet the acceptable criteria for both level of difficulty and power of discrimination (Items 1, 2, 3, 6, 7, 8 and 10). However, the researcher made up her mind to discard this part from the final test, even though some were acceptable, for two main reasons. First, most items did not reach the criteria for both level of difficulty and power of discrimination. This means that they were too easy, and they could not discriminate the good students in the high group against the poor students in the low group. Second, only 60 test items were employed for the final VPT, therefore, discarding this part could be done since the researcher still had enough test items left in hand.

Table 5.4 Results of item analysis of 'vocabulary items for showing relationship between ideas'

Item Number		High (n=154)	Low (n=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
11	*10*	103	64	0.54	0.26	acceptable
12	*11*	72	39	0.36	0.22	acceptable
13	*12*	79	44	0.39	0.23	acceptable
14	*13*	51	32	0.26	0.13	*improved
15	*14*	60	22	0.26	0.25	acceptable

Table 5.4 reveals that four items were acceptable as good test items since they met the acceptable criteria for both level of difficulty and power of discrimination (Items 11, 12, 13, and 15). Item 14 needed improvement since the power of discrimination was rather low:

Table 5.5 Results of item analysis of 'vocabulary items with more than one meaning'

Item Number		High (n=154)	Low (n=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
16	*1*	80	46	0.40	0.22	acceptable
17	*2*	62	20	0.26	0.28	acceptable
18	*3*	87	42	0.41	0.30	acceptable
19	*4*	77	24	0.32	0.35	acceptable
20	*5*	81	31	0.36	0.33	acceptable
21	*6*	92	46	0.44	0.30	acceptable
22	*7*	82	37	0.38	0.30	acceptable
23	*8*	94	55	0.48	0.26	acceptable
24	*9*	95	40	0.43	0.36	acceptable
25	---	83	41	0.40	0.28	acceptable
26	---	82	32	0.37	0.33	acceptable
27	---	88	56	0.45	0.21	acceptable

Table 5.5 reveals that all items were acceptable as good test items since they met the acceptable criteria for both level of difficulty and power of discrimination (Items 4, 5, and 9). No change was needed to be made. However, since the researcher aimed at only 60 test items, and still had enough test items in hand, she made up her mind to select only Items 16-24 for the final VPT because each set of the vocabulary met the

acceptable criteria for both level of difficulty and power of discrimination. A set of Items 25, 26, and 27, even though met the acceptable criteria for level of difficulty, was discarded because power of discrimination of Item 27 was rather low. Since the researcher removed the first part of the VPT, test number orders in the final VPT were also changed.

Table 5.6 Results of item analysis of 'vocabulary items in sentence context' (multiple-choice)

Item Number		High (n=154)	Low (n=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
28	*15*	97	48	0.47	0.32	acceptable
29	*16*	110	73	0.59	0.24	acceptable
30	*17*	98	61	0.51	0.24	acceptable
31	*18*	106	44	0.48	0.41	acceptable
32	*19*	56	36	0.29	0.13	*improved
33	*20*	101	77	0.57	0.16	*improved

Table 5.6 shows that four items were acceptable as good test items since they met the acceptable criteria for both level of difficulty and power of discrimination (Items 28, 29, 30 and 31). Items 32 and 33 needed improvement since they did not meet the criterion for the power of discrimination. Finally, after the item improvement, all items were employed in the final VPT.

Table 5.7 Results of item analysis of 'vocabulary items in sentence context' (matching)

Item Number		High (n=154)	Low (n=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
34	*21*	71	28	0.32	0.28	acceptable
35	*22*	79	34	0.36	0.30	acceptable
36	*23*	62	19	0.26	0.28	acceptable
37	*24*	119	57	0.57	0.41	acceptable
38	*25*	52	9	0.19	0.28	*improved
39	*26*	59	24	0.26	0.23	acceptable
40	*27*	90	21	0.36	0.45	acceptable

Table 5.7 reveals that six items were acceptable as good test items since they met the acceptable criteria for both level of difficulty and power of discrimination (Items 34, 35, 36, 37, 39 and 40). One item (Item 38) needed improvement since they did not meet the acceptable criterion for level of difficulty. Finally, after item improvement, all items were employed in the final VPT.

Table 5.8 Results of item analysis of 'vocabulary items in paragraph context' (multiple-choice)

Item Number		High (n=154)	Low (n=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
41	*28*	118	62	0.58	0.37	acceptable
42	*29*	100	48	0.48	0.34	acceptable
43	*30*	95	62	0.50	0.22	acceptable
44	*31*	115	75	0.61	0.26	acceptable
45	*32*	51	36	0.28	0.10	*improved
46	*33*	62	41	0.33	0.14	*improved
47	*34*	105	71	0.57	0.22	acceptable

Table 5.8 reveals that five items are acceptable as good test items since they met the acceptable criteria for both the level of difficulty and the power of discrimination (Items 41, 42, 43, 44, and 47). Two items (Items 45 and 46) needed improvement since it did not meet the criterion for the level of power of discrimination. Finally, after some item improvement, all items were employed in the final VPT.

Table 5.9 Results of item analysis of 'vocabulary items in passage context' (vocabulary items in the list)

Item Number		High (n=154)	Low (n=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
48-57	*35-44*	36	0	0.11	0.24	*improved

Table 5.9 reveals that this set of items (Items 48-57) needed improvement because they did not meet the acceptable criterion for the level of difficulty. In this set

of vocabulary, the number of test items and number of alternatives provided in the list were equal. Thus, for the purpose of the analysis, it was scored differently from the other parts of the test. The testees were awarded '1' score if they got 6 or more correct answers in this section and "0" if they got fewer than 6 items correct answer. However, after some item improvement, all items were employed but two more alternatives were added in the list in the final VPT.

Table 5.10 Results of item analysis of 'vocabulary items in passage context' (vocabulary items in the list)

Item Number		High (N=154)	Low (N=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
58	*45*	58	12	0.22	0.30	acceptable
59	*46*	44	8	0.16	0.24	*improved
60	*47*	97	28	0.40	0.45	acceptable
61	*48*	55	19	0.24	0.24	acceptable
62	*49*	58	15	0.23	0.28	acceptable
63	*50*	57	14	0.23	0.28	acceptable
64	*51*	99	18	0.37	0.53	acceptable
65	*52*	60	6	0.21	0.35	acceptable
66	*53*	88	20	0.35	0.45	acceptable
67	*54*	134	48	0.59	0.56	acceptable

Table 5.10 reveals that nine items were acceptable as good test items since they met the acceptable criteria for both level of difficulty and power of discrimination (Items 58, 60, 61, 62, 63, 64, 65, 66, and 67). One item (Item 59) needed improvement since it did not meet the acceptable criterion for level of difficulty. However, after the item improvement, all items were employed in the final VPT.

Table 5.11 Results of item analysis of 'vocabulary items in passage context' (multiple-choice)

Item Number		High (N=154)	Low (N=154)	Level of Difficulty	Power of Discrimination	Remark
Pilot	Final					
68	*55*	71	38	0.35	0.22	acceptable
69	---	72	30	0.33	0.28	*discarded
70	*56*	52	32	0.27	0.13	*improved
71	*57*	78	31	0.35	0.31	acceptable
72	---	59	42	0.32	0.11	*discarded
73	*58*	88	54	0.46	0.22	acceptable
74	---	54	41	0.30	0.09	*discarded
75	*59*	83	21	0.31	0.41	acceptable
76	*60*	63	40	0.33	0.15	*improved
77	---	40	38	0.25	0.02	*discarded

Table 5.11 reveals that 5 items were acceptable as good test items since they met the acceptable criteria for both level of difficulty and power of discrimination (Items 68, 69, 71, 73 and 75). Five items (Items 70, 72, 74, 76, and 77) needed improvement since they did not meet the acceptable criterion for level of difficulty and power of discrimination. Since the researcher had enough test items in hand, and only one more test item needed improving, the researcher improved Item 70 to be used in the final VPT while the rest were removed.

To sum up, the results of the item analysis reveal that out of 68 test items, 44 test items were accepted as good items; 10 items needed improvement or refinement whereas 4 items were discarded. Part one of the test in the piloting stage was also removed with all items. This is because most of the items in this part were too easy. Moreover, only 60 test items were needed. Finally, the VPT for the present investigation was revised for the test improvement and refinement for the post-piloting stage. The refined and revised VPT was administered with the same group of students as in the pre-piloting stage in order to explore the reliability of the test before

being administered with the target research subjects in the last phase of data collection. What follow are some examples of the suggested solutions to some weak items that did not meet the acceptable criteria for either level of difficulty or power of discrimination. Any items which have been changed, modified, or refined were presented in italics (see Appendix 9 for full details of item improvement and refinement):

- **Part III: 3.1 Vocabulary Items in Sentence Contexts:**

Number 33: John <u>exhibited</u> his new painting to us.

a. hid	b. showed
c. formed	c. concealed

Note: The target word was not presented in a good context, thus the researcher changed it for the refinement to:

*John wanted all of us to see his new paintings, so h*e <u>*exhibited*</u> *them to us.*

- **Part III: 3.2 Vocabulary Items in Paragraph Context:**

Numbers 46-47:

You ought to know what to do to help a person who is choking. First, you stand behind the choking **victim** and put your arms around his or her waist. Second, you make a fist and place the thumb side against the person's stomach just above the navel, but below the ribs. Third, grasp your fist with your other hand and press into the victim's abdomen with a quick upward thrust. **Repeat** this action if necessary.

46. The word **victim** means …………. .

a. a sufferer	b. a helper
c. a rescuer	d. a wanderer

Note: The alternatives provided cannot discriminate good students in the high group from weak or poor students in the low group, consequently the researcher changed the alternatives to:

a. a person who suffers because of something bad
b. a person who helps other people
c. a person who is out of danger
d. a person who repeats the action

In summary, the item analysis has provided the researcher with valuable insights into how to select good test items and identify those that need to be changed or removed. After the test revision, the researcher used the test revised for post piloting conducted with the same group of students in the pre-piloting stage to explore some problems that may appear in the test. The students' scores were higher than their previous one. These students, when being asked for feedback or comments on the test, they reported that the revised test was better because it was shorter, easier, and less time-consuming than the previous one. The final version of the VPT contained 60 vocabulary items which were considered sufficient to be employed for tapping the research subjects' vocabulary proficiency through the different reading texts provided.

5.9 Test Reliability and Validity

The previous part has discussed how to judge and select good test items through the procedure of the item analysis. This part concentrates on how to ensure that the researcher-constructed vocabulary proficiency test (VPT) for the present investigation is an appropriate test to serve the purpose of the investigation.

It is generally accepted that the item analysis is a very useful procedure to help the researcher judge and select good test items; however, this procedure alone is not enough by itself to ensure the test is appropriate. The other things that the researcher has to take into consideration, apart from the results of the item analysis, are test reliability and validity. Madsen (1983) indicates that good tests are also valid and reliable. A valid test is one that measures what it claims to be measuring (p. 178) and reliable test is one that produces essentially the same results consistently on different occasions when the conditions of the test remain the same (p. 179). Hopefully, with

respect of the VPT for the present investigation, these procedures were to ensure for the researcher that the scores obtained from the research subjects under the present investigation are sufficiently reliable to determine their levels of vocabulary proficiency. The following sections describe how the reliability and validity of the VPT for the present investigation were carried out.

5.9.1 Test Reliability

Reliability refers to the extent to which a test or procedure produces similar results under constant conditions on all occasions (Bachman 1990; Bell 1999; Henning 1987; Heyes et al 1986; Roscoe 1969). A measure is reliable if it yields the same result on more than one occasion or when used by different individuals (Manstead and Semin 2001, p. 97). A test cannot be very valid if it is not very reliable. In language tests, reliability is present when the testees' results are consistent on repeated measurement and the more similar the scores would have been, the more reliable the test is said to be (Henning 1987, p. 73; Hughes 1989, p. 29). A test that has little measurement error and that is found, therefore, to consistently rank-order the testees in accordance with their comparative true abilities is necessary when important decisions are being made on the basis of test results (Henning 1987, p. 10).

The ways of estimating test reliability include *equivalent-forms method*, and internal-consistency methods (Bell 1999, p. 104; Davies et al., 1999; Frankel and Wallen, 1993; Frankfort-Nachmias and Nachmias, 1996). The equivalent-forms method needs two different but equivalent forms of the test administered to the same group of individuals during the same time period, or the same test can be administered to the same group of subjects on 2 occasions (which is called 'test-retest' reliability) (Bachman 1990, pp. 181-182; Bell 1999, p. 104; Heyes et al 1986, p. 92; Kohout

1974, p. 351). The time between the two test administrations is normally limited to no more than 2 weeks so as to minimise the effect of learning on subjects' true scores (Davies et al., 1999; Roscoe 1975). On the contrary, the internal-consistency methods (or the split-half reliability) which involves computing scores based on half of the items and scores based on the other half of the items, can be made on the basis of only a single administration of the test. This method provides a measure of adequacy of item sampling. Bachman (1990, pp. 172-173); Bell (1999, p. 104); Davies et al. (1999); Heyes et al. (1986, p. 93); and Roscoe (1975, pp. 133-134) remark that it is important that the 2 halves are comparable regarding equivalent difficulty, and Phillips (1971) affirms that the split-half reliability is extensively employed in the assessment of reality.

Since the internal-consistency methods for test reliability were proved appropriate and widely used, and the test was administered to the subjects only once, as a result, it was adopted for the present investigation. The result revealed that the reliability of the VPT was .81 which was considered acceptable, and was higher than the acceptable criterion of .70 as suggested by Fraenkel and Wallen (1993).

5.9.2 Test Validity

Validity is the extent to which a test measures the ability or knowledge that it is purported to measure (Henning 1987, p. 89; Heyes et al. 1986, p. 91), or the appropriateness, meaningfulness, and usefulness of the specific inferences researchers make based on the data they collect (Fraenkel and Wallen 1993, p. 139). A test is said to be valid to the extent that it measures accurately what it is intended or supposed to measure (Henning 1987, p. 89; Hughes 1989, p. 22; Manstead and Semin 2001, p. 97;

Roscoe 1975, p. 130). Validation of an instrument is "the process of collecting evidence to support such inference" (Fraenkel and Wallen 1993, p. 139).

It is generally accepted among testers that the test reliability alone is not enough. Validity is the important concept for researchers to take into consideration when preparing or selecting a test instrument for use. This may be because the validity tells us whether an item measures or describes what it is supposed to measure or describe or not (Bell 1999, p. 104). There are a few types of validity concerned. As discussed earlier, of all types of validity, Mehrens and Lehmann (1978; 1984) and Raatz (1985) suggest that content validity is of most concern to the test constructor because it provides an important component in the validation of score interpretation. To validate the VPT, two different sets of questionnaires were given to two different groups of respondents: 1) five university teachers of English (two are native speakers of English and three are teachers of English. They all are professional teachers teaching English in a university for over 15 years); and 2) students as the testees both in the pre-piloting and the piloting stages. The questionnaire for teachers of English as "experts" was designed to validate content validity and face validity in terms of appropriacy of vocabulary items presented in different text readings as well as test formats or methods provided in the test. The questionnaire for the students as the "testees" was designed to validate four aspects of the test. They included familiarity, difficulty, appropriacy of vocabulary items in the test, and time provided for the whole test (see Section 5). Tables 11-16 show the results of the questionnaires obtained through these 2 groups of respondents as both content validity and face validity:

Table 5.12 Appropriacy of reading tasks with vocabulary items to be tested

Type of Task	Experts' Opinions					Total	Mean	Judgment
	Exp1	Exp 2	Exp 3	Exp 4	Exp 5			
1: Word Associations	0	1	1	0	1	3	0.6	✓
2: Vocabulary for Showing Relationship between Ideas	1	1	0	1	0	3	0.6	✓
3: Vocabulary with More than One Meaning	1	1	1	1	1	5	1.0	✓
4: Vocabulary in Sentence Context (1)	1	1	1	1	1	5	1.0	✓
5: Vocabulary in Sentence Context (2)	1	0	1	1	1	4	0.8	✓
6: Vocabulary in Paragraph Context	1	1	1	0	1	4	0.8	✓
7: Vocabulary in Passage Context (1)	1	1	1	1	1	5	1.0	✓
8: Vocabulary in Passage Context (2)	1	1	1	1	1	5	1.0	✓
9: Vocabulary in Passage Context (3)	1	1	1	1	1	5	1.0	✓

Note: 1) Exp. stands for 'an expert' 2) 1 means 'valid'; and 0 'not at all valid' 3) ✓ means 'acceptable'

Of the nine reading tasks for vocabulary items to be tested, the results in Table 5.12 reveal that seven tasks were judged and accepted to be appropriate by all five experts for vocabulary items to be tested. Tasks 1 and 2, even though acceptable, they still needed some improvement since Task 1 was viewed as being too easy for tertiary level students and may not be able to discriminate the good students against the weak ones. Task 2 was problematic because the vocabulary items were presented in simple short sentences. However, the rest were appropriate for students studying in different major fields and different years of study since most of the test items were general vocabulary for any situations.

Table 5.13 Appropriacy of task format with vocabulary items to be tested

Task Format	Experts' Opinions					Total	Mean	Judgment
	Exp1	Exp 2	Exp 3	Exp 4	Exp 5			
1: Word Associations	1	1	0	1	1	4	0.8	✓
2: Vocabulary for Showing Relationship between Ideas	0	0	1	1	1	3	0.6	✓
3: Vocabulary with More than One Meaning	1	1	1	0	1	4	0.8	✓
4: Vocabulary in Sentence Context (1)	1	1	1	1	1	4	1.0	✓
5: Vocabulary in Sentence Context (2)	1	1	1	1	1	5	1.0	✓
6: Vocabulary in Paragraph Context	1	1	1	1	1	5	1.0	✓
7: Vocabulary in Passage Context (1)	1	1	1	1	1	5	1.0	✓
8: Vocabulary in Passage Context (2)	1	1	1	1	1	5	1.0	✓
9: Vocabulary in Passage Context (3)	1	1	1	1	1	5	1.0	✓

Note: 1) Exp. stands for 'an expert' 2) 1 means 'valid'; and 0 'not at all valid' 3) ✓ means 'acceptable'

In light of task formats or methods for testing vocabulary items in any aspects, the results from 5 experts reveals that all task formats, including multiple-choice paraphrase, multiple-choice completion, and matching, were acceptable as appropriate to be used because students, when doing the test, would be familiar with these formats. The only thing that the experts suggested about task formats was to put them in an attractive layout.

Apart from teachers of English as "content' experts or specialists and the face validity, students as the testees in both the pre-piloting and piloting stages were also asked to complete a questionnaire appended to the VPT for feedback to and comments on the test. The questionnaire for the feedback and comments contains 4 aspects of the test: 1) familiarity of vocabulary items tested, 2) familiarity of test formats, 3) difficulty of vocabulary items tested, as well as 4) the time provided for

doing the whole test. There was one additional part for the testees to give any general comments about the test. The first part of the questionnaire aimed to draw out what the students' opinion about vocabulary items in terms of familiarity. They were asked to indicate the familiarity of vocabulary items in the test by marking 'yes' for 'familiar'; or 'no' for 'unfamiliar'. The second part was designed to see their familiarity with the test formats or methods. They were also asked to indicate the familiarity of test formats by marking 'yes' if they were familiar, or 'no' if they were unfamiliar. The third part was designed to elicit their opinions about the difficulty of the test. The students were to indicate by choosing 1 to 5 (1: very easy, and 5: very difficult). The fourth part was about time provided for the whole test. The students were asked to indicate the appropriacy of time provided for doing the whole test by choosing 1 to 3 (1: insufficient; 2: moderate; and 3: appropriate). The questionnaire ended with the additional part for the testees to provide other of their comments on the test. The questionnaire was completed by 463 RU students studying in different major fields and levels of study. What follow are the results obtained through the questionnaires for the RU students as the testess in the piloting stage:

Table 5.14 Familiarity of vocabulary items (n=463)

Vocabulary Items Tested	Familiar	Not at all familiar
The Whole Test	318 (68.69%)	145 (31.31%)

Regarding the familiarity of vocabulary items in the test, Table 5.14 reveals that most of these students as the testees were familiar with vocabulary items to be tested tested. This may be because vocabulary items selected for the test are general or core vocabulary that can be seen in most the written texts.

Table 5.15 Familiarity of test formats/methods (n=463)

Test Formats/Methods	Familiar	Not at all familiar
1: Word Associations	302 (65.23%)	161 (34.77%)
2: Vocabulary for Joining Relationship Between Ideas	289 (62.42%)	174 (37.57%)
3: Vocabulary with More than One Meanings	276 (59.62%)	187 (40.39%)
4: Vocabulary in Sentence Contexts (1)	311 (67.17%)	152 (32.82%)
5: Vocabulary in Sentence Contexts (2)	238 (61.41%)	225 (48.59%))
6: Vocabulary in Paragraph Contexts	383 (82.73%)	80 (17.27%)
7: Vocabulary in Passage Contexts (1)	347 (74.95%)	116 (25.05%)
8: Vocabulary in Passage Contexts (2)	294 (63.50%)	169 (36.50%)
9: Vocabulary in Passage Contexts (3)	365 (78.84%)	98 (21.16%)

In respect of test formats or methods employed for the present investigation, the results from Table 5.15 revealed that most of the students as the testees reported being familiar with test formats or methods: multiple-choice completion, multiple-choice paraphrase, gap-filling, or matching formats which are generally extensively used in most objective tests.

Table 5.16 Difficulty of vocabulary items (n=463)

Vocabulary Items Tested	(1) Very easy	(2) Easy	(3) Neither easy nor difficult	(4) Difficult	(5) Very difficult
The Whole Test	27 (5.84%)	48 (10.37%)	153 (33.05%)	139 (30.03%)	96 (20.27%)

In light of the test difficulty, Table 5.16 above shows that half of the testees in the piloting stage reported that the whole test was difficult or very difficult. The easiest part of the test was part 1: word associations, and the most difficult part for them was the last part which comprised vocabulary items in passage context. This part was

reportedly difficult because the students did not know in advance that they would take the test, so they did not review their vocabulary in preparation for the test.

Table 5.17 Appropriacy of time provided for the whole test (n=463)

Time Provided	Insufficient	Fair/Moderate	Very Sufficient
The whole Test	165 (35.63%)	234 (50.54%)	64 (13.83%)

According to time provided for doing the test, a third of the testees reported that the time provided was not sufficient. Since the test contained 77 test items to be completed within 1 hour, the sttestees reported that they needed at least 15 minutes more to finish the test.

To summarise, the feedback and comments obtained through the questionnaires administered by 2 main groups of respondents provided the researcher with the insights to refine and improve the final version of the VPT for post piloting stage and for the last phase for data collection. The researcher had to keep in mind which part or section of the test should be improved or refined in terms of the difficulty of target vocabulary items for the final test. However, the VPT for the present investigation needed to contain a wide range of both familiar and unfamiliar vocabulary items presented in different reading tasks to be fair for students studying different major fields and different years of study. In this test, all of the aspects to be tested in the piloting stage met the criteria obtained through the questionnaires administered by 5 language teachers as 'experts' or 'specialists' and the students as the testees; therefore, the final VPT was considered valid as the instrument used in order to determine research subjects' levels of vocabulary proficiency for the present investigation.

5.10 Students' Levels of Vocabulary Proficiency

As mentioned in Section 5.8, the 'third' technique was employed to judge the students' levels of vocabulary proficiency. The total score of the vocabulary proficiency test (VPT) in the present investigation is 60. Through this procedure, the scores obtained through the VPT were grouped as the 'top third' scoring, 'middle third', and the 'bottom third' scoring. Any students whose test scores fall in the top third (scoring from 41-60) would be considered as 'high-proficiency', middle third (with scoring between 21-40) as 'medium-proficiency', and the 'bottom' third (with scores range from 0-20) as 'low-proficiency'. This could make certain an individual students' level of proficiency with respect to a well-defined behavioural domain, or skill and content which he or she displayed when called on to do so in a testing situation (Hudson and Lynch, 1984). What follows is the demonstration of the students' scores and their levels of vocabulary proficiency for the present investigation:

Table 5.18 Summary of the VPT scores and levels of vocabulary proficiency of the research subjects

Vocabulary Proficiency Level	Mean Score ($\overline{x}$)	Numbers of Students	Standard Deviation (S.D.)	Minimum Score	Maximum Score
Low	2.23	832 (56.17%)	.35	6	20
Medium	2.37	521 (35.18%)	.36	21	40
High	2.50	128 (8.65%)	.37	41	56
Total	2.30	1,481	.37	6	56

Note: The highest possible score was 60.

As can be seen in Table 5.18, the distribution of vocabulary proficiency levels of 1,481 students for the present investigation was not in a very well-balanced

proportion. The 'high-vocabulary proficiency' students representing only 8.65 per cent of the sample, were students whose test scores fell into the top third scoring category (a score of 41 or more out of a possible maximum of 60), the 'medium-vocabulary proficiency' students 35.18 per cent whose test scores were in the middle third (a score of 21 to 40); and the 'low- vocabulary proficiency' students 56.17 per cent of the sample were those whose test scores were in the bottom third (a score of 20 or lower). In brief, the largest proportion of students' vocabulary proficiency for the present investigation is the 'low-proficiency' level, followed by the 'medium-vocabulary proficiency' level. The 'high-vocabulary proficiency' level is the smallest proportion.

To sum up, the VPT for the present investigation was particularly designed to determine   the undergraduate students studying English at Rajabhat Universities in the 2nd semester of academic year 2006. In order to make the test valid and reliable as possible, the researcher carried out three trials: pre-piloting, piloting or tryout, and post piloting with different groups of students. The results of the pre-piloting stage provided the researcher with valuable insights to improve the test items before the piloting stage took place. Then, the refined and improved test was carried out. The results of the piloting stage provided substantial data for the researcher to perform an item analysis in order to determine which test items are considered as 'good' or 'weak' test items. In so doing, some test items   needed some improvement in order to meet the acceptable criteria of both level of difficulty and power of discrimination. After the test improvement and refinement, the next stage was to reach the post piloting stage with the same group of the students as in the pre-piloting stage. The results from the post-piloting stage revealed that the test was valid, reliable, and

appropriate to be used in the last phase for data collection. The final version of the VPT was administered to 1,481 students studying in 12 Rajabhat Universities located in different geographical regions in Thailand. Finally, the students' levels of vocabulary proficiency were determined based on test scores obtained.

5.11 Summary

This chapter has described the researcher-constructed vocabulary proficiency test (VPT) for the present investigation. In so doing, it has started to examine the importance of language tests and testing. It has also established the distinctions among types and purposes language test and test formats or methods. These aspects of tests and testing are important to underlie the researcher-constructed VPT to serve the purpose of the present investigation. Then, the VPT construction and what the VPT consisted of have been presented. Among other important things, the chapter has carried out the item analysis procedure in order to demonstrate level of difficulty and power of discrimination of individual test items. The test results from the piloting stage were tabulated, followed by the refinement as well as the improvement of the test. Before ending the chapter, the reliability and validity of the test were discussed. The last part presented Rajabhat University students' levels of vocabulary proficiency to conclude the chapter. The next chapter concentrates on data analysis.

CHAPTER 6

DATA ANALYSIS FOR VOCABULARY LEARNING

STRATEGY USE (1)

6.1 Introduction and Purpose of the Chapter

The previous chapter has presented how the vocabulary proficiency test for the present investigation was constructed. This chapter aims to demonstrate, describe, and discuss the research findings of the present investigation at different levels of data analysis, i.e. overall use of vocabulary learning strategies (VLSs), use of VLSs in the three main categories, and use of individual VLSs. However, significant variations in frequency of students' reported use of VLSs by 1,481 undergraduate students studying English at Rajabhat Universities are not taken into account in this chapter. Instead, comparisons of frequency of VLS use reported by these 1,481 students based on the holistic mean scores obtained through the vocabulary learning strategy questionnaire are determined.

Vocabulary learning strategies (VLSs) for the present investigation have been defined as "any set of techniques or learning behaviours, which language learners reported using in order to discover the meaning of new vocabulary items, to retain the knowledge of newly-learned vocabulary items, and to expand one's knowledge of vocabulary" both when in and outside the classroom settings (Intaraprasert 2004, p.53).

Regarding a review of related literature in the field of vocabulary learning in Chapter 2, it is evidenced that many variables or factors may affect the language learner's use of VLSs. These variables may be classified as 'learner individual difference' and 'teaching and learning condition' which are hypothesised to affect learner's frequency of vocabulary learning strategy use (Ellis 1994, p. 530). Examples of the former involve beliefs, attitudes, anxiety, motivation, past language learning experience, sex/gender, age, major field of study, preferred learning style, and parental encouragement while the latter includes previous VLS instruction, course level, target language studied, length of study, and task performed. However, it is difficult for the researcher to study all of the variables mentioned. Rather, the relationship between students' use of VLSs and their gender, major field of study, previous language learning experience, type of academic programme of study, and levels of vocabulary proficiency is the focal point since these variables, as reviewed, have received little attention or been neglected by most previous researchers.

Most of the previous research work in the field of VLSs has been conducted through two main methods of data collection: survey, and experiment, but studying the relationship between the students' use of VLSs and variables has not been their focal point. Based on the related literature review in Chapter 2, in terms of variation in students' use of VLSs in relation to an independent variable, of the main independent variables that may influence vocabulary learning, students' levels of vocabulary proficiency have tended to be focused.

In this chapter, a detail of VLS use has been taken into account in order to examine research subjects' strategy use at different levels. Frequency of overall strategy use of VLSs reported by 1,481 Rajabhat University (RU) students will be

explored first. This is followed by frequency of VLS use for the purposes of vocabulary learning in the three main categories: the discovery of the meaning of new vocabulary items (DMV); the retention of the knowledge of newly-learned vocabulary items (RKV); and the expansion of one's knowledge of vocabulary (EKV). Finally, an analysis of students' reported frequency of use of the 54 individual VLSs in order to achieve the particular purposes of vocabulary learning (DMV 1-14; RKV 1-21; and EKV 1-19) will be examined and analysed.

6.2 Vocabulary Learning Strategy Use Reported by 1,481 Rajabhat University Students

The starting point of this section involves simple statistical methods used in order to analyse the data obtained from 1,481 Rajabhat University (RU) students through the vocabulary learning strategy questionnaire (VLSQ) with no significant variation patterns of students' choices of vocabulary learning strategies have been concerned. The frequency of students' VLS use has been categorised as 'high', 'medium', and 'low' use. This is determined by students' responses to the VLSQ. The frequency of strategy use is indicated on a four-point rating scale, ranging from 'never', valued as 1; 'sometimes', valued as 2; 'often', valued as 3; and 'always or almost always', valued as 4. As a result, the average value of frequency of strategy use can be valued from 1.00 to 4.00. The mid-point of the minimum and the maximum values is 2.50. The mean frequency score of strategy use of each category or item valued from 1.00 to 1.99 is determined as 'low use', from 2.00 to 2.99 as 'medium use', and from 3.00 to 4.00 as 'high use'. Figure 6.1 below is the applied measures.

Figure 6.1 The applied measures
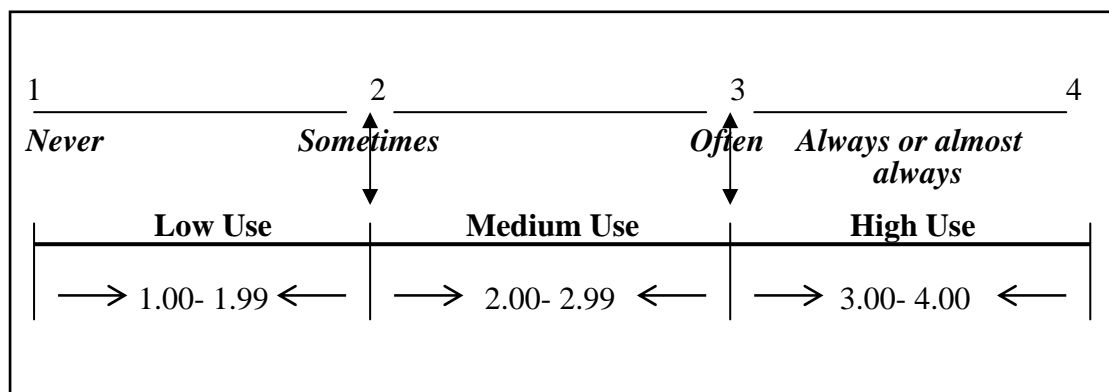
(*Source: Adapted from Intaraprasert 2000, p. 167*)

6.2.1 Frequency of Students' Overall Strategy Use

Table 6.1 below reveals the result of the holistic mean frequency score across the vocabulary strategy questionnaire administered to 1,481 undergraduate students studying English at Rajabhat Universities located in different geographical regions in Thailand.

Table 6.1 Frequency of students' reported overall strategy use

Students' Reported Strategy Use	Numbers of Students (n)	Mean Frequency Score ($\bar{x}$)	Standard Deviation (S.D.)	Frequency Category
Overall Strategy Use	1,481	2.30	.37	Medium use

As can be seen in Table 6.1, the mean frequency score of students' reported overall strategy use is 2.30. This means that these 1,481 Rajabhat University students, as the research subjects, reported employing vocabulary learning strategies with moderate frequency when they have to deal with vocabulary learning. However, certain vocabulary learning strategies, which fall into the 'high use' and 'low use' categories reported by these students will be presented later in this chapter.

6.2.2 Frequency of Use of Vocabulary Learning Strategies in the Three Main

Categories: DMV; RKV; and EKV

As mentioned earlier in the introductory part of this chapter, vocabulary learning strategies (VLSs) under the present investigation are grouped into three main categories based on the working definition proposed by Intaraprasert (2004, p. 53). These three main categories of vocabulary learning are: 1) the discovery of the meaning of new vocabulary items (DMV); 2) the retention of the knowledge of newly-learned vocabulary items (RKV); and 3) the expansion of one's knowledge of vocabulary (EKV). What follows is frequency of VLS use in each of the three categories.

Table 6.2 Frequency of use of strategies in the DMV, RKV, and EKV categories

Strategy Main Category	Numbers of Students (n)	Mean Frequency Score ($\overline{x}$)	Standard Deviation (S.D.)	Frequency Category
1) DMV Category	1,481	2.61	.38	Medium use
2) RKV Category	1,481	2.19	.42	Medium use
3) EKV Category	1,481	2.21	.45	Medium use

Table 6.2 above reveals that 1,481 Rajabhat University students reported medium frequency of VLS use in all three main categories. In comparing the mean frequency score among the three categories, VLSs that students' reported employing the most frequently fall into the DMV category, followed by the EKV, and then RKV category respectively. The following is the use of strategies to achieve particular purposes of vocabulary learning in the three main categories.

6.2.3 Frequency of Individual Vocabulary Learning Strategy Use for Vocabulary Learning Purposes

The previous section has presented frequency of strategy use for particular purposes of vocabulary learning in three main categories, including the discovery of the meaning of new vocabulary item category (DMV); the retention of the knowledge of newly-learned vocabulary item category (RKV); and the expansion of one's knowledge of vocabulary category (EKV). This section concentrates on a detail of the 54 individual vocabulary learning strategies (VLSs) which 1,481 Rajabhat University (RU) students reported employing to achieve their vocabulary learning purposes as well as vocabulary improvement in general. These strategies were reported employing for vocabulary learning not only when inside but also outside class. To give a clearer picture of VLSs which students reported employing for their particular purposes of vocabulary learning, all 54 individual VLSs are presented. Table 6.3 presents the 14 individual VLSs for the DMV category, and are referred to as DMV 1-14, followed by Table 6.4 which contains 21 individual VLSs for the RKV category, and are referred to as RKV 1-21. Finally, Table 6.5 demonstrates 19 individual VLSs for the EKV category, and are referred to as EKV 1-19.

6.2.3.1 Frequency of Individual Strategy Use for the Discovery of the Meaning of New Vocabulary Items (DMV)

Table 6.3 below shows frequency of individual vocabulary learning strategy use in the DMV category which contains 14 individual vocabulary learning strategies (VLSs) reported employing by the research subjects under the present investigation in order to discover the meaning of new vocabulary items.

Table 6.3 Frequency of individual strategy for the discovery of the meaning of new
vocabulary items (DMV)

Individual Strategy for the Discovery of the Meaning of New Vocabulary Items (DMV)	Mean ($\overline{x}$)	S.D.	Frequency Category
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	3.21	.83	High use
DMV 11 Use a Thai –English dictionary to discover the meaning of new vocabulary items	2.86	.90	Medium use
DMV 2 Guess the meaning from context to discover the meaning of new vocabulary items	2.82	.71	Medium use
DMV 12 Ask classmates or friends to discover the meaning of new vocabulary items	2.79	.78	Medium use
DMV 7 Guess the meaning from real situations to discover the meaning of new vocabulary items	2.72	.80	Medium use
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	2.69	.86	Medium use
DMV 1 Guess the meaning from a single vocabulary item to discover the meaning of new vocabulary items	2.68	.70	Medium use
DMV 9 Use an English –English dictionary to discover the meaning of new vocabulary items	2.54	1.0	Medium use
DMV 3 Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items	2.50	.72	Medium use
DMV 6 Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items	2.48	.73	Medium use
DMV 5 Guess the meaning by analysing the structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items	2.47	.78	Medium use
DMV 13 Ask teachers of English to discover the meaning of new vocabulary items	2.47	.71	Medium use
DMV 4 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items	2.36	.75	Medium use
DMV 14 Ask other people, such as members of one's family, native speakers of English, to discover the meaning of new vocabulary items	1.93	.77	Low use

Table 6.3 reveals, based on the mean frequency score, a clear picture of
1,481 Rajabhat University (RU) students' reported use of 14 individual vocabulary
learning strategies in order to discover the meaning of new vocabulary items, mainly
for learning vocabulary items in the classroom. However, it is apparently evidenced
that, the only VLS students reported employing is an English-Thai dictionary at the
high level. On the contrary, the only VLS in this category that students reported
employing at the low frequency level is 'asking other people', such as members of

one's family, or native speakers of English. The rest, were reported being employed at the medium use for the DMV purpose.

A closer look at the frequency level of strategy use in the DMV category as a whole reveals that three main category groups reported being employed by RU students include the use of dictionary, guessing the meaning, and social strategies. With regard to the use of dictionary, students reported making use of both bilingual and monolingual dictionaries in order to discover the meaning of new vocabulary items.

In terms of guessing the meaning, RU students reported guessing the meaning from contexts, guessing from real situations, guessing from gestures, guessing from a single vocabulary item, guessing from word classes (e.g. noun, verb, adjective, adverb), aural features (e.g. stress, intonation, pronunciation), and by analysing the structure of words (prefixes, roots, and suffixes).

Regarding the use of social strategies, asking other people, such as a classmate or a friend, and a teacher of English were reportedly employed.

6.2.3.2 Frequency of Individual Strategy Use for the Retention of the Knowledge of Newly-Learned Vocabulary Items (RKV)

As can be seen in Table 6.4 below, the RKV category contains 21 individual vocabulary learning strategies (VLSs) which were reported being employed by the research subjects under the present investigation in order to retain the knowledge of newly-learned vocabulary items. What follows is frequency of each individual vocabulary learning strategy use in the RKV category.

Table 6.4 Individual strategy for the retention of the knowledge of newly-learned vocabulary items (RKV)

Individual Strategy for the Retention of the Knowledge of Newly-Learned Vocabulary Item Purpose (RKV)	Mean ($\bar{x}$)	S.D.	Frequency Category
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	2.70	.76	Medium use
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English, to retain the knowledge of newly-learned vocabulary items	2.54	.76	Medium use
RKV 1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items	2.52	.71	Medium use
RKV 11 Make a vocabulary list with meanings and examples in one's note book to retain the knowledge of newly-learned vocabulary items	2.39	.77	Medium use
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	2.33	.73	Medium use
RKV 17 Associate pictures with vocabulary items to retain the knowledge of newly-learned vocabulary items	2.32	.76	Medium use
RKV 18 Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items	2.31	.79	Medium use
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	2.28	.65	Medium use
RKV 8 Sing English songs to retain the knowledge of newly-learned vocabulary items	2.27	.81	Medium use
RKV 16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items	2.25	.72	Medium use
RKV 20 Connect newly-learned vocabulary items to one's previous learning experience to retain the knowledge of newly-learned vocabulary items	2.22	.75	Medium use
RKV 6 Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items	2.17	.71	Medium use
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	2.15	.65	Medium use
RKV 10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items	2.14	.72	Medium use
RKV 19 Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items	2.12	.73	Medium use
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	2.03	.71	Medium use
RKV 7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items	1.99	.77	Low use
RKV 13 Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items	1.91	.74	Low use
RKV 12 Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom to retain the knowledge of newly-learned vocabulary items	1.87	.78	Low use
RKV 14 Group vocabulary items according to the similarity of meaning, pronunciation and spelling to retain the knowledge of newly-learned vocabulary items	1.78	.73	Low use
RKV 21 Use semantic maps to retain the knowledge of newly-learned vocabulary items	1.75	.74	Low use

As demonstrated in Table 6.4, there are 21 VLSs under the RKV category. The students' reported strategies in this category mainly involved classroom learning purposes, whereas some were for vocabulary lessons after class. No high use of VLSs by these students in order to retain the knowledge of newly-learned vocabulary items. Sixteen VLSs in this category were reported being employed at the medium frequency level, whereas five VLSs were reported at the low frequency level.

A closer examination on the sixteen VLSs in the RKV category the students reported employing at the medium frequency level in order to retain the knowledge of newly-learned vocabulary items reveals three main strategy groups as 1) repetition and rote learning; 2) strategies for vocabulary practice and improvement; and 3) word associations. Regarding the repetition and rote learning for vocabulary learning, students may repeat words several times either mentally or aloud; saying a single vocabulary item with its meanings repeatedly; saying vocabulary items with their lexical sets; in sentences; and in rhymes repeatedly.

In respect of strategies for vocabulary practice and improvement under the RKV category, various types of strategies were reportedly employed. These include doing English exercises after class, listening to an English conversation, making a vocabulary list with meanings and examples in one's note book, reviewing previous English lessons, singing English songs, using newly-learned vocabulary items to practise writing in sentences, using vocabulary items to converse with classmates or friends, and looking at words' affixes (prefixes and suffixes).

Regarding the use of word associations, various types of strategies were reported. Word associations were reported for keeping words in memory by linking English vocabulary items to other words, or things, or situations, such as associate

pictures with vocabulary items, look at real objects and associate them with vocabulary items, connect newly-learned vocabulary items to one's previous language learning experience, and associate newly-learned vocabulary items with previously-learned ones.

A closer look at five strategies reported at the low frequency level in order to retain the knowledge of newly-learned vocabulary items reveals two main strategy groups which are 1) strategies for vocabulary practice and improvement; and 2) word associations. Regarding strategies for vocabulary practice and improvement, two strategies include using vocabulary items to converse with teachers of English, and writing vocabulary items with meanings on papers and stick them on the wall in one's bedroom. In terms of word associations, three strategies, namely grouping vocabulary items according to the synonyms and antonyms, grouping vocabulary items according to the similarity of meaning, pronunciation and spelling, and using semantic maps, were reported.

6.2.3.3 Frequency of Individual Strategy Use for the Expansion of the Knowledge of Vocabulary Items (EKV)

Table 6.5 below demonstrates the EKV category with 19 individual vocabulary learning strategies which were reported being employed by the research subjects under the present investigation in order to expand their knowledge of vocabulary. What follows is frequency of individual vocabulary learning strategy use in the EKV category.

Table 6.5 Individual strategy for the expansion of the knowledge of vocabulary (EKV)

Individual Strategy for the Expansion of One's Knowledge of Vocabulary Item Purpose (EKV)	Mean ($\bar{x}$)	S.D.	Frequency Category
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	3.00	.84	High use
EKV 1 Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary	2.79	.78	Medium use
EKV 2 Listen to English songs to expand the knowledge of vocabulary	2.77	.82	Medium use
EKV 10 Study vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary	2.64	.74	Medium use
EKV 15 Practise translating sentences from English to Thai, or from to English, to expand the knowledge of vocabulary	2.51	.78	Medium use
EKV 11 Watch English programme channels on TV to expand the knowledge of vocabulary	2.45	.74	Medium use
EKV 12 Watch an English-speaking film with subtitles to expand the knowledge of vocabulary	2.40	.82	Medium use
EKV 13 Search for information through the Internet to expand the knowledge of vocabulary	2.23	.83	Medium use
EKV 8 Read English articles from different sources (texts, newspapers, brochures, leaflets, etc.) to expand the knowledge of vocabulary	2.21	.73	Medium use
EKV 9 Read a book of English-Thai conversation in various situations to expand the knowledge of vocabulary	2.18	.73	Medium use
EKV 18 Play games in English, such as scrabble, crossword puzzles, to expand the knowledge of vocabulary	2.15	.83	Medium use
EKV 3 Listen to English radio programmes to expand the knowledge of vocabulary	2.11	.77	Medium use
EKV 16 Do extra English exercises from other sources, such as texts, newspapers, the Internet, to expand the knowledge of vocabulary	2.10	.77	Medium use
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	2.02	.72	Medium use
EKV 4 Converse with classmates and friends in English to expand the knowledge of vocabulary	2.00	.68	Medium use
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	1.85	.79	Low use
EKV 17 Make a word-network of vocabulary associated with a particular item to expand the knowledge of vocabulary	1.61	.71	Low use
EKV 7 Converse with foreigners in English through the Internet to expand the knowledge of vocabulary	1.56	.77	Low use
EKV 19 Take an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary	1.37	.69	Low use

Table 6.5 demonstrates 19 individual vocabulary learning strategies (VLSs) under the EKV category reported being employed by 1,481 Rajabhat University students in order to expand their knowledge of vocabulary. The strategies

in this category were mainly concerned with self-directed learning purposes. A closer examination of the individual VLSs reveals the main strategy groups including strategies for 1) English language media utilisation; 2) vocabulary practice and improvement; and 3) other sources reliance. Table 6.5 reveals only one strategy students reported employing at the high frequency level, fourteen strategies at the medium frequency level, and four strategies at the low frequency level. The only strategy students reported employing at the high frequency level is practising using a dictionary regularly.

When considering the strategies reported being employed at the medium frequency level, we found that four strategy groups include strategies for 1) vocabulary practice and improvement; 2) English language media utilisation; 3) vocabulary expansion through conversation; and 4) other sources reliance. In respect of strategies for vocabulary practice and improvement, various types of strategies were reported. Examples are practising using a dictionary regularly; listening to English lectures, presentation, or cassettes of conversation; listening to English songs; and studying vocabulary items from advertisements, public relation notices, traffic signs.

Regarding English language media utilisation, some strategies were reportedly employed, such as watching English programme channels on TV, watching an English-speaking film with subtitles, and searching for information through the Internet. The other main strategy group that students reported employing involves strategies for vocabulary expansion through conversation, such as converse with teachers of English classmates, friends and foreigners in English. Students also reported relying on other sources reliance, such as playing games in English; making

a word-network of vocabulary associated with a particular item; and taking an extra job at tour offices, hotels, etc.

6.3 Summary

This chapter demonstrates frequency of vocabulary learning strategy use at different levels reported by 1,481 undergraduate Rajabhat University students. The description of frequency of vocabulary learning strategy use started first with an overall picture of strategy use, followed by vocabulary learning strategies in the three main categories: DMV, RKV, and EKV. And more than these, the frequency level of 54 individual vocabulary learning strategy use that these students reported employing to achieve the particular purposes of vocabulary learning was analysed and presented. The highlight of the findings of the present investigation is shown in a summary as follows:

1. Regarding the overall strategy use for vocabulary learning, 1,481 Rajabhat University students reported employing vocabulary learning strategies with medium frequency.

2. The particular purpose of vocabulary learning reported being employed by these students is to discover the meaning of new vocabulary items (DMV), retain the knowledge of newly-learned vocabulary items (RKV), and expand one's knowledge of vocabulary (EKV). Students reported employing these strategies both when inside and outside class.

3. In terms of frequency of use of strategies in the DMV, RKV, and EKV categories, 1,481 Rajabhat University reported employing strategies at the medium frequency level of use in each of the three categories.

4. The main strategy groups in each category could be discussed as strategies for 1) vocabulary practice and improvement; 2) guessing the meaning; 3) rote learning and repetition; 4) vocabulary expansion through conversation; and 5) other sources reliance.

5. Vocabulary learning strategy use at the high frequency level in the DMV category is DMV 10 - use an English-Thai dictionary to discover the meaning of new vocabulary items. No reports of vocabulary learning strategy use at the high frequency level in the RKV category have been found. The only high frequency level of use in the EKV category is EKV 14 - practise using a dictionary regularly.

In this chapter, the notion of frequency level of vocabulary learning strategies that Rajabhat University students reported employing for vocabulary learning regardless of variables has been accounted. The chapter has examined the frequency level of strategy use as a whole, the frequency level of strategy use in three main strategy categories, and a detail analysis of the frequency level of the individual strategy in each of the three main categories presented in the mean frequency scores ranging from the highest to the lowest. The next chapter still involves data analysis for vocabulary learning strategy use but particularly concerning the five independent variables investigated.

CHAPTER 7

DATA ANALYSIS FOR VOCABULARY LEARNING

STRATEGY USE (2)

7.1 Introduction and Purpose of the Chapter

Chapter 6 revealed the students' reported strategy use for vocabulary learning, which is divided into three different levels, including the overall strategy use; use of three main strategy categories (DMV, RKV, and EKV); and use of 54 individual vocabulary learning strategies (VLSs) for particular vocabulary learning purposes. This chapter is devoted to examining significant variations and patterns of variation in frequency of vocabulary learning strategy (VLS) use at each of the three different levels reported being employed by 1,481 Rajabhat University (RU) students for their vocabulary learning in relation to the five examined variables. Finally, the results of a factor analysis are presented.

The primary purposes of this chapter are; therefore, to investigate the relationship between the VLS use of 1,481 RU students and the five variables, namely:

1. The students' gender (male and female),

2. The students' major field of study (English; science-oriented; and non science-oriented),

3. The students' previous language learning experience (more experienced and less experienced),

4. The students' type of academic programme of study (regular and part-time), and

5. The students' level of vocabulary proficiency (high; medium; and low)

In order for the researcher to present the results of data analysis in this chapter, it will start off with variations in frequency of students' overall reported strategy use according to the five independent variables as mentioned earlier. This is followed by variations in frequency of use of VLSs in the three main categories. Then, students' use of individual VLSs by the five variables are explored. An analysis of variance (ANOVA), the chi-square tests, and a factor analysis are used as the main statistical methods for the data analysis:

1) An analysis of variance (ANOVA) was used to determine patterns of variation in students' overall reported strategy use, and use of strategies in the three main categories, in relation to the five independent variables. If a significant overall difference has been found as the results of ANOVA, among students' major field of study, and levels of vocabulary proficiency, the post hoc Scheffe′ test is used to pinpoint which pairs of means contributes to the overall difference.

2) The chi-square (χ^2) tests were used to check and determine the significant variation patterns in frequency of students' reported strategy use at the individual item level in association with students' gender; major field of study; previous language learning experience; type of academic programme of study; and level of vocabulary proficiency. This test compares the actual frequencies with which students gave different responses on the 4-point rating scale, a method of analysis closer to the raw data than comparisons based on average responses for each of the items. For the chi-square test for the present investigation, the responses of 1 and 2 ('Never' and

'Sometimes') were consolidated into a single "low strategy use" category whereas the responses of 3 and 4 ('Often' and 'Always or almost always') were combined into a single "high strategy use" category. The purpose of consolidating the four response levels into two categories, as Green and Oxford (1995, p. 271) suggest, is to obtain cell sizes with expected values high enough to ensure a valid analysis.

In order to test whether or not the variables are associated with each other, levels of significance must be involved and stated early in a study. As indicated by many scholars, (e.g. Brown 1988, p. 32; de Vaus 1996, p. 191; Ferguson 1981, p. 175; Kohout 1974, p. 306; McCall 1970, p. 230; Roscoe 1975, p. 182; Runyon and Haber 1991, p. 302), it is a common convention for researchers to adopt either a more conservative level of significance ($\alpha <.01$), or a more liberal level ($\alpha <.05$). McCall (1970, p. 230) suggests that usually the level of significance is placed at .05, and sometimes (though rarely) at .01 or .001, and Kohout (1974), and Runyon and Haber (1991) indicate that the .05 level is rather routinely used in the social and behavioural sciences; therefore, a level of significance of .05 was adopted for the present investigation. That is, if the probability of an event is .05, the researcher expects this event to occur 5% of the time in 100, or the 'chances that this event will occur' are 5 in 100, or less.

3) Factor analysis in the present investigation was used to find the underlying patterns of vocabulary learning strategies which are emerged from such analysis as well as the variation patterns which are strongly related to each of the five independent variables, including the student's gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency.

For a better understanding of the data analysis in this chapter, the three main levels of data analysis for students' reported vocabulary learning strategy use are demonstrated in Figure 7.1 below:

Figure 7.1   The three main levels of data analysis for vocabulary learning strategy use

Level 1: Overall Reported Strategy Use
Level 2: Use of Strategies in the Three Main Categories (DMV; RKV; and EKV)
Level 3: Use of Individual Vocabulary Learning Strategies

7.2 Variation in Students' Overall Reported Vocabulary Learning Strategy Use

This section involves variation in students' reported strategy use as a whole for vocabulary learning based on the analysis of variance (ANOVA). This statistical method demonstrates significant variation according to the student's gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency. The results from the ANOVA are summarised in Table 7.1 below. Each table contains the independent variable hypothesised to influence students' vocabulary learning strategy use, followed by mean frequency score of strategy use ($\bar{x}$), standard deviation (S.D.), level of significance, and pattern of variation in frequency of students' strategy use, if a significant variation exists.

Table 7.1 Summary of variation in students' overall reported vocabulary learning strategy use

Gender	Female (n=993)		Male (n=488)			Comments
	Mean	**S.D.**	**Mean**	**S.D.**	**Significance Level**	**Pattern of Variation**
Overall Strategy Use	2.34	.36	2.24	.37	p< .05	•Female>Male

Major Field of Study	English (n=486)		Science- (n=478)		Non Science- (n=517)		Comments	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Significance Level**	**Pattern of Variation**
Overall Strategy Use	2.50	.35	2.21	.34	2.21	.32	p< .05	• Eng >Sci • Eng >non-Sci

Previous Language Learning Experience	More Experienced (n=527)		Less Experienced (n=954)			Comments
	Mean	**S.D.**	**Mean**	**S.D**	**Significance Level**	**Pattern of Variation**
Overall Strategy Use	2.37	.38	2.27	.35	p< .05	•More experienced > Less experienced

Type of Academic Programme	Regular (n=831)		Part-time (n=650)			Comments
	Mean	**S.D.**	**Mean**	**S.D.**	**Significance Level**	**Pattern of Variation**
Overall Strategy Use	2.32	.36	2.28	.37	p< .05	•Regular >Part-time

Level of Vocabulary Proficiency	High (n=128)		Medium (n=521)		Low (n=832)		Comments	
	Mean	**S.D.**	**Mean**	**S.D.**	**Mean**	**S.D.**	**Significance Level**	**Pattern of Variation**
Overall Strategy Use	2.50	.37	2.37	.36	2.23	.35	p< .05	•High>Medium> Low

As we have seen in Table 7.1, the results from the analysis of variance (ANOVA) reveal that the frequency of students' vocabulary learning strategy use as a whole varied significantly according to their gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency (p< .05).

With regard to the student's gender, the results from ANOVA show significant differences between male and female students. The mean frequency scores of female and male students were 2.34 and 2.24 respectively. This means that in the overall picture use of vocabulary learning strategies (VLSs) for vocabulary learning purposes, female students reported employing VLSs significantly more frequently than did their male counterparts.

In terms of the student's major field of study, the post-hoc Scheffe′ test carried out after the ANOVA results shows significant differences between English and science-oriented majors. The mean frequency scores were 2.50 and 2.21 respectively. Significant differences were also found between English and non science-oriented majors with the mean frequency scores of 2.50 and 2.21 respectively. It is evident that English major students generally reported employing VLSs significantly more frequently than did those of both science- and non science-oriented students. However, no statistically significant differences were found between science- and non science-oriented majors.

According to the previous language learning experience, the results from ANOVA reveal that there was a significant difference between more and less experienced students ($p < .05$), with more previous language learning experienced students reporting employing overall vocabulary learning strategies more frequently than those with less previous language learning experience.

In respect of type of academic programme of study, significant differences have been found between regular and part-time students. The mean frequency scores of regular and part-time programmes were 2.32 and 2.28 respectively. This means that

students studying in the regular programme reported employing overall VLSs significantly more frequently than did those studying in the part-time programme.

With regard to the student's level of vocabulary proficiency (LVP) for the present investigation, students' LVP were determined based on the scores obtained through the researcher-constructed vocabulary proficiency test (VPT) as demonstrated earlier in Chapter 5 (Section 5.10). In comparing the mean frequency scores of students' LVP, the post-hoc Scheffe′ test carried out after the ANOVA results shows significant variations in the overall strategy use between students with high- medium- and low-VP levels. The mean frequency scores were 2.50 and 2.37 and 2.23 respectively. This indicates that the high-VP level students reported greater overall use of VLSs than both the medium- and low-VP level students. Similarly, the mean frequency scores between the medium- and the low-VP level students which were 2.37 and 2.23 showed that there was statistically significant difference between these two groups of proficiency level students.

7.3 Variation in Frequency of Students' Use of Strategies in the Three Main Categories: DMV; RKV; and EKV

As indicated in Chapter 4, the vocabulary learning strategies for the present investigation have been grouped into three main categories. These include 1) the discovery of the meaning of new vocabulary items, and is referred to as DMV; 2) the retention of the knowledge of newly-learned vocabulary items, referred to as RKV; and 3) the expansion of the knowledge of vocabulary, referred to as EKV. The ANOVA results reveal that the frequency of students' reported use of vocabulary learning strategies in the DMV, and EKV categories varied significantly according to

their gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency. However, no significant variations in frequency of VLS use in the RKV category have been found in relation to the five investigated variables. Tables 7.2-7.6 show the ANOVA results and the variations in frequency of students' use of strategies in the three main categories according to each of the five variables.

7.3.1 Variation in Students' Strategy Use in the Three Main Categories: (DMV; RKV; and EKV) According to Gender

Table 7.2 below demonstrates, based on the results of ANOVA, variations in students' vocabulary learning strategy use in the three main categories: DMV; RKV; and EKV categories, according to their gender.

Table 7.2 Variation in students' strategy use in the DMV; RKV; and EKV categories according to gender

Strategy Category	Female (n=993)		Male (n=488)		Comments	
	Mean	S.D.	Mean	S.D.	Significance Level	Pattern of Variation
1) DMV Category	2.64	.37	2.55	.39	p< .05	•Female >Male
2) RKV Category	2.20	.43	2.18	.41	N.S.	–
3) EKV Category	2.24	.45	2.13	.44	p< .05	•Female >Male

As seen in Table 7.2, based on the results from ANOVA, significant differences were found in the use of strategies to discover the meaning of new vocabulary items, and to expand the knowledge of vocabulary, with female students reporting employing the strategies significantly more frequently than their male counterparts. However, no significant differences were found in the use of strategies

to retain the knowledge of newly-learned vocabulary items according to gender. Although the use of strategies in the RKV category did not vary significantly according to the student's gender, the mean frequency scores of this category indicate that female students happened to report slightly greater use of the RKV strategy category than did their male counterparts. The mean frequency scores for the RKV category were 2.20 and 2.18 respectively, all of which are considered 'medium' frequency of VLS use.

7.3.2 Variation in Students' Strategy Use in the DMV; RKV; and EKV Categories According to their Major Field of Study

Table 7.3 below shows variations in students' vocabulary learning strategy use in the three main categories: DMV; RKV; and EKV categories, according to their major field of study.

Table 7.3 Variation in students' strategy use in the DMV; RKV; and EKV categories according to major field of study

Strategy Category	English (n=486)		Science (n=478)		Non-Science (n=517)		Comments	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Significance Level	Pattern of Variation
1) DMV Category	2.72	.36	2.56	.39	2.54	.37	p< .05	•Eng >Sci •Eng >non-Sci
2) RKV Category	2.18	.40	2.20	.45	2.20	.42	N.S.	–
3) EKV Category	2.46	.44	2.08	.41	2.08	.39	p< .05	•Eng >Sci •Eng >non-Sci

As seen in Table 7.3, based on the results from ANOVA, significant differences were found in the use of strategies to discover the meaning of new vocabulary items, and to expand the knowledge of vocabulary with English major students reporting employing the strategies significantly more frequently than both science-oriented and non science-oriented major students. However, no significant differences were found in the use of strategies to retain the knowledge of newly-

learned vocabulary items according to major field of study. Although the use of strategies in the RKV category did not vary significantly according to the student's major field of study, the mean frequency scores of this category indicate that both science-oriented and non science-oriented major students happened to report slightly higher use of the RKV strategy category than did English major students. The mean frequency scores for the RKV category were 2.20, 2.20, and 2.18 respectively, all of which are considered 'medium' frequency of VLS use.

7.3.3 Variation in Students' Strategy Use in the DMV; RKV; and EKV Categories According to Previous Language Learning Experience

The results of ANOVA in Table 7.4 below shows variations in students' vocabulary learning strategy use in the three main categories: DMV; RKV; and EKV categories according to their previous language learning experience.

Table 7.4 Variation in students' strategy use in the DMV; RKV; and EKV categories according to previous language learning experience

Strategy Category	More Experienced (n=527)		Less Experienced (n=954)		Comments	
	Mean	S.D.	Mean	S.D.	Significance Level	Pattern of Variation
1) DMV Category	2.68	.39	2.57	.37	p< .05	•More experienced >Less experienced
2) RKV Category	2.20	.41	2.19	.43	N.S.	-
3) EKV Category	2.27	.47	2.17	.44	p< .05	•More experienced >Less experienced

As can be seen in Table 7.4, based on the results from ANOVA, significant differences were found in the use of strategies to discover the meaning of new vocabulary items, and to expand the knowledge of vocabulary, with more previous language learning experience students reporting employing the strategies significantly

more frequently than less previous language learning experience students. However, no significant differences were found in the use of strategies to retain the knowledge of newly-learned vocabulary items according to previous language learning experience. Although the use of strategies in the RKV category did not vary significantly according to the student's previous language learning experience, the mean frequency scores of this category indicate that more previous language learning experience students happened to report slightly higher use of the RKV strategies than did less previous language learning experience students. The mean frequency scores for the RKV category were 2.20, and 2.19 respectively, all of which are considered 'medium' frequency of vocabulary learning strategy use.

7.3.4 Variation in Students' Strategy Use in the DMV; RKV; and EKV Categories According to Type of Academic Programme of Study

The results from ANOVA in Table 7.5 below reveal variations in students' vocabulary learning strategy use in the three main categories: DMV; RKV; and EKV categories, according to type of academic programme of study.

Table 7.5 Variation in students' strategy use in the DMV; RKV; and EKV categories according to type of academic programme of study

Strategy Category	Regular (n=831)		Part-time (n=650)		Comments	
	Mean	S.D.	Mean	S.D.	Significance Level	Pattern of Variation
1) DMV Category	2.62	.38	2.59	.39	N.S.	–
2) RKV Category	2.20	.43	2.19	.41	N.S.	–
3) EKV Category	2.24	.44	2.17	.46	p< .05	●Regular>Part-time

As seen in Table 7.5, based on the results from ANOVA, significant differences were found in the use of strategies to expand the knowledge of vocabulary, with regular students reporting employing the strategies significantly more frequently than their part-time counterparts. However, no significant differences were found in the use of strategies to discover the meaning of new vocabulary items or to retain the knowledge of newly-learned vocabulary items according to type of academic programme of study.

7.3.5 Variation in Students' Strategy Use in the DMV; RKV; and EKV Categories According to their Levels of Vocabulary Proficiency

The results from ANOVA shown in Table 7.6 below demonstrate variations in students' vocabulary learning strategy use in the three main categories: DMV; RKV; and EKV categories, according to their levels of vocabulary proficiency (LVP).

Table 7.6 Variation in students' strategy use in the DMV; RKV; and EKV categories according to levels of vocabulary proficiency

Strategy Category	High (n=128)		Medium (n=521)		Low (n=832)		Comments	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Significance Level	Pattern of Variation
1) DMV Category	2.74	.36	2.65	.37	2.56	.38	$p < .05$	•High>Medium >Low
2) RKV Category	2.22	.39	2.16	.41	2.21	.43	N.S.	–
3) EKV Category	2.46	.50	2.30	.44	2.10	.42	$p < .05$	•High>Medium >Low

As seen in Table 7.6, based on the results from ANOVA, significant differences were found in the use of strategies to discover the meaning of new vocabulary items, and to expand the knowledge of vocabulary, with higher-vocabulary proficiency (VP) level students reporting employing the strategies significantly more frequently than lower-VP level students. However, no significant

differences were found in the use of strategies to retain the knowledge of newly-learned vocabulary items according to this variable. Although the use of strategies in the RKV category did not vary significantly according to the student's levels of vocabulary proficiency, the mean frequency scores of this category indicate that high-VP level students happened to report slightly higher use of the RKV strategy category than both did medium- and low-VP level students. The mean frequency scores for the RKV category were 2.22, 2.16, and 2.21 respectively, all of which are considered 'medium' frequency of vocabulary learning strategy use. Below is a summary of significant variations in frequency of vocabulary learning strategy use in the DMV, RKV, and EKV categories according to the five variables.

Table 7.7 Summary of significant variations in frequency of use of strategies in the DMV; RKV; and EKV categories according to the five independent variables

Strategy Category	Gender	Major Field of Study	Previous Language Learning Experience	Type of Academic Programme of Study	Levels of Vocabulary Proficiency
1) DMV Category	YES	YES	YES	N.S.	YES
2) RKV Category	N.S.	N.S.	N.S.	N.S.	N.S.
3) EKV Category	YES	YES	YES	YES	YES

Note: 'YES' means a significant variation exists whereas 'N.S.' stands for not significant.

7.4 Variation of Individual Vocabulary Learning Strategy Use

Sections 7.2 and 7.3 discussed significant variations in frequency of students' strategy use as a whole together with the use of strategies in the three main categories obtained through the use of the analysis of variance (ANOVA). This section involves the results of the chi-square (χ^2) tests which were used to determine patterns of the

significant variations in students' reported strategy use at the individual strategy item level. The main purpose of using the chi-square tests is to examine all of the individual strategy items for significant variations by the five independent variables. The percentage of students' reporting high use of vocabulary learning strategies (3 and 4 in the vocabulary learning strategy questionnaire), and the observed chi-square ($\chi 2$) value are used to demonstrate a significant of variation in each individual strategy. What follow are patterns of significant variations in students' reported use of individual vocabulary learning strategies according to the five independent variable with a brief discussion of each of the variables.

7.4.1 Variation in Students' Individual Vocabulary Learning Strategy Use According to Gender

As we have seen previously in Sections 7.2 and 7.3, variations in frequency of students' strategy use as a whole as well as vocabulary learning strategy use in the DMV; RKV; and EKV categories varied significantly according to this variable. In this section, the individual vocabulary learning strategies (VLSs) are emphasised regarding the variations in frequency as well as the patterns of variation of VLS use. Table 7.8 below demonstrates the results of chi-square (χ^2) tests with 27 VLSs in the vocabulary learning strategy inventory (VLSI) which varied significantly in relation to the student's gender.

Table 7.8 Variation in students' individual vocabulary learning strategy use according to gender

Individual Vocabulary Learning Strategy	% of high use (3 or 4)		Observed χ^2
Used more by *female students* - 25 strategies	Females	Males	
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	84.3	68.6	$\chi^2 = 48.49$***
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	77.1	58.6	$\chi^2 = 54.62$***
EKV 1 Practise listening to English lectures, presentations, or cassettes of English conversations to expand the knowledge of vocabulary	65.7	58.0	$\chi^2 = 8.27$**
DMV 11 Use a Thai-English dictionary to discover the meaning of new vocabulary items	65.6	55.5	$\chi^2 = 14.00$***
DMV 12 Ask classmates and friends to discover the meaning of new vocabulary items	63.7	55.5	$\chi^2 = 9.28$**
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	62.3	49.6	$\chi^2 = 21.84$***
DMV 7 Guess the meaning from real situations to discover the meaning of new vocabulary items	61.1	53.9	$\chi^2 = 7.07$**
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	60.0	53.7	$\chi^2 = 5.38$*
EKV 10 Study English vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary	56.7	48.6	$\chi^2 = 8.71$**
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, native speakers of English, to retain the knowledge of newly-learned vocabulary items	52.0	41.2	$\chi^2 = 15.21$***
EKV 15 Practise translating sentences from English to Thai, or from Thai to English, to expand the knowledge of vocabulary	51.7	33.6	$\chi^2 = 42.98$***
DMV 9 Use an English-English dictionary to discover the meaning of new vocabulary items	48.8	42.4	$\chi^2 = 5.42$**
RKV 11 Make a vocabulary list with meanings and examples in one's note book to retain the knowledge of newly-learned vocabulary items	43.7	35.0	$\chi^2 = 10.17$**
RKV 17 Associate pictures with vocabulary items to retain the knowledge of newly-learned vocabulary items	40.4	34.0	$\chi^2 = 5.61$*
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	37.6	31.1	$\chi^2 = 5.86$**
RKV 16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items	33.8	26.8	$\chi^2 = 7.41$**
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	33.1	25.2	$\chi^2 = 9.70$**
EKV 18 Play games in English, such as scrabble, crossword puzzles, to expand the knowledge of vocabulary	32.4	24.0	$\chi^2 = 11.06$***

Note: * $p < .05$, ** $p < .01$, *** $p < .001$

Table 7.8 (Cont.)   Variation in students' individual vocabulary learning strategy use according to gender

Individual Vocabulary Learning Strategy	% of high use (3 or 4)		Observed χ^2
Used more by *female students* - 25 strategies	Females	Males	
EKV 9 Read a book of English-Thai conversation with various situations to expand the knowledge of vocabulary	31.8	22.7	$\chi^2 = 13.14$***
EKV 8 Read English articles from different sources, such as texts, newspapers, brochures, leaflets, to expand the knowledge of vocabulary	30.6	24.2	$\chi^2 = 6.65$**
EKV 16 Do extra English exercises from other sources, such as texts, newspapers, internet, to expand the knowledge of vocabulary	27.3	21.1	$\chi^2 = 6.63$**
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	22.9	18.2	$\chi^2 = 4.17$*
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	21.3	17.4	$\chi^2 = 3.15$*
RKV 12 Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom to retain the knowledge of newly-learned vocabulary items	19.8	15.4	$\chi^2 = 4.36$*
EKV 4 Converse with classmates or friends in English to expand the knowledge of vocabulary	19.6	15.2	$\chi^2 = 4.40$*
Used more by *male students* - 2 strategies	Males	Females	
DMV 4 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items	42.2	37.2	$\chi^2 = 3.52$*
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	27.0	22.4	$\chi^2 = 3.96$*

Note: * p< .05, ** p< .01, *** p< .001

The results from the chi-square tests in Table 7.8 reveal the significant variation in students' use of individual vocabulary learning strategies regarding their gender. Female students reported significantly a greater percentage of high use of 25 strategies for their vocabulary learning purposes than did their male counterparts, while male students reported higher use of two strategies for vocabulary learning than did female students. Of the 27 strategies for which significant differences were found according to gender, eleven were reported with high frequency of use by more than 50 per cent of the female students.

Variations in students' individual VLS with high frequency of use according to gender appear that female students reported using the dictionary significantly more frequently than did their male counterparts, i.e. using an English-Thai dictionary (DMV 10), and using a Thai-English dictionary (DMV 11) to discover the meaning of new vocabulary items. Female students also reported employing strategies for vocabulary practice and improvement significantly more frequently than did their male counterparts. Examples are practising using a dictionary regularly (EKV 14), practising listening to English lectures, presentations or cassettes of English conversation (EKV 1), listening to an English conversation of classmates, friends, teachers or native speakers of English (RKV 5), and doing English exercises after class (RKV 15). Besides, female students reported using social strategies significantly more frequently than did their male counterparts, such as asking classmates or friends (DMV 12). Significant variations in students' individual VLS with high frequency of use according to gender also appear that female students reported relying on guessing the meaning significantly more frequently than did their male counterparts, such as guessing the meaning from real situations (DMV 7), and guessing the meaning from gestures (DMV 8).

7.4.2 Variation in Students' Individual Vocabulary Learning Strategy Use According to Major Field of Study

In this section, the individual vocabulary learning strategies (VLSs) are considered regarding the variations in frequency of use, and patterns of strategy use based on the results of the chi-square tests shown in Tables 7.9-7.10 below. The findings demonstrate that 49 out of 54 vocabulary learning strategies across the strategy questionnaire varied significantly according to this variable. When compared

with the other four independent variables, this variable demonstrates the largest proportion of significant variations in students' use of individual strategies across the strategy inventory. This means that this variable has the strongest relationships with students' choices of strategy use for their vocabulary learning purposes.

Table 7.9 Variation in students' individual vocabulary learning strategy use according to major field of study

Individual Vocabulary Learning Strategy	% of high use (3 or 4)			Observed χ^2
Used more by *English > Science > Non-Science* **major students–28 strategies**	**Eng.**	**Sci.**	**Non-Sci.**	
DMV 2 Guess the meaning from context to discover the meaning of new vocabulary items	72.8	68.4	60.0	$\chi^2 = 19.48$***
EKV 2 Listen to English songs to expand the knowledge of vocabulary	72.0	56.1	51.6	$\chi^2 = 47.23$***
EKV 10 Study English vocabulary items from advertisements, public relations, traffic signs, etc. to expand the knowledge of vocabulary	68.5	49.6	44.5	$\chi^2 = 63.84$***
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	65.0	56.1	53.0	$\chi^2 = 15.87$***
DMV 7 Guess the meaning from real situations to discover the meaning of new vocabulary items	64.6	57.5	54.4	$\chi^2 = 11.30$**
EKV 15 Practise translating sentences from English to Thai, or from Thai to English to expand the knowledge of vocabulary	62.6	38.3	36.8	$\chi^2 = 82.89$***
DMV 3 Guess the meaning from word classes: noun, verb, adjective, adverb, stress, pronunciation, etc. to discover the meaning of new vocabulary items	55.6	42.7	39.8	$\chi^2 = 27.88$***
RKV 1 Say a single vocabulary item with its meaning repeatedly to retain the knowledge of newly-learned vocabulary items	55.1	41.4	40.0	$\chi^2 = 27.66$***
EKV 11 Watch English programme channels on TV to expand the knowledge of vocabulary	54.5	37.9	34.6	$\chi^2 = 46.13$***
RKV 18 Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items	47.9	32.2	30.2	$\chi^2 = 40.07$***
EKV 12 Watch an English-speaking film with subtitles to expand the knowledge of vocabulary	47.5	38.5	34.6	$\chi^2 = 18.143$***
RKV 8 Sing English songs to retain the knowledge of newly-learned vocabulary items	46.9	25.7	21.5	$\chi^2 = 85.37$***
DMV 4 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items	46.1	38.1	32.7	$\chi^2 = 19.11$***
EKV 8 Read English articles from different sources: texts, newspapers, brochures, leaflets, etc. to expand the knowledge of vocabulary	46.1	21.5	18.4	$\chi^2 = 111.16$***

Note: ** p< .01, *** p< .001

Table 7.9 (Cont.) Variation in students' individual vocabulary learning strategy use according to major field of study

Individual Vocabulary Learning Strategy	% of high use (3 or 4)			Observed χ^2
Used more by *English > Science > Non-Science* **major students–28 strategies**	**Eng.**	**Sci**	**Non-Sci**	
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	44.4	32.4	29.8	$\chi^2 = 26.34$***
RKV 6 Use new vocabulary items to converse with classmates and friends to retain the knowledge of newly-learned vocabulary items	44.4	17.6	17.2	$\chi^2 = 123.45$***
EKV 13 Search for English information through the internet to expand the knowledge of vocabulary	43.0	32.0	24.4	$\chi^2 = 39.65$***
RKV 20 Connect newly-learned vocabulary items with one's previous learning experience to retain the knowledge of newly-learned vocabulary items	41.6	28.9	23.6	$\chi^2 = 39.45$***
EKV 18 Play English games: scrabble, crossword puzzles, etc. to expand the knowledge of vocabulary	37.3	28.9	23.2	$\chi^2 = 24.09$***
EKV 3 Listen to English programmes that are broadcast on the radio to expand the knowledge of vocabulary	37.0	18.8	17.6	$\chi^2 = 63.12$***
EKV 16 Do an extra English exercises from other sources: texts, newspapers, internets, etc. to expand the knowledge of vocabulary	37.0	20.1	19.0	$\chi^2 = 53.38$***
RKV 19 Associate newly-learned vocabulary items with already-learned ones to retain the knowledge of newly-learned vocabulary items	36.2	22.6	21.5	$\chi^2 = 33.84$***
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	31.7	20.5	19.7	$\chi^2 = 24.18$***
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	26.1	20.1	18.0	$\chi^2 = 10.56$***
RKV 12 Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom to retain the knowledge of newly-learned vocabulary items	25.7	16.7	13.0	$\chi^2 = 28.46$***
RKV 14 Group vocabulary items based on the similarity of meaning/ pronunciation/ spelling to retain the knowledge of newly-learned vocabulary items	21.0	10.7	10.6	$\chi^2 = 28.89$***
EKV 7 Converse with foreigners in English through the internet to expand the knowledge of vocabulary	18.7	10.0	8.5	$\chi^2 = 27.62$***
EKV 17 Make a word-network of vocabulary associated with a particular item to expand the knowledge of vocabulary	14.0	9.0	7.4	$\chi^2 = 13.10$***

Note: *** p< .001

The results of the chi-square tests shown in Table 7.9 demonstrate the significant variations in students' use of individual vocabulary learning strategies (VLSs) according to their major field of study. The majority of English major students reported a greater use of 28 out of 54 VLSs across the strategy questionnaire than did both science-oriented and non science-oriented students.

The variations in students' individual vocabulary learning strategy reported with high frequency of use according to this variable reveal that English major students reported guessing to discover the meaning of new vocabulary items significantly more frequently than did science-oriented students. Examples are, guessing the meaning from context (DMV 2), guessing the meaning from gestures (DMV 8), guessing the meaning from real situations (DMV 7), and guessing the meaning from word classes (DMV 3). They also reported employing strategies for vocabulary practice and improvement significantly more frequently than did science-oriented students, such as listening to English songs (EKV 2), studying vocabulary items from different materials (EKV 10), and practising translating sentences from English to Thai or from Thai to English (EKV 15).

Table 7.10   Variation in students' individual vocabulary learning strategy use according to major field of study

Individual Vocabulary Learning Strategy	% of high use (3 or 4)			Observed χ^2
Used more by *English > Non-Science > Science* **major students–21 strategies**	**Eng.**	**Non-Sci.**	**Sci.**	
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	87.2	75.4	74.9	$\chi^2 = 28.4^{***}$
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	82.3	66.3	64.6	$\chi^2 = 45.01^{***}$
EKV 1 Practise listening to English lectures, presentations, or cassettes of English conversation to expand the knowledge of vocabulary	77.8	59.6	52.1	$\chi^2 = 72.63^{***}$
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	69.3	57.6	47.3	$\chi^2 = 48.27^{***}$

Note: *** p< .001

Table 7.10 (Cont.) Variation in students' individual vocabulary learning strategy use according to major field of study

Individual Vocabulary Learning Strategy	% of high use (3 or 4)			Observed χ^2
Used more by *English > Non-Science > Science* **major students–21 strategies**	**Eng.**	**Non-Sci.**	**Sci.**	
RKV 5 Listen to an English conversation of other people: classmates, friends, teachers or native speakers of English to retain the knowledge of newly -learned vocabulary items	66.5	43.5	35.4	$\chi^2 = 100.97$***
DMV 6 Guess the meaning from parts of speech: noun, verb, adjective, adverb, stress, pronunciation, etc. to discover the meaning of new vocabulary items	55.8	41.0	40.6	$\chi^2 = 29.45$***
DMV 9 Use an English-English dictionary to discover the meaning of new vocabulary items	55.6	45.1	39.5	$\chi^2 = 25.71$***
DMV 5 Guess the meaning by analysing a structure of words: prefixes, roots, and suffixes to discover the meaning of new vocabulary items	54.7	43.3	39.7	$\chi^2 = 23.93$***
RKV 11 Make note of vocabulary items with meanings and examples used in one's note book to retain the knowledge of newly-learned vocabulary items	49.6	39.8	33.1	$\chi^2 = 27.60$***
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	46.7	24.0	21.1	$\chi^2 = 90.35$***
RKV16 Use newly-learned vocabulary items to practice writing in sentences to retain the knowledge of newly-learned vocabulary items	45.5	27.3	22.0	$\chi^2 = 68.35$***
EKV 9 Read a book of English-Thai conversation with various situations to expand the knowledge of vocabulary	45.5	21.5	19.9	$\chi^2 = 97.94$***
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	38.5	13.7	8.2	$\chi^2 = 157.96$***
RKV 10 Look at words' affixes: prefixes and suffixes to retain the knowledge of newly-learned vocabulary items	37.4	21.9	18.6	$\chi^2 = 51.34$***
RKV 7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items	36.8	13.3	9.2	$\chi^2 = 136.55$***
EKV 4 Converse with classmates, or friends in English to expand the knowledge of vocabulary	35.0	10.4	9.4	$\chi^2 = 137.79$***
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	32.5	10.8	6.9	$\chi^2 = 133.24$***
RKV 13 Group vocabulary items based on the synonyms/antonyms to retain the knowledge of newly-learned vocabulary items	26.1	15.1	13.8	$\chi^2 = 29.96$***
DMV 14 Ask other people: members of one's family to discover the meaning of new vocabulary items	23.0	15.7	13.8	$\chi^2 = 16.08$***
RKV 21 Use semantic maps to retain the knowledge of newly-learned vocabulary items	21.2	11.8	9.8	$\chi^2 = 29.36$***
EKV 19 Do an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary	13.2	6.6	5.4	$\chi^2 = 22.11$***

Note: *** p< .001

The results of the chi-square tests shown in Table 7.10 demonstrate the significant variations in students' use of individual vocabulary learning strategies (VLSs) according to their major field of study. The majority of English major students reported a greater percentage of high use of 21 out of 54 VLSs across the strategy questionnaire than did both non science-oriented and science-oriented students.

The variations in students' individual vocabulary learning strategy reported with high frequency of use according to this variable demonstrate that English major students reported using the dictionary, strategies for vocabulary practice and improvement, and guessing the meaning, significantly more frequently than did non science-oriented students. English major students reported using a dictionary significantly more frequently than did science-oriented students, such as using an English-Thai dictionary (DMV 10) and an English-English dictionary (DMV 9). They also reported employing strategies for vocabulary practice and improvement significantly more frequently than did non science-oriented students. Examples are practising using a dictionary regularly (EKV 14), practising listening to English lectures, presentation, or cassettes of English conversation (EKV 1), doing English exercises after class (RKV 15), and listening to an English conversation of other people (RKV 5). Besides, they reported guessing to discover the meaning of new vocabulary items significantly more frequently than did non science-oriented students. Examples are guessing the meaning from parts of speech (DMV 6), guessing the meaning from gestures (DMV 8), guessing the meaning from real situations (DMV 7), and guessing the meaning from word classes (DMV 3).

7.4.3 Variation in Students' Individual Vocabulary Learning Strategy Use According to Previous Language Learning Experience

This section presents the individual vocabulary learning strategies regarding variations in frequency of use and patterns of variation of use based on the results of the chi-square tests shown in Table 7.11 below. The findings demonstrate 32 out of 54 vocabulary learning strategies across the strategy questionnaire varied significantly according to students' previous language learning experience. What follows is variation in students' individual vocabulary learning strategy use according to this variable.

Table 7.11 Variation in students' individual vocabulary learning strategy use according to previous language learning experience

Individual Vocabulary Learning Strategy	% of high use (3 or 4)		Observed χ^2
Used more by *more experienced* **students – 32 strategies**	**More experienced**	**Less Experienced**	
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	83.1	76.9	$\chi^2 = 7.83$***
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	74.4	69.2	$\chi^2 = 4.46$*
DMV 2 Guess the meaning from context to discover the meaning of new vocabulary items	72.1	64.0	$\chi^2 = 9.96$**
EKV 2 Listen to English songs to expand the knowledge of vocabulary	66.2	56.2	$\chi^2 = 14.23$***
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	61.9	55.8	$\chi^2 = 5.17$*
EKV 10 Study English vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary	58.8	51.4	$\chi^2 = 7.61$**
DMV 3 Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items	52.9	42.0	$\chi^2 = 16.26$***
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English, to retain the knowledge of newly -learned vocabulary items	51.8	46.5	$\chi^2 = 3.76$*
RKV 1 Say a single vocabulary item with its meaning repeatedly to retain the knowledge of newly-learned vocabulary items	51.4	42.1	$\chi^2 = 11.8$***

Note: * p< .05, ** p< .01, *** p< .001

Table 7.11 (Cont.) Variation in students' individual vocabulary learning strategy use according to previous language learning experience

Individual Vocabulary Learning Strategy	% of high use (3 or 4)		Observed χ^2
Used more by *more experienced* **students – 32 strategies**	**More experienced**	**Less Experienced**	
DMV 5 Guess the meaning by analysing the structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items	51.2	43.0	$\chi^2 = 9.31**$
EKV 15 Practise translating sentences from English to Thai, or from Thai to English, to expand the knowledge of vocabulary	51.2	42.7	$\chi^2 = 10.05**$
DMV 6 Guess the meaning from aural features, such as stress, intonation an pronunciation, to discover the meaning of new vocabulary items	51.0	42.8	$\chi^2 = 9.37***$
DMV 9 Use an English-English dictionary to discover the meaning of new vocabulary items	50.7	44.5	$\chi^2 = 5.10**$
EKV 11 Watch English programme channels on TV to expand one's knowledge of vocabulary	45.9	40.1	$\chi^2 = 4.64*$
DMV 4 Guess the meaning from grammatical structure of a sentences to discover the meaning of new vocabulary items	45.2	35.3	$\chi^2 = 13.83**$
EKV 12 Watch an English-speaking film with subtitles to expand the knowledge of vocabulary	43.8	38.1	$\chi^2 = 4.73*$
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	38.7	33.6	$\chi^2 = 3.80*$
RKV 8 Sing English songs to retain the knowledge of newly-learned vocabulary items	36.8	28.1	$\chi^2 = 12.03***$
EKV 13 Search for English information through the internet to expand the knowledge of vocabulary	36.8	36.8	$\chi^2 = 5.52*$
EKV 8 Read English articles from different sources, such as texts, newspapers, brochures, leaflets, to expand the knowledge of vocabulary	32.4	26.3	$\chi^2 = 6.28**$
EKV 9 Read a book of English-Thai conversation with various situations to expand the knowledge of vocabulary	31.7	27.3	$\chi^2 = 3.25*$
RKV 6 Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items	30.9	23.7	$\chi^2 = 9.19**$
RKV 10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items	29.8	23.8	$\chi^2 = 6.36**$
EKV 16 Do extra English exercises from other sources: texts, newspapers, Internets, etc. to expand the knowledge of vocabulary	29.8	22.7	$\chi^2 = 8.93**$
EKV 3 Listen to English radio programmes to expand the knowledge of vocabulary	28.8	21.9	$\chi^2 = 8.86**$
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	26.6	22.4	$\chi^2 = 3.19*$
EKV 4 Converse with classmates or friends in English to expand the knowledge of vocabulary	22.0	16.0	$\chi^2 = 8.15**$

Note: * p< .05, ** p< .01, *** p< .001

Table 7.11 (Cont.) Variation in students' individual vocabulary learning strategy use according to previous language learning experience

Individual Vocabulary Learning Strategy	% of high use (3 or 4)		Observed χ^2
Used more by *more experienced* **students –** 32 strategies	**More experienced**	**Less Experienced**	
DMV 14 Ask other people, such as members of one's family, native speakers of English to discover the meaning of new vocabulary items	21.3	15.47	$\chi^2 = 8.03**$
RKV 13 Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items	21.3	16.7	$\chi^2 = 4.78*$
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	19.5	15.1	$\chi^2 = 4.84*$
RKV 14 Group vocabulary items according to the similarity of meaning, pronunciation and spelling to retain the knowledge of newly-learned vocabulary items	16.7	12.6	$\chi^2 = 4.77*$
EKV 19 Take an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary	11.2	6.8	$\chi^2 = 8.50**$

Note: * p< .05, ** p< .01

The results of the chi-square tests in Table 7.11 demonstrate the significant variations in students' use of individual vocabulary learning strategies in relation to their previous language learning experience. The students with more previous language learning experience reported a greater use of 32 out of 54 VLSs across the strategy questionnaire than did those with less previous language learning experience counterparts. Of the 32 strategies with significant differences in this variation, thirteen were reported with high percentage of use by more than 50 per cent of students with more previous language learning experience.

The variations in students' individual vocabulary learning strategy reported with high percentage of use according to major field of study in this pattern include employing the use of dictionary, strategies for vocabulary practice and improvement, guessing the meaning, rote repetition, and English-language media utilisation. Regarding the use of dictionaries, the students with more previous language learning experience reported using an English-Thai dictionary (DMV 10) and using an

English-English dictionary (DMV 9) significantly more frequently than did those with less previous language learning experience. The students with more previous language learning experience also reported employing strategies for vocabulary practice and improvement significantly more frequently than did those with less previous language learning experience. Examples are practising using a dictionary regularly (EKV 14), listening to English songs (EKV 2), listening to English conversation (RKV 5), and practising translating sentences from English to Thai or from Thai to English (EKV 15). They also reported guessing to discover the meaning of new vocabulary items significantly more frequently than did those with less previous language learning experience, such as guessing the meaning from context (DMV 2), guessing the meaning from gestures (DMV 8), guessing the meaning from word classes (DMV 3), and guessing the meaning by analysing the structure of words (DMV 5). Besides, they reported utilising English-language media significantly more frequently than did the students with less previous language learning experience, such as studying English vocabulary items from advertisements, public relations notices, traffic signs, etc. (EKV 10).

7.4.4 Variation in Students' Individual Vocabulary Learning Strategy Use According to Type of Academic Programme of Study

In this section, the individual vocabulary learning strategies are considered regarding variations in frequency of use, and patterns of variation of use based on the results of the chi-square tests. The findings reveal eleven out of 54 vocabulary learning strategies across the strategy questionnaire varied significantly according to type of academic programme of study. Table 7.12 below shows the variation in students' individual vocabulary learning strategy use with regard to this variable.

Table 7.12 Variation in students' individual vocabulary learning strategy use according to type of academic programme of study

Individual Vocabulary Learning Strategy	% of high use (3 or 4)		Observed χ^2
Used more by *regular* students – 9 strategies	Regular	Part-time	
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	81.3	76.3	$\chi^2 = 5.61*$
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	73.5	67.8	$\chi^2 = 5.72*$
EKV 1 Practise listening to English lectures, presentations, or cassettes of English conversation to expand the knowledge of vocabulary	65.7	59.8	$\chi^2 = 5.38*$
EKV 2 Listen to English songs to expand the knowledge of vocabulary	62.8	55.8	$\chi^2 = 7.37**$
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English, to retain the knowledge of newly-learned vocabulary items	51.9	44.0	$\chi^2 = 9.03**$
EKV 15 Practise translating sentences from English to Thai, or from Thai to English, to expand the knowledge of vocabulary	50.1	40.2	$\chi^2 = 14.42***$
EKV 18 Play English games, such as scrabble, crossword puzzles, to expand the knowledge of vocabulary	32.1	26.5	$\chi^2 = 5.53*$
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	22.6	16.8	$\chi^2 = 7.80**$
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	18.3	14.6	$\chi^2 = 3.53*$
Used more by *part-time* students – 2 strategies	Part-time	Regular	
DMV 6 Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items	48.5	43.6	$\chi^2 = 3.53*$
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	28.8	20.1	$\chi^2 = 15.08***$

Note: * p< .05, ** p< .01, *** p< .001

The results of the chi-square tests shown in Table 7.12 demonstrate the significant variations in students' use of 11 individual vocabulary learning strategies in relation to type of academic programme of study. Eleven out of 54 VLSs across the strategy questionnaire with significant differences in this variation, the students studying the regular programme reported employing a greater percentage of high use of nine strategies than did those studying the part-time programme. On the contrary,

the part-time students reported a greater percentage of high use of two VLSs than did the full-time students.

A closer look at the findings reveals that six strategies were reported a greater percentage of high use by more than 50 per cent of the regular students. These strategies include using an English-Thai dictionary (DMV 10), practising using a dictionary regularly (EKV 14), practising listening to English lectures, presentations, or cassettes of English conversation' (EKV 1), listening to English songs (KV 2), listening to an English conversation of other people (RKV 5), practising translating sentences from English to Thai or from Thai to English (EKV 15). However, the only two strategies that part-time students reported higher use than regular students were guessing the meaning from aural features (DMV 6), and saying vocabulary items in sentences repeatedly (RKV 2).

7.4.5 Variation in Students' Individual Vocabulary Learning Strategy Use According to Level of Vocabulary Proficiency

This section considers the individual vocabulary learning strategies (VLSs) regarding variations in frequency of use, and patterns of variation. The results of the chi-square tests (χ^2) reveal that 41 out of 54 VLSs across the strategy questionnaire varied significantly according to students' level of vocabulary proficiency (LVP). When compared with the other four independent variables, it is larger than gender, previous language learning experience and type of academic programme of study, but slightly smaller than major field of study. As suggested in Oxford and Green (1995), the pattern of variation in students' use of the individual strategies could be positive (used more by higher-proficiency students), negative (used more by lower-proficiency students), or mixed. Of the 41 individual strategies showing significant variations, 40

are classified as positive, and one is classified as mixed. No individual strategies show a negative pattern of variation. To give a clearer picture of these patterns of variation, examples of stacked bar graphs showing the classification by stair-step patterns are presented later. Table 7.13 below illustrates the variations in students' individual vocabulary learning strategy use according to level of vocabulary proficiency.

Table 7.13 Variation in students' individual vocabulary learning strategy use according to level of vocabulary proficiency

Individual Vocabulary Learning Strategy	% of high use (3 or 4)			Observed χ^2
Used more by *high vocabulary proficiency –* **Positive 40 strategies**	**High**	**Medium**	**Low**	**p< .05**
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	89.1	83.1	75.1	$\chi^2 = 20.75$***
DMV 2 Guess the meaning from context to discover the meaning of new vocabulary items	82.8	69.7	62.7	$\chi^2 = 22.95$***
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	79.7	77.4	65.7	$\chi^2 = 26.07$***
EKV 1 Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary	77.3	69.5	57.0	$\chi^2 = 33.70$***
EKV 2 Listen to English songs to expand the knowledge of vocabulary	76.6	67.4	52.4	$\chi^2 = 46.30$***
EKV 10 Study vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary	74.2	61.8	46.0	$\chi^2 = 55.10$***
DMV 6 Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items	69.5	47.0	41.2	$\chi^2 = 36.37$***
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	68.0	64.7	52.5	$\chi^2 = 25.03$***
DMV 7 Guess the meaning from real situations to discover the meaning of new vocabulary items	66.4	62.4	55.3	$\chi^2 = 10.04$**
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English, to retain the knowledge of newly-learned vocabulary items	65.6	53.9	42.3	$\chi^2 = 33.96$***
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	64.8	61.4	54.7	$\chi^2 = 8.70$***

Note: ** p< .01, *** p< .001

Table 7.13 (Cont.)   Variation in students' individual vocabulary learning strategy use according to level of vocabulary proficiency

Individual Vocabulary Learning Strategy	% of high use (3 or 4)			Observed χ^2
Used more by *high vocabulary proficiency* – **Positive 40 strategies**	**High**	**Medium**	**Low**	
DMV 5 Guess the meaning by analysing the structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items	62.5	49.7	41.0	$\chi^2 = 25.34$***
DMV 3 Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items	61.7	46.8	42.9	$\chi^2 = 16.08$***
RKV 1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items	57.8	51.1	40.0	$\chi^2 = 24.37$***
EKV 15 Practise translating sentences from English to Thai, or from Thai to English to expand the knowledge of vocabulary	57.8	54.7	38.2	$\chi^2 = 43.34$***
EKV 11 Watch English programme channels on TV to expand the knowledge of vocabulary	55.5	46.4	37.5	$\chi^2 = 20.63$***
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	51.6	34.5	24.8	$\chi^2 = 43.74$***
RKV 18 Look at real objects and associate them with English vocabulary items to retain the knowledge of newly-learned vocabulary items	50.8	41.3	31.6	$\chi^2 = 24.89$***
DMV 4 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items	50.0	41.8	35.2	$\chi^2 = 13.29$**
EKV 12 Watch an English-speaking film with subtitles to expand the knowledge of vocabulary	50.0	44.9	35.6	$\chi^2 = 17.33$***
RKV 20 Connect newly-learned vocabulary items to one's previous learning experience to retain the knowledge of newly-learned vocabulary items	49.2	34.5	26.3	$\chi^2 = 31.31$***
RKV 6 Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items	48.4	29.4	20.9	$\chi^2 = 47.38$***
RKV 8 Sing English songs to retain the knowledge of newly-learned vocabulary items	47.7	38.4	24.2	$\chi^2 = 47.91$***
RKV 11 Make a vocabulary list with meanings and examples in one's note book to retain the knowledge of newly-learned vocabulary items	47.7	45.3	37.0	$\chi^2 = 11.77$**
EKV 8 Read English articles from different sources, such as texts, newspapers, brochures, leaflets, to expand the knowledge of vocabulary	46.9	35.9	21.0	$\chi^2 = 57.95$***
RKV 16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items	46.1	35.5	26.8	$\chi^2 = 25.01$***

Note: ** p< .01, *** p< .001

Table 7.13 (Cont.) Variation in students' individual vocabulary learning strategy use according to level of vocabulary proficiency

Individual Vocabulary Learning Strategy	% of high use (3 or 4)			Observed χ^2
Used more by *high vocabulary proficiency –* **Positive 40 strategies**	**High**	**Medium**	**Low**	
EKV 9 Read a book of English-Thai conversation in various situations to expand one's knowledge of vocabulary	43.8	32.4	24.3	$\chi^2 = 25.59$***
EKV 13 Search for English information through the internet to expand the knowledge of vocabulary	43.0	38.6	27.9	$\chi^2 = 22.95$***
RKV 10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items	39.1	28.0	22.6	$\chi^2 = 17.50$***
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	38.3	23.8	14.9	$\chi^2 = 44.85$***
EKV 3 Listen to English radio programmes to expand the knowledge of vocabulary	37.5	28.6	19.7	$\chi^2 = 26.82$***
RKV 19 Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items	35.9	29.6	23.4	$\chi^2 = 12.29$**
EKV 18 Play English games, such as scrabble, crossword-puzzles, to expand the knowledge of vocabulary	35.9	33.0	26.6	$\chi^2 = 8.97$*
RKV 7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items	35.2	24.8	14.2	$\chi^2 = 43.75$***
EKV 4 Converse with classmates and friends in English to expand the knowledge of vocabulary	34.4	21.5	13.6	$\chi^2 = 38.28$***
EKV 16 Do extra exercises from other sources, such as texts, newspapers, internet, to expand the knowledge of vocabulary	33.6	28.4	22.0	$\chi^2 = 52.50$**
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	33.6	21.3	11.2	$\chi^2 = 52.50$***
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	31.3	26.1	21.4	$\chi^2 = 8.97$*
DMV 14 Ask other people, such as members of one's family, native speakers of English to discover the meaning of new vocabulary items	22.7	20.0	15.1	$\chi^2 = 7.75$*
EKV 7 Converse with foreigners in English through the internet to expand the knowledge of vocabulary	21.9	15.7	8.8	$\chi^2 = 26.07$***
Mixed: Used more by *medium > high > low* **vocabulary proficiency –1 strategy**	**Medium**	**High**	**Low**	
RKV 13 Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items	21.9	19.5	15.9	$\chi^2 = 7.90$*

Note: * p< .05, ** p< .01, *** p< .001

The results of the chi-square (χ^2) tests in Table 7.13 demonstrate that the significant variations in students' use of 41 individual vocabulary learning strategies (VLSs) which were found according to their levels of vocabulary proficiency (LVP) can be presented in two main patterns of variation: 40 as positive and one as mixed. The students with high-vocabulary proficiency reported a greater percentage of high use of all 41 out of 54 VLSs across the strategy questionnaire than did the low-VP students, but 40 out of 54 VLSs than did the medium-VP students. However, a greater percentage of the medium- than the low-VP students reported high use of all 41 strategies.

Of the 41 strategies with significant differences in terms of students' LVP in this variation, 20 were reported with high frequency of use by more than 50 per cent of the high- , whereas 12 were reported with high frequency of use by more than 50 per cent of the medium-, and 8 were reported with high frequency of use by more than 50 per cent of the low-VP students. The rest, even though significantly different in this variation, were reported with high frequency of use by less than half of the students.

The positive pattern of variation in students' individual VLSs with high frequency of use according to levels of proficiency reveals that the high-VP students reported employing various types of strategies, mainly for self-directed vocabulary learning, higher than both did the medium- and the low-VP students. These strategies include using a dictionary (DMV 10 and EKV 14), guessing the meaning from context (DMV 2), guessing the meaning from aural features (DMV 6), guessing the meaning from real situations (DMV 7), guessing the meaning from gestures (DMV 8),

guessing the meaning by analysing the structure of words (DMV 8) and guessing the meaning from word classes (DMV 3).

When looking at the mixed pattern of variation, a greater percentage of the medium-VP students reported grouping vocabulary items according to the synonyms and antonyms in order to retain the knowledge of newly-learned vocabulary items (RKV 13) significantly more frequently than did both high and low proficiency students. The stacked bar graph in Figure 7.2 illustrates an example of a positive pattern of variation, and Figure 7.3 shows an example of a mixed one.

Figure 7.2 Example of variation pattern classified as positive (High >Medium >Low)

EKV 10   Study vocabulary items from advertisement, public relations notices, traffic signs, etc. to expand one's knowledge of vocabulary
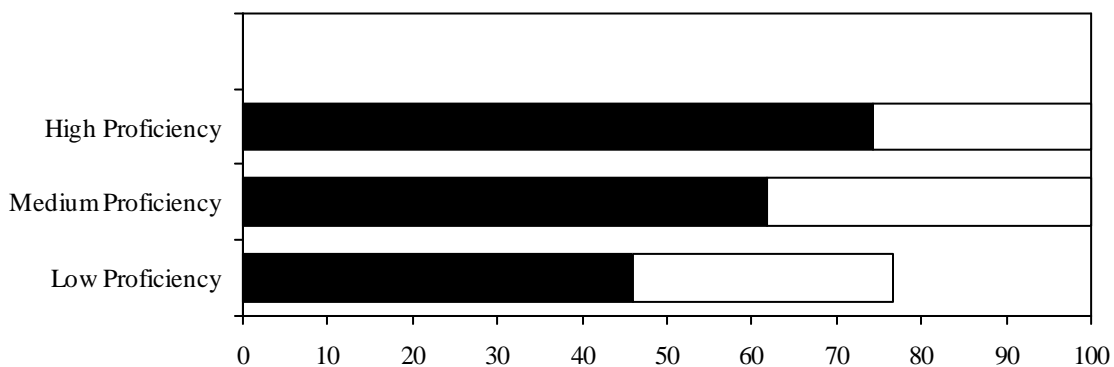
	(Darker areas) 'Often' or 'Always or almost always'			(White areas) 'Never' or 'Sometimes'	
	n	**Response**	**(%)**	**Response**	**(%)**
High proficiency	128	95	74.2	33	25.8
Medium proficiency	521	322	61.8	199	38.2
Low proficiency	832	383	46.0	449	54.0
$\chi^2 = 55.10$ (df = 2), p < .001					

Figure 7.2 shows that 21.9 per cent of medium-VP student reported high frequency of use of RKV 13: study vocabulary items from advertisement, public relations notices, traffic signs, etc. to expand their knowledge of vocabulary; whereas 61.8 and 46 per cent of medium- and low-VP students reported high frequency of use of this vocabulary strategy.

Figure 7.3 Example of variation pattern classified as mixed (Medium > High >Low)

RKV 13 Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary item
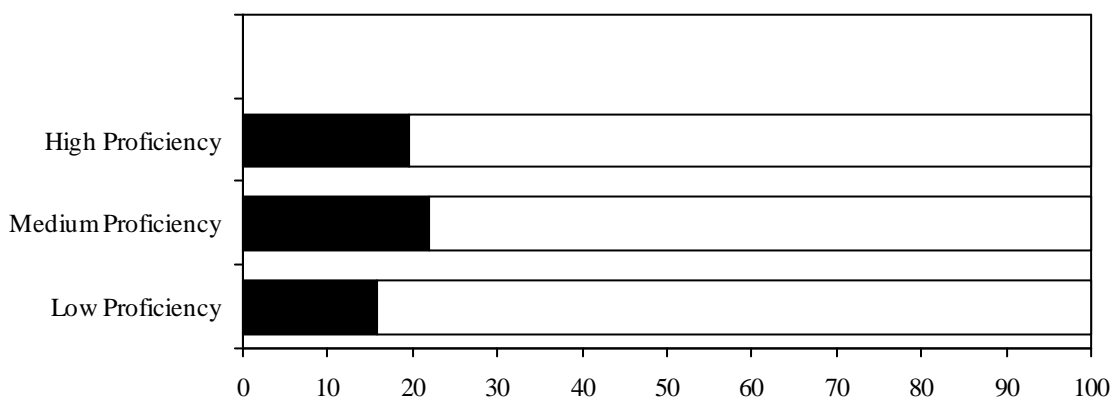
	(Darker areas) 'Often' or 'Always or almost always'			(White areas) 'Never' or 'Sometimes'	
	n	**Response**	**(%)**	**Response**	**(%)**
High proficiency	128	25	19.5	103	80.5
Medium proficiency	521	114	21.9	407	78.1
Low proficiency	832	132	15.9	700	84.1

$\chi^2 = 7.90$ (df = 2), p < .05

Figure 7.3 shows that 21.9 per cent of medium-VP student reported high frequency of use of RKV 13: Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary item; whereas 19.5

and 15.9 per cent of high- and low-VP students reported high frequency of use of this vocabulary learning strategy.

7.5 Results of Factor Analysis

Apart from the analysis of variance (ANOVA), and the chi-square tests, factor analysis is another statistical method used to examine which variables in a data set are strongly related to the examined variables. Factor analysis is a mathematically complex procedure which reduces a correlation matrix containing many variables into much smaller number of factors (Howitt and Cramer 2000, p. 323). Many researchers (e.g. Child, 1973; Cohen and Manion, 1994; de Vaus, 1996; Ferguson, 1981; Howitt and Cramer, 2000; Kim and Mueller, 1978; Nunan, 1989; Richards et al., 1992; Robson, 1993; Skehan, 1989) affirm that with data on so many variables, it becomes difficult to make sense of the complexity of the data. This is where factor analysis can be beneficial and appropriate to deal with this difficulty by reducing attribute space from a large set or number of variables to a smaller set or number of underlying variables called *factors*, or supervariables termed by Howitt and Cramer (2000, p. 323), and determines the nature of underlying patterns of variance among a large set or number of variables.

Furthermore, Cohen and Manion (1994); and Howitt and Cramer (2000) assert, this approach is appropriate in exploratory research where the researcher aims at imposing an orderly simplification on a number of interrelated measures. However, Howitt and Cramer (2000, p. 324) comment that factor analysis is more subjective and judgmental than most statistical techniques. This is not solely because of the subjectivity of interpreting the meaning of factors, but there are many variants of

factor analysis as well. In the context of the present investigation, the factor analysis is employed in order for the researcher to seek the underlying structure of the whole set of vocabulary learning strategies (VLSs) in the vocabulary learning strategy inventory (VLSI). However, before proceeding with a detailed discussion of factor analysis, it is important to make clear that the factor analysis for the present investigation is aimed to be exploratory rather than confirmatory because the researcher has no clear ideas about what the factor structure might be or want to confirm any factors that may be extracted from the strategy inventory.

In order to understand factor analysis for the present investigation, it is useful to start with the 52 VLSs in the vocabulary learning strategy inventory (VLSI) which were found to vary significantly with regard to the five independent variables. That is, in seeking the nature of underlying pattern or structure of vocabulary learning strategies (VLSs) across the VLSI, these 52 VLSs will be reduced by the processes of factor analysis starting with a principal component factor analysis through the extraction method, followed by the varimax rotation method for the correlations of the 52 VLSs mentioned. Since Howitt and Cramer (2000, p. 324) affirm that there are no commonly available and universally accepted tests of the significance of a factor, but one commonly accepted is to ignore any factor for which the eigenvalue is less than 1.00. This means that, any factor for which the eigenvalue is equal to or higher than 1.00 is accepted as an important or 'statistically significant' factor. Table 7.14 demonstrates the initial ten extracted factors with extraction sums of squared loading or eigenvalues equal to or higher than 1.00.

Table 7.14 The sums of squared factor loadings of the initial ten factors

Factor	Extraction Sums of Squared Loadings (Eigenvalues)		
	Total	% of variance	Cumulative %
1	13.288	25.554	25.554
2	2.471	4.752	30.305
3	2.371	4.560	34.865
4	2.019	3.884	38.749
5	1.753	3.371	42.120
6	1.457	2.801	44.922
7	1.431	2.751	47.673
8	1.231	2.368	50.041
9	1.120	2.153	52.194
10	1.058	2.034	54.228

Table 7.14 reveals that when taken these initial ten extracted factors together, they accounted for 54.23 per cent of the variability among the 52 VLSs found to vary significantly with regard to the five independent variables. In fact, there could be as many factors as variables which a researcher started off with; however, this makes it rather difficult to interpret. Therefore, instead of using the initial ten extracted factors, reducing the number of factors from ten to seven or eight was further examined. The results of the varimax rotation demonstrate slightly different groupings of strategies between seven and eight factors. Having taken the factor interpretation into consideration, and since the extracted seven and eight factors are found slightly different in respect of internal relationship among the strategies emerging under the same factors, the researcher found that it could be more straightforward to interpret the extracted eight factors rather than seven factors. The percentages of variance in Table 7.14 indicate that almost 50 per cent of the total variation between the frequency of strategy use can be explained by the first eight principal components. That is to say, the figure of 50.04 per cent means that approximately half of the

variability was not explained by the eight factors; thus, other influences may also make a difference in students' strategy use. Then, the individual VLSs were ordered regarding their loading on the first factor.

In terms of factor loadings of the factors in a data set, the factor 'loadings' reflect or indicate the degree or level of relationship (correlation) between the factors and the different variables used in the analysis (Bachman 1990; Seliger and Shohamy, 1989; Skehan, 1989). According to Howitt and Cramer (2000, p. 323) and Skehan (1989, p. 17), the factor loadings follow all of the rules for correlation coefficients, so they vary from -1.00 through 0.00 to + 1.00. Kinner and Gray (2000, p. 348) and Skehan (1989, p. 17) affirm that the greater the value of a loading on a factor, the more important that the factor is in accounting for the correlations between the factors and the variables tested. As a result, the factor loadings with absolute values below 0.30 (Child 1973, p. 45; Howitt and Cramer 2000, p. 331), or 0.35 (Skehan 1989, p. 17) have not been shown or reported because they are too low to be important, and would simply clutter up the table unhelpfully. Similarly, the VLSs for the present investigation which have the highest loadings with the first factor are used to define the factor. For example, the VLSs which are highly loaded are grouped together for their loading on the first factor. This grouping, as Howitt and Cramer (2000) indicate, can help the interpretation of the factors since the high loading strategy items are the ones which primarily help a researcher to decide what factor they might be. With the factor analysis, researchers may describe differently in interpretation of the factors which emerge. The VLSs as identified in the VLSI and the eight factors obtained through the factor analysis were not expected to be identical, rather, to be mutually supportive.

In the present investigation, each of the factors is described based on the content or relationship of the majority of the VLS items which appear to share common characteristics under the same factor. Table 7.15 below shows the eight extracted factors, the factor loadings on each strategy item, and the percentage of variance accounted for each of the factors.

Table 7.15 List of the eight extracted factors

Factor 1: Strategies for Self-Directed Vocabulary Learning through English-Language Media Utilisation	Factor Loading	% of variance
EKV 2 Listen to English songs to expand the knowledge of vocabulary	.66	
EKV 12 Watch an English-speaking film with subtitles to expand the knowledge of vocabulary	.64	
EKV 11 Watch English programmes on TV to expand the knowledge of vocabulary	.63	
EKV 10 Study English vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary	.62	
RKV 8 Sing English song to retain the knowledge of newly-learned vocabulary items	.50	
EKV 3 Listen to English radio programmes to expand the knowledge of vocabulary	.49	25.55
EKV 8 Read English articles from different sources, such as texts, magazines, brochures, leaflets, to expand the knowledge of vocabulary	.48	
EKV 13 Search for English information through the internet to expand the knowledge of vocabulary	.48	
EKV 18 Play games in English, such as scrabble, crossword puzzles, to expand the knowledge of vocabulary	.47	
EKV 9 Read a book of English-Thai conversation in various situations to expand the knowledge of vocabulary	.46	
EKV 15 Practise translating sentences from English to Thai, or from Thai to English to expand the knowledge of vocabulary	.44	
Factor 2: Strategies for Vocabulary Expansion through Conversation		
RKV 7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items	.74	
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	.69	
EKV 5 Converse with teachers of English in English to expand one's knowledge of vocabulary	.63	4.75
EKV 4 Converse with classmates and friends in English to expand the knowledge of vocabulary	.62	
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English to retain the knowledge of newly-learned vocabulary items	.60	

Table 7.15 (Cont.) List of the eight extracted factors

Factor 2 (Cont.): Strategies for Vocabulary Expansion through Conversation	Factor Loading	% of variance
RKV 6 Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items	.59	
DMV 14 Ask other people, such as members of one's family, native speakers of English, to discover the meaning of new vocabulary items	.48	
EKV 7 Converse with foreigners in English through the internet to expand the knowledge of vocabulary	.45	
Factor 3: Strategies for Vocabulary Learning through Productive Skill		
EKV 17 Make a word-network of vocabulary associated with a particular item to expand the knowledge of vocabulary	.71	
EKV 19 Take an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary	.55	
RKV 21 Use semantic maps to retain the knowledge of newly-learned vocabulary items	.55	
RKV 14 Group vocabulary items according to the similarity of meaning, pronunciation, and spelling, to retain the knowledge of newly-learned vocabulary items	.52	4.56
EKV 16 Do extra English exercises from other sources, such as texts, newspaper, internets, to expand the knowledge of vocabulary	.49	
RKV 13 Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items	.48	
RKV 12 Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom to retain the knowledge of newly-learned vocabulary items	.41	
Factor 4: Strategies for Vocabulary Practice and Improvement		
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	.62	
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	.62	
RKV 11 Make a vocabulary list with meanings and examples in one's note book to retain the knowledge of newly-learned vocabulary items	.52	
RKV 10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items	.43	3.88
EKV 1 Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary	.41	
RKV 16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items	.38	
Factor 5: Strategies for Vocabulary Retention through Verbal Rehearsal		
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	.66	
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	.60	
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	.57	3.37
RKV 1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items	.55	

Table 7.15 (Cont.)   List of the eight extracted factors

Factor 6: Strategies for Meaning Discovery through Guessing	Factor Loading	% of variance
DMV 4 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items	.69	
DMV 3 Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items	.67	
DMV 5 Guess the meaning by analysing the structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items	.67	2.80
DMV 6 Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items	.65	
DMV 2 Guess the meaning from context to discover the meaning of new vocabulary items	.55	
DMV 7 Guess the meaning from real situations to discover the meaning of new vocabulary items	.53	
Factor 7: Strategies for Vocabulary Learning through the Use of Dictionary		
DMV 11 Use a Thai-English dictionary to discover the meaning of new vocabulary items	.77	
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	.71	
DMV 9 Use an English-English dictionary to discover the meaning of new vocabulary items	.55	2.75
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	.50	
DMV 12 Ask classmates or friends to discover the meaning of new vocabulary items	.43	
Factor 8: Vocabulary Learning through Other Sources' Reliance		
RKV 18 Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items	.54	
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	.53	
RKV 17 Associate pictures with vocabulary items to retain the knowledge of newly-learned vocabulary items	.53	2.37
RKV 20 Connect newly-learned vocabulary items to one's previous learning experience to retain the knowledge of newly-learned vocabulary items	.44	
RKV 19 Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items	.44	

As seen in Table 7.15, the results of the factor analysis, i.e. the varimax rotation method, reveal the eight extracted factors which include:

- Factor 1, which is renamed as 'Strategies for Self-Directed Vocabulary Learning Through English-Language Media Utilisation' accounted for 25.55 per cent of the variance among the VLSs in the VLSQ for the present investigation. There are eleven

strategies, including 1 RKV, and 10 EKV strategies under this factor that research subjects under the present investigation reported employing mainly when they learn vocabulary outside class. These strategies concern vocabulary learning through the use of English-language media, such as listen to English on radio programmes, watch English programmes on TV, watch English-speaking films, search for English information through different computer programmes, or study printed materials in English.

- Factor 2, 'Strategies for Vocabulary Expansion through Conversation' accounted for 4.75 per cent of the whole strategy variance. A closer look at Factor 2 reveals eight strategies: 1 DMV, 3 RKV, and 4 EKV strategies which were reported being employed by the research subjects both for classroom-related and classroom-independent learning. These strategies mainly involve vocabulary expansion through conversations.

- Factor 3, 'Strategies for Vocabulary Learning through the Productive Skill', accounted for 4.56 per cent of the variance of the strategy items. Factor 3 comprises seven strategies: 4 RKV and 3 EKV strategies, which were reported employing for vocabulary learning through the productive skill. Examples are grouping vocabulary items according to the similarity of meaning, pronunciation, and spelling, and doing extra English exercises from other sources, such as texts, newspaper, internets making a word-network. The strategies under factor 3 mainly involve students' self-directed for out-of-class learning.

- Factor 4, 'Strategies for Vocabulary Practice and Improvement', accounted for 3.88 per cent of the variance of the strategy items. This factor comprises six strategies, including 5 RKV and 1 EKV strategies which the research subjects

reported employing in order to improve and practise their vocabulary knowledge for both their classroom-related and classroom-independent learning.

- Factor 5, 'Strategies for Vocabulary Retention through Verbal Rehearsal', accounted for 3.37 per cent of the variance of the strategy items. There are four RKV strategies under this factor that research subjects reported employing through verbal rehearsal particularly for the retention of the knowledge of newly-learned vocabulary items both in classroom-related and classroom-independent learning.

- Factor 6, 'Strategies for the Meaning Discovery through Guessing', accounted for 2.80 per cent of the variance of the strategy items. This factor comprises six DMV strategies reported employing by research subjects for discovering the meaning of new vocabulary items through guessing. These strategies were reported employing for their particular purposes both when being inside and outside class.

- Factor 7, 'Strategies for Vocabulary Learning through the Use of Dictionary', accounted for 2.75 per cent of the variance of the strategy items. All five strategies under this factor include 4 DMV and 1 EKV strategies which involve the use of a dictionary, either a monolingual or a bilingual dictionary, for their vocabulary learning. The use of dictionary for vocabulary learning was reported employing by research subjects both for classroom-related and classroom-independent learning.

- Factor 8, 'Vocabulary Learning through other Sources Reliance', accounted for 2.37 per cent of the variance of the strategy items. Five strategies under Factor 8, including 1 DMV and 4 RKV strategies, were reported being employed by the research subjects through other sources reliance for their vocabulary learning, such as asking classmates, friends, teachers of English, native speakers of English as well as guessing the meaning from gestures. Besides, associating pictures and real objects

with vocabulary items was another strategy the research subjects reported employing for the retention of the knowledge of newly-learned vocabulary items.

As we have seen above, the underlying factors of the vocabulary learning strategies, the factor loading for each strategy item, and the percentage of variance of each factor, have been identified. The next step is to explore which of these factors are strongly related to each of the five variables in the present investigation.

Determining such a relationship depends on factors found to be strongly related to a particular variable. For the purpose of the discussions of the factor analysis results in the following section, the criteria for strong relation between the factors and each of the variables recommended by Seliger and Shohamy (1989, p. 229) are adopted. That is, a factor is accepted to be strongly related to a variable if half or more of the vocabulary learning strategies under that factor have a loading of .50, or above, showing a significant variation in relation to that variable. In the present investigation, the results of the varimax rotation demonstrate that three extracted factors were found to be strongly related to gender of students, seven to major field of study, three to previous language learning experience, and five to level of vocabulary proficiency. No factors were found to be strongly related to type of academic programme of study. What follow are factors strongly related to each of the variables.

7.5.1 Factors with Strong Relation to 'Gender of Students'

The results from the analysis of variance (ANOVA) as presented in the previous sections demonstrate significant variations in frequency of the DMV, and EKV strategy use in relation to gender of students. This is consistent with the results of the factor analysis in terms of variations in students' reported use of strategies in order to discover the meaning of new vocabulary items and to expand the knowledge

of vocabulary both for classroom-related and classroom-independent learning. Table

7.16 below demonstrates the three factors found to be strongly related to this variable.

Table 7.16   Factors with strong relation to 'gender of students'

Factor 4: Strategies for Vocabulary Practice and Improvement	Factor Loading	Comment
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	.62	F>M
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	.62	F>M
RKV 11 Make a vocabulary list with meanings and examples in one's note book to retain the knowledge of newly-learned vocabulary items	.52	F>M
RKV 10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items	.43	N.S.
EKV 1 Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary	.41	F>M
RKV 16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items	.38	F>M
Factor 5: Strategies for Vocabulary Retention through Verbal Rehearsal		
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	.66	F>M
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	.60	F>M
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	.57	F>M
RKV 1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items	.55	N.S.
Factor 7: Strategies for Vocabulary Learning through the Use of Dictionary		
DMV 11 Use a Thai-English dictionary to discover the meaning of new vocabulary items	.77	F>M
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	.71	F>M
DMV 9 Use an English-English dictionary to discover the meaning of new vocabulary items	.55	F>M
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	.50	F>M
DMV 12 Ask classmates or friends to discover the meaning of new vocabulary items	.43	F>M

Notes: F>M means female students reported employing that particular strategy significantly more frequently than did male students.

7.5.2 Factors with Strong Relation to 'Major Field of Study'

Seven factors, Factors 2-8, were found to be strongly related to students' major fields of study. The results of the factor analysis show significant variations in students' reported use of strategies mainly to retain the knowledge of newly-learned vocabulary items and to expand their knowledge of vocabulary both for classroom-related and classroom-independent settings in relation to major field of study. Table 7.17 below demonstrates the seven factors strongly related to this variable.

Table 7.17 Factors with strong relation to 'major field of study'

Factor 2: Strategies for Vocabulary Expansion through Conversation	Factor Loading	Comment
RKV 7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items	.74	E>NSci>Sci
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	.69	E>NSci>Sci
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	.63	E>NSci>Sci
EKV 4 Converse with classmates and friends in English to expand the knowledge of vocabulary	.62	E>NSci>Sci
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English to retain the knowledge of newly-learned vocabulary items	.60	E>NSci>Sci
RKV 6 Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items	.59	E>Sci>NSci
DMV 14 Ask other people, such as members of one's family, native speakers of English, to discover the meaning of new vocabulary items	.48	E>NSci>Sci
EKV 7 Converse with foreigners in English through the internet to expand the knowledge of vocabulary	.45	E>Sci>NSci

Notes: **E>Sci>NSci** means English major students reported employing that particular strategy significantly more frequently than did science-oriented or non science-oriented students, and science-oriented also reported employing that particular strategy significantly more frequently than did non science-oriented students.

Table 7.17 (Cont.)   Factors with strong relation to 'major field of study'

Factor 3: Strategies for Vocabulary Learning through the Productive Skill	Factor Loading	Comment
EKV 17 Make a word-network of vocabulary associated with a particular item to expand the knowledge of vocabulary	.71	E>Sci>NSci
EKV 19 Take an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary	.55	E>NSci>Sci
RKV 21 Use semantic maps to retain the knowledge of newly-learned vocabulary items	.55	E>NSci>Sci
RKV 14 Group vocabulary items according to the similarity of meaning, pronunciation, and spelling, to retain the knowledge of newly-learned vocabulary items	.52	E>Sci>NSci
EKV 16 Do extra English exercises from other sources, such as texts, newspaper, internets, to expand the knowledge of vocabulary	.49	E>Sci>NSci
RKV 13 Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items	.48	E>NSci>Sci
RKV 12 Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom to retain the knowledge of newly-learned vocabulary items	.41	E>Sci>NSci

Factor 4: Strategies for Vocabulary Practice and Improvement		
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	.62	E>NSci>Sci
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	.62	E>NSci>Sci
RKV 11 Make a vocabulary list with meanings and examples in one's note book to retain the knowledge of newly-learned vocabulary items	.52	E>NSci>Sci
RKV 10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items	.43	E>NSci>Sci
EKV 1 Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary	.41	E>NSci>Sci
RKV 16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items	.38	E>NSci>Sci

Factor 5: Strategies for Vocabulary Retention through Verbal Rehearsal		
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	.66	E>Sci>NSci
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	.60	E>Sci>NSci
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	.57	E>Sci>NSci
RKV 1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items	.55	E>Sci>NSci

Notes: E>Sci>NSci means English major students reported employing that particular strategy significantly more frequently than did science-oriented or non science-oriented students, and science-oriented also reported employing that particular strategy significantly more frequently than did non science-oriented students.

Table 7.17 (Cont.) Factors with strong relation to 'major field of study'

Factor 6: Strategies for the Meaning Discovery through Guessing	Factor Loading	Comment
DMV 4 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items	.69	E>Sci>NSci
DMV 3 Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items	.67	E>Sci>NSci
DMV 5 Guess the meaning by analysing the structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items	.67	E>Sci>NSci
DMV 6 Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items	.65	E>Sci>NSci
DMV 2 Guess the meaning from context to discover the meaning of new vocabulary items	.55	E>Sci>NSci
DMV 7 Guess the meaning from real situations to discover the meaning of new vocabulary items	.53	E>Sci>NSci
Factor 7: Strategies for Vocabulary Learning through the Use of Dictionary		
DMV 11 Use a Thai-English dictionary to discover the meaning of new vocabulary items	.77	N.S.
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	.71	E>NSci>Sci
DMV 9 Use an English-English dictionary to discover the meaning of new vocabulary items	.55	E>NSci>Sci
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	.50	E>NSci>Sci
DMV 12 Ask classmates or friends to discover the meaning of new vocabulary items	.43	N.S.
Factor 8: Vocabulary Learning through Other Sources Reliance		
RKV 18 Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items	.54	E>Sci>NSci
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	.53	E>Sci>NSci
RKV 17 Associate pictures with vocabulary items to retain the knowledge of newly-learned vocabulary items	.53	N.S.
RKV 20 Connect newly-learned vocabulary items to one's previous personal experience, or previous learning, to retain the knowledge of newly-learned vocabulary items	.44	E>Sci>NSci
RKV 19 Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items	.44	E>Sci>NSci

Notes: **E>Sci>NSci** means English major students reported employing that particular strategy significantly more frequently than did science-oriented or non science-oriented students, and science-oriented also reported employing that particular strategy significantly more frequently than did non science-oriented students.

7.5.3 Factors with Strong Relation to 'Previous Language Learning Experience'

Table 7.18 shows the three factors found to be strongly related to students' previous language learning experience, including Factors 2, 5 and 7. The results of the factor analysis show significant variations in students' reported employing the strategies in order to deal with vocabulary learning both for classroom-related and classroom-independent settings in relation to major field of study. Table 7.18 below demonstrates the three factors found to be strongly related to this variable.

Table 7.18 Factors with strong relation to 'previous language learning experience'

Factor 2: Strategies for Vocabulary Expansion through Conversation	Factor Loading	Comment
RKV 7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items	.74	N.S.
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	.69	Mo>Le
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	.63	N.S.
EKV 4 Converse with classmates and friends in English to expand the knowledge of vocabulary	.62	Mo>Le
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English to retain the knowledge of newly-learned vocabulary items	.60	Mo>Le
RKV 6 Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items	.59	Mo>Le
DMV 14 Ask other people, such as members of one's family, native speakers of English, to discover the meaning of new vocabulary items	.48	Mo>Le
EKV 7 Converse with foreigners in English through the internet to expand the knowledge of vocabulary	.45	N.S.
Factor 5: Strategies for Vocabulary Retention through Verbal Rehearsal		
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	.66	Mo>Le
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	.60	N.S.
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	.57	Mo>Le
RKV 1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items	.55	Mo>Le

Note: Mo>Le means students with more previous language learning experience reported employing that particular strategy significantly more frequently than did those with less previous language learning experience.

Table 7.18 (Cont.) Factors with strong relation to 'previous language learning experience'

Factor 7: Strategies for Vocabulary Learning through the Use of Dictionary		
DMV 11 Use a Thai-English dictionary to discover the meaning of new vocabulary items	.77	Mo>Le
DMV 10 Use an English-Thai dictionary to discover the meaning of new vocabulary items	.71	Mo>Le
DMV 9 Use an English-English dictionary to discover the meaning of new vocabulary items	.55	Mo>Le
EKV 14 Practise using a dictionary regularly to expand the knowledge of vocabulary	.50	Mo>Le
DMV 12 Ask classmates or friends to discover the meaning of new vocabulary items	.43	N.S.

Note: Mo>Le means students with more previous language learning experience reported employing that particular strategy significantly more frequently than did those with less previous language learning experience.

7.5.4 Factors with Strong Relation to 'Level of Vocabulary Proficiency'

Five factors, including Factors 2, 4, 5, 6, and 8, were found to be strongly related to students' vocabulary proficiency levels. The results of the factor analysis show significant variations in students' reported employing the strategies in order to deal with vocabulary learning both for classroom-related and classroom-independent settings in relation to students' level of vocabulary proficiency. Table 7.19 below shows the five factors found to be strongly related to this variable:

Table 7.19 Factors strongly related to 'level of vocabulary proficiency'

Factor 2: Strategies for Vocabulary Expansion through Conversation	Factor Loading	Comment
RKV 7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items	.74	Hi>Me>Lo
EKV 6 Converse with foreigners in English to expand the knowledge of vocabulary	.69	Hi>Me>Lo
EKV 5 Converse with teachers of English in English to expand the knowledge of vocabulary	.63	Hi>Me>Lo
EKV 4 Converse with classmates and friends in English to expand the knowledge of vocabulary	.62	Hi>Me>Lo
RKV 5 Listen to an English conversation of other people, such as classmates, friends, teachers, natives of English to retain the knowledge of newly-learned vocabulary items	.60	Hi>Me>Lo
RKV 6 Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items	.59	Hi>Me>Lo
DMV 14 Ask other people, such as members of one's family, native speakers of English, to discover the meaning of new vocabulary items	.48	Hi>Me>Lo
EKV 7 Converse with foreigners in English through the internet to expand the knowledge of vocabulary	.45	Hi>Me>Lo

Factor 4: Strategies for Vocabulary Practice and Improvement		
RKV 15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items	.62	Hi>Me>Lo
RKV 9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items	.62	Hi>Me>Lo
RKV 11 Make a vocabulary list with meanings and examples in one's note book to retain the knowledge of newly-learned vocabulary items	.52	Hi>Me>Lo
RKV 10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items	.43	Hi>Me>Lo
EKV 1 Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary	.41	Hi>Me>Lo
RKV 16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items	.38	Hi>Me>Lo

Factor 5: Strategies for Vocabulary Retention through Verbal Rehearsal		
RKV 3 Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items	.66	N.S.
RKV 4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items	.60	N.S.
RKV 2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items	.57	Hi>Me>Lo
RKV 1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items	.55	Hi>Me>Lo

Notes: Hi>Me>Lo means students with high level of vocabulary proficiency reported employing that particular strategy significantly more frequently than did those with medium- and low level of proficiency. Students with medium level of vocabulary proficiency also reported employing that particular strategy significantly more frequently than did those with low level of proficiency.

Table 7.19 Factors strongly related to 'level of vocabulary proficiency'

Factor 6: Strategies for the Meaning Discovery through Guessing		
DMV 4 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items	.69	Hi>Me>Lo
DMV 3 Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items	.67	Hi>Me>Lo
DMV 5 Guess the meaning by analysing the structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items	.67	Hi>Me>Lo
DMV 6 Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items	.65	Hi>Me>Lo
DMV 2 Guess the meaning from context to discover the meaning of new vocabulary items	.55	Hi>Me>Lo
DMV 7 Guess the meaning from real situations to discover the meaning of new vocabulary items	.53	Hi>Me>Lo

Factor 8: Vocabulary Learning through Other Sources Reliance	**Factor Loading**	**Comment**
RKV 18 Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items	.54	Hi>Me>Lo
DMV 8 Guess the meaning from gestures to discover the meaning of new vocabulary items	.53	Hi>Me>Lo
RKV 17 Associate pictures with vocabulary items to retain the knowledge of newly-learned vocabulary items	.53	N.S.
RKV 20 Connect newly-learned vocabulary items to one's previous learning experience to retain the knowledge of newly-learned vocabulary items	.44	Hi>Me>Lo
RKV 19 Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items	.44	Hi>Me>Lo

Notes: Hi>Me>Lo means students with high level of vocabulary proficiency reported employing that particular strategy significantly more frequently than did those with medium- and low level of proficiency. Students with medium level of vocabulary proficiency also reported employing that particular strategy significantly more frequently than did those with low level of proficiency.

In summary, eight factors were extracted as the result of a factor analysis. Factors 4, 5, and 7 were found to be strongly related to students' gender. Factors 2-8 were found to be strongly related to major field of study. Factors 2, 5 and 7 were found to be strongly related to previous language learning experience. Factors 2, 4, 5, 6, and 8 were found strongly related to levels of vocabulary proficiency. No factors were found to be strongly related to type of academic programme of study. Table 7.20 below summarises the strong relationship between the factors and the variables for the present investigation.

Table 7.20 Summary of factors with strong relation to different variables

Extracted Factor	Gender	Major Field of Study	Previous Language Learning Experience	Type of Academic Programme of Study	Levels of Vocabulary Proficiency
1: Using media	no	no	no	no	no
2: Vocabulary expansion	no	YES	YES	no	YES
3: Productive skill	no	YES	no	no	no
4: Vocabulary practice	YES	YES	no	no	YES
5: Vocabulary Retention	YES	YES	YES	no	YES
6: The meaning discovery	no	YES	no	no	YES
7: Using dictionary	YES	YES	YES	no	no
8: Others sources Reliance	no	YES	no	no	YES

Note: YES means 'significant', and no 'not significant'.

7.6 Summary

Chapter 7 has concentrated on the data analysis for vocabulary learning strategy use with the significant variation. The researcher has devoted her great attempt to examining systematically the variations in frequency of students' overall reported vocabulary learning strategy use, the three main categories, and individual strategy use in relation to the five independent variables, which are gender, major field of study, previous language learning experience, type of programme of study and level of vocabulary proficiency. The data were collected through the vocabulary learning strategy questionnaire with a total of 54 individual vocabulary learning strategies. The analysis of variance (ANOVA), the chi-square (χ^2) tests, and factor analysis were the main statistical methods of data analysis for the present investigation.

The research findings and discussions presented in this chapter have revealed and implied a number of points which are listed below. Moreover, each focal point of

discussion will shed some light for the reader on a better understanding about vocabulary learning strategies in a new perspective along with the relationship between vocabulary strategy use at different levels and the focussed factors for the present investigation. What follows is a summary of each focal point of the Chapter:

1) Based on the findings of the analysis of variance (ANOVA), significant variations in frequency of students' reported strategy use as a whole were found in relation to all five independent variables:

1.1 Regarding the student's gender, female students reported more frequent overall use of vocabulary learning strategies than did their male counterparts.

1.2 In terms of major field of study, English major students reported more frequent overall use of vocabulary learning strategies than did those of both science- and non science-oriented major students. Significant variations in frequency of strategy use were also found in science- and non science-oriented majors, with the former reporting more frequent use of vocabulary learning strategies than the latter, and vice versa.

1.3 In respect of previous language learning experience, students with more previous language learning experience reported more frequent overall use of vocabulary learning strategies than did those with less language learning experience.

1.4 In terms of type of academic programme of study, students studying in regular programme reported more frequent overall use of vocabulary learning strategies than did those studying in part-time programme.

1.5 In respect of the student's level of vocabulary proficiency, high-vocabulary proficiency students reported employing vocabulary learning strategies more frequently than did those with both medium and low vocabulary proficiency.

Furthers, significant variations in frequency of strategy use were found in medium- and low-vocabulary proficiency students as well, with the former reporting more frequent use of vocabulary learning strategies than the latter.

2) Based on the findings of the analysis of variance (ANOVA) in the three main categories, significant variations in frequency of students' reported use of the DMV strategies were found in relation to four variables, including the student's gender, major field of study, previous language learning experience and level of vocabulary proficiency, while significant variations in frequency of students' reported use of the EKV strategies were found in relation to all five independent variables. However, no significant variations in frequency of students' reported use of the RKV strategies were found in relation to all five independent variables.

3) Based on the results of the chi-square (χ^2) tests, significant variations in students' use of individual vocabulary learning strategies were found in relation to all five independent variables:

3.1 Female students reported more frequent use of individual vocabulary learning strategies than did their male counterparts.

3.2 English major students reported more frequent use of individual vocabulary learning strategies than did both science- and non science-oriented students.

3.3 Students with more previous language learning experience reported more frequent use of individual vocabulary learning strategies than did those with less previous language learning experience.

3.4 Regular students reported more frequent use of individual vocabulary learning strategies than did the part-time students.

3.5 High-vocabulary proficiency students reported more frequent use of individual vocabulary learning strategies than did both medium- and low-vocabulary proficiency students.

4) Based on the results of the factor analysis, eight factors (Factors 1-8) were extracted. They provide parallel evidence to the findings obtained through the different levels of an analysis of variance. The results of factor analysis reveal that four independent variables show great relationship to students' use of vocabulary learning strategies:

4.1 Almost all strategies in Factors 4 and 5, and all strategies in Factor 7 were found to be strongly related to students' gender.

4.2 All strategies in Factors 2-6, and more than half of the strategies in Factors 7 and 8 were found to be strongly related to major field of study.

4.3 More than half of the strategies in Factors 2, 5 and 7 were found to be strongly related to students' previous language learning experience.

4.4 All strategies in Factors 2, 4, and 6, half of the strategies in Factor 5, and almost all strategies in Factor 8 were found to be strongly related to students' level of vocabulary proficiency.

As presented, the research findings for the present investigation have provided the researcher with useful information and shed light on another perspective of research in the area of vocabulary learning strategies. Chapter 8, the last chapter of the thesis, summarises the research findings in response to the research questions posed in Chapter 3, followed by the discussions, implications, contributions, limitations and conclusions of the present investigation.

CHAPTER 8

SUMMARY OF RESEARCH FINDINGS, DISCUSSIONS AND CONCLUSIONS

8.1 Introduction and Purpose of the Chapter

The previous chapter involved data analysis employing different statistical methods. This chapter concentrates on the principal findings of the present investigation. The heart of this chapter is to present the findings of the present investigation in response to research questions 1-8 proposed earlier in Chapter 3, Section 3.6. The chapter, then, will focus on a discussion of the results, the implications arising from the research for the teaching and learning of English for Rajabhat University students, followed by the contributions of the present investigation to related areas. Finally, the limitations of the present investigation and proposals for future research are presented.

In Chapters 6 and 7, the researcher, with a great attempt, has systematically identified types of vocabulary learning strategies and frequency of use of the vocabulary learning strategies reported by 1,481 undergraduate students studying English at Rajabhat Universities through a vocabulary learning strategy questionnaire. Chapter 7 is devoted to examining significant variations in strategy use, especially students' reported frequency of vocabulary learning strategy use in relation to different independent variables, namely gender of the students, major field of study, previous language learning experience, type of academic

programme of study and level of vocabulary proficiency. Significant findings in students' frequency of vocabulary learning strategy use are obtained through the strategy questionnaire. Apart from patterns of significant variations in strategy use alongside other apparent significant differences in relation to each variable, the researcher will also suggest reasons for a better understanding of those certain patterns to the reader. This can be seen in the subsequent discussion in Section 8.3.

8.2 Summary of the Research Findings

The present investigation has reported on the research findings of students' reported vocabulary learning strategy use, and these findings give responses to the research questions for the present investigation. To illustrate, the findings are discussed as follows:

8.2.1 Research Question 1: What types of vocabulary learning strategies are reported to be employed by Rajabhat University students?

In response to Research Question 1, the research findings reveal that a total 54 vocabulary learning strategies were reported by undergraduate Rajabhat University students, and were primarily classified according to their particular vocabulary learning purposes. As a result, vocabulary learning purposes of strategy use emerged and these purposes were further grouped into three main categories. These include Category 1: the discovery of meaning of new vocabulary items, and is referred to as DMV, comprising 14 individual strategies; Category 2: the retention of the knowledge of newly-learned vocabulary items, referred to as RKV, comprising 21 individual strategies; and Category 3: the expansion of one's knowledge of vocabulary, referred to as EKV, comprising 19 individual strategies. The first two categories are mainly

for classroom-related vocabulary learning, while the third one involves self-directed or classroom-independent vocabulary learning. As we shall see below is type of vocabulary learning strategies students reported employing for their vocabulary learning purposes:

Category 1: Vocabulary Learning Strategies to Discover the Meaning of New Vocabulary Items (DMV)

DMV 1: Guess the meaning from a single vocabulary item to discover the meaning of

DMV 2: Guess the meaning from context to discover the meaning of new vocabulary items new vocabulary items

DMV 3: Guess the meaning from word classes, such as noun, verb, adjective, adverb, to discover the meaning of new vocabulary items

DMV 4: Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items

DMV 5: Guess the meaning by analysing a structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items

DMV 6: Guess the meaning from aural features, such as stress, pronunciation, to discover the meaning of new vocabulary items

DMV 7: Guess the meaning from real situations to discover the meaning of new vocabulary items

DMV 8: Guess the meaning from gestures to discover the meaning of new vocabulary items

DMV 9: Use an English-English dictionary to discover the meaning of new vocabulary items

DMV 10: Use an English-Thai dictionary to discover the meaning of new vocabulary items

DMV 11: Use a Thai-English dictionary to discover the meaning of new vocabulary items

DMV 12: Ask classmate s and friends to discover the meaning of new vocabulary items

DMV 13: Ask teachers of English to discover the meaning of new vocabulary items

DMV 14: Ask other people, such as members of one's family or native speakers of English, to discover the meaning of new vocabulary items

Category 2: Vocabulary Learning Strategies to Retain the Knowledge of Newly-Learned Vocabulary Items (RKV)

RKV 1: Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 2: Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 3: Say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 4: Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items

RKV 5: Listen to an English conversation of other people, such as classmates/ friends, teachers, native speakers of English, to retain the knowledge of newly-learned vocabulary items

RKV 6: Use vocabulary items to converse with classmates or friends to retain the knowledge of newly-learned vocabulary items

RKV 7: Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items

RKV 8: Sing English songs to retain the knowledge of newly-learned vocabulary items

RKV 9: Review previous English lessons to retain the knowledge of newly-learned vocabulary items

RKV 10: Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items

RKV 11: Make a vocabulary list with meanings and examples used in one's note book to retain the knowledge of newly-learned vocabulary items

RKV 12: Write vocabulary items with meanings on papers and stick them on the wall in one's bedroom to retain the knowledge of newly-learned vocabulary items

RKV 13: Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items

RKV 14: Group vocabulary items according to the similarity of meaning, pronunciation, and spelling to retain the knowledge of newly-learned vocabulary items

RKV 15: Do English exercises after class to retain the knowledge of newly-learned vocabulary items

RKV 16: Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items

RKV 17: Associate pictures with vocabulary items to retain the knowledge of newly-learned vocabulary items

RKV 18: Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items

RKV 19: Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items

RKV 20: Connect newly-learned vocabulary items to one's previous learning experience to retain the knowledge of newly-learned vocabulary items

RKV 21: Use semantic maps to retain the knowledge of newly-learned vocabulary items

Category 3: Vocabulary Learning Strategies to Expand the Knowledge of Vocabulary (EKV)

EKV 1: Practise listening to English lectures, presentation, or cassettes of English conversation to expand the knowledge of vocabulary

EKV 2: Listen to English songs to expand the knowledge of vocabulary

EKV 3: Listen to English radio programmes to expand the knowledge of vocabulary

EKV 4: Converse with classmates and friends in English to expand the knowledge of vocabulary

EKV 5: Converse with teachers of English in English to expand the knowledge of vocabulary

EKV 6: Converse with foreigners in English to expand the knowledge of vocabulary

EKV 7: Converse with foreigners in English through the internet to expand the knowledge of vocabulary

EKV 8: Read English articles from different sources, such as texts, newspapers, brochures, leaflets, etc. to expand the knowledge of vocabulary

EKV 9: Read a book of English-Thai conversation in various situations to expand the knowledge of vocabulary

EKV 10: Study vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary

EKV 11: Watch English programme channels on TV to expand the knowledge of vocabulary

EKV 12: Watch an English-speaking film with subtitles to expand the knowledge of vocabulary

EKV 13: Search for English information through the internet to expand the knowledge of vocabulary

EKV 14: Practise using a dictionary regularly to expand the knowledge of vocabulary

EKV 15: Practise translating sentences from English to Thai, or from Thai to English to expand the knowledge of vocabulary

EKV 16: Do extra English exercises from other sources, such as texts, newspapers, Internets, to expand the knowledge of vocabulary

EKV 17: Make a word-network of vocabulary associated with a particular item to expand the knowledge of vocabulary

EKV 18: Play English games, such as scrabble, crossword puzzles, to expand the knowledge of vocabulary

EKV 19: Take an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary

8.2.2 Research Question 2: How frequently are these different vocabulary learning strategies reported to be employed by these students?

In response to Research Question 2, the research findings reveal that the students' reported vocabulary learning strategy use as a whole, based on the holistic mean score, is of medium frequency of strategy use according to the measure described previously in Chapter 6, Sub-Section 6.2.1. The mean frequency score was 2.30. A similar frequency of use of these vocabulary learning strategies can be seen in the three main categories as well, with the mean frequency scores for the DMV, RKV, and EKV categories of 2.61, 2.19 and 2.21 respectively.

Frequency of VLS use at the individual strategy level was found that students reported high frequency use of the only individual DMV strategy which is DMV 10: 'use an English- Thai dictionary', with the mean frequency score of 3.21. For the DMV strategies, students reported medium frequency of use of 12 individual strategies, and low frequency of use of one individual strategy. The only one individual strategy reported employing at low frequency level of use was DMV 14: 'ask other people for the meaning of vocabulary items', with the mean frequency score of 1.93.

Based on the findings at the individual strategy level for the RKV category, students reported medium frequency of use of 15 individual strategies and low frequency of use of 5 individual strategies. The five individual strategies which were

found to report employing less frequently than any other strategies are RKV 7: 'use vocabulary items to converse with teachers of English'; RKV 13: 'group vocabulary items according to the synonyms and antonyms'; RKV 12: 'write vocabulary items with meanings on papers and stick them on the wall in one's bedroom'; RKV 14: 'group vocabulary items according to the similarity of meaning, pronunciation, and spelling'; and RKV 21: 'use semantic maps', with the mean frequency scores of 1.99, 1.91, 1.87, 1.78 and 1.75 respectively.

In respect of the EKV category, students reported high frequency use of only one individual strategy which is EKV 14: 'practise using a dictionary regularly'. The reported mean frequency score was 3.00. Besides, students reported medium frequency of use of 14 individual strategies and low frequency of use of 4 individual strategies. The four individual strategies which were reported being employed less frequently than any other strategy are EKV 6: 'converse with foreigners in English'; EKV 17: 'make a word-network of vocabulary associated with a particular item'; EKV 7: 'converse with foreigners in English through the internet'; and EKV 19: 'take an extra job at tour offices, hotels, etc.'. The mean frequency scores of the four strategies mentioned were 1.85, 1.61, 1.56 and 1.37 respectively.

8.2.3 Research Question 3: Do students' choices of vocabulary learning strategies vary significantly with their gender? If so, what are the main patterns of variation?

In response to Research Question 3, a great effort has been devoted to examine the variation in vocabulary learning strategy use alongside the patterns of variation. The data obtained through the strategy questionnaire responded to by 1,481 Rajabhat University students, the results at the three levels of data analysis as well as

those of a factor analysis in relation to gender of the students are summarised as follows.

- **Overall Strategy Use**

Based on the results of the analysis of variance (ANOVA), the findings reveal significant variations in students' reported strategy use as a whole in relation to gender of the students. The significant variations show that female students generally reported more frequent overall strategy use than did their male counterparts.

- **Use of Strategies in the DMV, RKV, and EKV Categories**

The results of ANOVA reveal that significant variations in students' reported strategy use both in the DMV and EKV categories were found in association with gender of the students with female students reporting more frequent use of the strategies to discover the meaning of new vocabulary items, and those to expand their knowledge of vocabulary, than did their male counterparts. However, no significant variations in use of the strategies to retain the knowledge of newly-learned vocabulary items, were found between female and male students.

- **Use of Individual Vocabulary Learning Strategies**

The results of the chi-square (χ^2) tests show that the use of 27 out of 54 individual vocabulary learning strategies (50%) varied significantly according to gender of the students, with female students reporting more frequent use of 25 strategies than their male counterparts, such as 'review previous English lessons', 'play games in English', 'read a book of English-Thai conversation with various situations', or 'read English articles from different sources'. However, male students reported greater use of two strategies than did their female counterparts, including

'guess the meaning from grammatical structure of a sentence' and 'say vocabulary items in sentences repeatedly' for vocabulary learning purposes.

- **Factor Analysis Results**

The results of the factor analysis reveal that strategies found to be strongly related to students' gender included Factor 4: 'Strategies for vocabulary practice and improvement', Factor 5: 'Strategies for vocabulary retention through verbal rehearsal', and Factor 7: 'Strategies for vocabulary learning through the use of dictionary'. The main underlying relationship between students' reported strategy use and gender is in the use of strategies mainly to retain the knowledge of newly-learned vocabulary items and to discover the meaning of new vocabulary items.

8.2.4 Research Question 4: Do students' choices of vocabulary learning strategies vary significantly with their major field of study? If so, what are the main patterns of variation?

In response to Research Question 4, the results of ANOVA show significant variations in relation to the major field of study of students in reporting overall strategy use, use of strategies in the three main categories, and use of individual vocabulary learning strategies for vocabulary learning purposes. The results at the three levels of data analysis as well as those of a factor analysis in relation to the student's major field of study are summarised as follows:

- **Overall Strategy Use**

Based on the results of the analysis of variance (ANOVA), the findings reveal that significant variations in students' reported strategy use as a whole were found in relation to major field of study. The significant variations show that English major

students reported more frequent overall strategy use than those of both science- and non science-oriented majors did.

- **Use of Strategies in the DMV, RKV, and EKV Categories**

The results of ANOVA reveal that significant variations in students' reported strategy use both in the DMV and EKV categories were found in association with major field of study. The results of post-hoc Sheffe′ tests carried out after the ANOVA results reveal that English major students reported more frequent use of strategies in the DMV and EKV categories than did both science- and non science-oriented major students. However, no significant variations of strategy use in the RKV category in relation to major field of study were found among English, science- and non science-oriented major students.

- **Use of Individual Vocabulary Learning Strategies**

The results of the chi-square (χ^2) tests show that the use of 49 out of 54 individual vocabulary learning strategies (90.74%) varied significantly according to major field of study. The significant variations demonstrate that students' strategy use in order to deal with vocabulary learning were found in association with major field of study, with English major students reporting more frequent use of strategies to discover the meaning of new vocabulary items and to expand their knowledge of vocabulary than did both science- and non science-oriented major students. Likewise, science-oriented major students reported more frequent use of some individual strategies than did non science-oriented major students, and vice versa.

- **Factor Analysis Results**

The results of the factor analysis reveal that seven factors were found to be strongly related to major field of study. The significant variations appear that Factors

2-8 were found to be strongly associated with major field of study. The main underlying relationship between students' reported strategy use and major field of study is in the use of strategies in all of the three main categories.

8.2.5 Research Question 5: Do students' choices of vocabulary learning strategies vary significantly with their previous language learning experience? If so, what are the main patterns of variation?

In response to Research Question 5, the results of ANOVA show significant variations in students' overall strategy use, use of strategies in the three main categories, and use of individual vocabulary learning strategies in relation to previous language learning experience. The results at the three levels of data analysis as well as those of a factor analysis in relation to the student's previous language learning experience are summarised as follows:

- **Overall Strategy Use**

Based on the results of the analysis of variance (ANOVA), the findings reveal significant variations in students' reported strategy use as a whole in relation to their previous language learning experience. The significant variations demonstrate that students with 'more'- reported more frequent overall use of strategies than did those with 'less' previous language learning experience.

- **Use of Strategies in the DMV, RKV, and EKV Categories**

The results of ANOVA reveal that significant variations in students' reported strategy use both in the DMV and EKV categories were found in association with their previous language learning experience. The significant variations reveal that students with 'more' than 'less' previous language learning experience reported greater use of strategies in the DMV and EKV categories. However, no significant

variations of strategy use in the RKV category were found in relation to previous language experience between the two groups of the students.

- **Use of Individual Vocabulary Learning Strategies**

The results of the chi-square (χ^2) tests show that the use of 32 out of 54 individual vocabulary learning strategies (59.26%) varied significantly according to their previous language learning experience. The significant variations reveal that the former reported greater use in 32 strategies than did the latter, such as 'use an English-Thai dictionary', 'practise using a dictionary regularly', 'guess the meaning from context' and 'guess the meaning from gestures', 'listen to English songs', or 'study English vocabulary items from advertisements, etc.'.

- **Factor Analysis Results**

The results of a factor analysis reveal that three factors were found to be strongly related to the student's previous language learning experience. They were Factor 2: 'Strategies for self-directed vocabulary learning through English-language Utilisation', Factor 5: 'Strategies for vocabulary retention through verbal rehearsal', and Factor 7: 'Strategies for vocabulary learning through the use of dictionary'. The main underlying relationship between students' reported strategy use and previous language learning experience is in the use of strategies mainly in all three main categories.

8.2.6 Research Question 6: Do students' choices of vocabulary learning strategies vary significantly with their type of programme of study? If so, what are the main patterns of variation?

In response to Research Question 6, the results of ANOVA show significant variations in students' overall strategy use, use of strategies in the three main

categories, and use of individual vocabulary learning strategies in relation to type of academic programme of study. The results at the three levels of data analysis as well as those of a factor analysis in relation to the students' type of academic programme of study are summarised as follows:

- **Overall Strategy Use**

The results obtained through the analysis of variance (ANOVA) reveal that significant variations in students' reported strategy use as a whole according to type of academic programme of study were found, with 'regular' students reporting more frequent overall strategy use than did the 'part-time' students.

- **Use of Strategies in the DMV, RKV, and EKV Categories**

The results of the ANOVA reveal that significant variations in students' reported strategy use both in the DMV and EKV categories were found in association with their type of academic programme of study. The significant variations show that students studying in the regular programme reported more frequent use of strategies in the EKV category than did those studying in the part-time programme. However, no significant variations of strategy use in the DMV and RKV categories in relation to type of academic programme of study were found between the two groups of the students.

- **Use of Individual Vocabulary Learning Strategies**

The results of the chi-square (χ^2) tests show that the use of eleven out of 54 individual vocabulary learning strategies (59.26%) varied significantly according to type of academic programme of study. The significant variations reveal that the regular students reported more frequent use of nine strategies than did the part-time students, such as 'use an English-Thai dictionary', 'practise using a dictionary

regularly', 'practise listening to English lectures, presentations, or cassettes of English conversation', or 'listen to English songs'.

- **Factor Analysis Results**

The results of the factor analysis reveal that no factors were found to be strongly related to students' type of academic programme of study.

8.2.7 Research Question 7: Do students' choices of vocabulary learning strategies vary significantly with level of vocabulary proficiency? If so, what are the main patterns of variation?

In response to Research Question 7, all attempts have been devoted to examine the variation in vocabulary learning strategy use alongside the patterns of variation. This can be seen in Chapter 7. The data obtained through the strategy questionnaire responded to by 1,481 Rajabhat University students and the results at the three levels of data analysis as well as those of the factor analysis in relation to level of vocabulary proficiency are summarised as follows:

- **Overall Strategy Use**

Based on the results of the analysis of variance (ANOVA), the findings reveal significant variations in students' reported strategy use as a whole in relation to levels of vocabulary proficiency with 'high'-vocabulary proficiency level reported more frequent use of strategies than those with both 'medium'- and low-vocabulary proficiency levels did. The pattern of variations in students' overall reported strategy use also reveal that the medium- also reported more frequent use of strategies than did the low-vocabulary proficiency students.

- **Use of Strategies in the DMV, RKV, and EKV Categories**

The results of ANOVA reveal that significant variations in students' reported strategy use both in the DMV and EKV categories were found in association with major field of study. The results of post-hoc Sheffe′ tests carried out after ANOVA demonstrate that 'high' VP level students reported more frequent use of strategies in the DMV and EKV categories than both 'medium'- and 'low' VP level students did. Similarly, significant variations of strategy use in the DMV and EKV categories were found as well between 'medium' and 'low' VP level students, with the former reporting more frequent use of strategies than did the latter. However, no significant variations of strategy use in the RKV category in relation to levels of vocabulary proficiency were found among the three groups of the students.

- **Use of Individual Vocabulary Learning Strategies**

The results of the chi-square (χ^2) tests show the use of 41 out of 54 individual vocabulary learning strategies (75.93%)) which varied significantly according to levels of vocabulary proficiency. The significant variations show that 'high' VP level students reported greater use in 40 individual strategies than did both 'medium'- and 'low' vocabulary proficiency level students, such as 'use an English-Thai dictionary', 'guess the meaning from contexts', 'practise using a dictionary regularly', 'practise listening to English lectures, presentations, or cassettes of English conversation', 'listen to English songs', or 'study vocabulary from advertisements, etc.'. Likewise, 'medium' VP level students reported more frequent use of individual strategies, like the 'high' VP level students did, than did 'low' VP level students. Moreover, 'medium' VP level students still reported greater use in one individual strategy than

did both 'high' and 'low' VP level students – 'group vocabulary items according to the synonyms and antonyms'.

- **Factor Analysis Results**

The results of a factor analysis reveal that all five factors were found to be strongly related to levels of vocabulary proficiency. They were Factor 2: 'Strategies for vocabulary expansion through conversation', Factor 4: 'Strategies for vocabulary practice and improvement', Factor 5: 'Strategies for vocabulary retention through verbal rehearsal', Factor 6: 'Strategies for the meaning discovery through guessing', and Factor 8; 'Vocabulary learning through other source reliance'. The main underlying relationship between students' reported strategy use and levels of vocabulary proficiency is in the use of strategies all three categories.

8.3 Discussions of the Research Findings

This section aims to discuss the research findings in relation to the independent variables investigated. The discussion is presented in respect of the explanations which are possible for what has been discovered. The focal point for discussion concerns possible reasons hypothesised by the researcher to where significant differences in certain strategy use for each variable become apparent. It is important to indicate that it may not be easy to compare strategy use by students in the very detailed manner of the present investigation with previous research studies since the present investigation has a different method of classifying vocabulary learning strategies as well as a different way of employing the data analysis. The researcher has hypothesised at this stage what may be a possible explanation of significant differences in certain strategy use in relation to each of the five variables. Before

proceeding with a detailed discussion of vocabulary learning strategy use in relation to the five independent variables; however, it should be remarked that we are not certain that these hypotheses can be the definite explanation for what has been mentioned. What follow are further discussions of the findings in relation to the five variables.

8.3.1 Use of Vocabulary Learning Strategies and Gender of Students

The findings of the present investigation reveal that female students' overall strategy use, use of strategies in the DMV and EKV categories, and use of individual vocabulary learning strategies significantly higher than their male counterparts. On the other hand, male students reported only two individual strategies significantly more frequently than did their female counterparts: DMV 4: 'guess the meaning from grammatical structure of a sentence', and RKV 2: 'say vocabulary items in sentences repeatedly'.

There do appear to be some gender differences in language learning, acquisition and processing. For example, Oxford's (1995) study shows that besides brain hemisphericity, cognitive style and socialisation differences between the two genders, parts of the gender differences in language learning have been attributed to the differences in learning strategies. As shown in Nyikos (1990, p. 273), females attach great importance to expressing themselves verbally, while males appear to value facility with visual and spatial information. Likewise, the previous research studies in the field of language learning strategies revealed that female students reported employing certain strategies significantly more frequently than did their male counterparts, especially social/affective strategies (Ehrman and Oxford, 1989; 1990; Oxford and Nyikos, 1989), as well as more metacognitive strategies in listening tasks

(Saville-Troke, 2006). These scholars concluded that females use more social language learning strategies not only in interaction in the classroom but also in interaction in the real world. Green and Oxford (1995); Tercanlioglu (2004) also obtained a similar result as those previously mentioned. However, Intaraprasert's (2000) study, like the one carried out by Politzer (1983), revealed no strong relation between gender of students and their choices of strategy use. Intaraprasert (2000) further clarified that even though there was a minor significant difference in use of individual strategies between female and male students in his study, it is obvious that the former reported employing strategies significantly more frequently than did the latter.

When looking into the field of vocabulary learning strategies, as evidenced in the study by Stőffer (1995), her findings revealed that gender failed to make a significant difference in vocabulary learning strategy use, while Taichi's (2000); Gu's (2002); and Catalán's (2003) studies showed significant differences between male students and their female counterparts in this respect, with female students usually reporting employing more social/affective strategies which strongly contribute to the development of communicative competence than did their male counterparts.

The findings suggest that gender of the students was significantly related to choice of strategy use for their vocabulary learning purposes. At present, few previous empirical research studies have been carried out to support the findings of such a relationship. As a result, the only factors which could possibly be explanations for such significant differences appear to be linked to different gender and learning style preferences. Females appear to employ more social/affective learning strategies, not only in interaction in the classroom, but also in interaction in the real world, such as

working cooperatively with peers to obtain feedback; asking questions to obtain clarification; requesting repetition, explanation, or examples as seen in the studies by Ehrman and Oxford (1989); Oxford and Nyikos (1989), while males employed visual and tactile learning strategies as indicated by Reid (1987), and utilisation of media as well as computer programmes in English as a source of the target language input (Intaraprasert, 2000).

8.3.2 Use of Vocabulary Learning Strategies and Major Field of Study

In addition to gender, the major field of study has also been found related to the strategy preference of students. However, very few studies which have explored major field of study as a factor in both language learning and vocabulary learning strategy use are found. Previous research works on language learning strategies in relation to major field of study carried out by Ma (1996) showed that academic major field of study was a significant factor that affects students' choice of strategy use. Likewise, Oxford and Nyikos (1989) concluded in their study that university majors were amongst the key factors that determined students' choice of language strategy use. Their findings revealed that humanities/social sciences/education majors were found to employ certain strategies more frequently than their technical or business counterparts.

In the field of vocabulary learning strategies, the findings of Gu's (2002) study revealed that academic major field of study was less potent a factor than gender in relation to choice of vocabulary learning strategy use. His findings further demonstrated that some science students showed a few symptoms of unsuccessful learners in terms of the strategies they employed, such as memorising words; focussing on word form; relying on visual coding while arts students might have more

extra-curricular time to spend on English learning. However, Gu's (2002) study did not show conclusive evidence of a significant differences in VLS use between arts and science majors.

Unlike Gu's (2002) study, the findings of the present investigation revealed the major field of study in strong relation to students' choices of VLS use when compared with the other four investigated variables, with the English major students reporting overall strategy use, use of strategies in the DMV and EKV categories, and use of individual VLSs significantly higher than did those majoring in both science-oriented and non science-oriented fields. Likewise, science-oriented major students reported some individual strategies significantly more frequently than did non science-oriented major students, and vice versa.

The findings of the present investigation suggest that students' major field of study was significantly related to their choice of strategy use for their vocabulary learning purposes. However, at present, very few previous empirical research works in the field of vocabulary learning strategies have been carried out to support the findings of such a relationship. Consequently, the factors which could possibly be drawn out to explain such significant differences have been hypothesised by the researcher involving nature of the major field of study (major-based) and students' learning style preference. Before discussing students' learning style preference, it is useful to start off with what 'learning style' is and how it may affect students' language or vocabulary learning.

The term 'learning style' is defined as 'stable and pervasive characteristics of an individual, expressed through the interaction of one's behaviours and personality as one approaches a learning task' (Garger and Guild 1984, p. 11). Cohen (1998, p.

15) has defined this term as 'general approaches to learning', or 'the ways learners like or dislike in learning a language' (Gardner and Miller 1999, p. 157). It is generally acknowledged that, by the nature of English language, students majoring in English need to involve various social/affective strategies in language learning not only in interaction in the classroom but also in interaction in the real world, as mentioned earlier by Ehrman and Oxford (1989); Oxford and Nyikos (1989).

For the present investigation, most students majoring in English are females and they reported employing more social/affective strategies for interaction in their vocabulary learning than did males. On the contrary, most male students majoring in science-oriented fields prefer visual and tactile learning strategies as indicated by Reid (1987), as well as utilisation of the media and computer programmes in English as a source of the target language input, as evidenced in Intaraprasert's (2000) study. Reid (1995) indicates that students learn in different ways. For example, some students learn primarily with their eyes (visual learners) or with their ears (auditory learners); some people prefer to learn by experience and/or by "hands-on" tasks (kinesthetic or tactile learners); some students learn better when they work alone while others prefer to learn in groups (p. 202). Since the students truly differ in 'preferred' learning style, this might influence their response to methods of language learning, and this can also be true in their strategy use for vocabulary learning.

The results of the present investigation both in the semi-structured interviews carried out with 67 Rajabhat University students and students' responses of the vocabulary learning strategy questionnaire (VLSQ) in terms of their learning style preference revealed that their preferred learning styles include group working or cooperative learning, participation, and independent learning styles, with most female

students reporting preferring group working and participation, while most of their male counterparts reporting preferring independent learning styles. This could be summarised in brief in conclusion, that students with different preferred learning styles studying in different major fields are likely to have different choices of strategy use in language and/or vocabulary learning.

8.3.3 Use of Vocabulary Learning Strategies and Previous Language Learning Experience

As proposed in Chapter 1, Section 1.2, previous language learning experience for the present investigation is determined as 'more' and 'less' experienced based on the completion of the fundamental English 1 and 2 on offer at Rajabhat Universities as the required/compulsory courses for every student. Any students who have already completed the fundamental English 1 and 2 are classified as 'more experienced', and those who have not yet as 'less experienced'. Previous language learning experience is another of the key factors hypothesised to affect students' choice of vocabulary learning strategy use. The only available previous research works in the field of language learning strategies (VLSs) in association with previous language experience were carried out by Oxford and Nyikos (1989) and Wharton (2000). The findings by Wharton (2000) demonstrated that this variable was found to have little relationship to students' overall language learning strategy use. Similarly, Oxford and Nyikos (1989) studied years of study as previous language learning experience in accordance with students' choice of strategy use in language learning. Unfortunately, the findings revealed that years of study did not significantly affect students' choice of strategies in language learning.

In the field of VLSs, Porte's (1988) study revealed that the students' use of VLSs in class was seen to be significantly affected by factors of present and past language learning experience. Stőffer (1995) also found that students' previous language learning experience was significantly related to, and one of the best predictors for their choice of VLS use. The present investigation also obtained similar results, with 'more' experienced students reporting significantly higher use of the overall strategies, the strategies in the DMV and EKV categories, and the individual strategies than did their 'less' experienced counterparts. The findings of the present investigation suggest that students' previous language learning experience was significantly related to their choice of VLS use. Unfortunately, up to the present, very few previous empirical research works in the field of VLSs have been conducted to examine such a relationship. Therefore, a few factors which could possibly be drawn to explain such significant differences, apart from students' own learning attention or motivation, have been hypothesised by the researcher concerning previous VLS instruction, which Stőffer (1995) indicates is the best predictor for students' choice of VLS use.

However, as mentioned earlier in Chapter 1, many scholars (e.g. Allen, 1983; Carter and McCarthy, 1988; Hughes, 1989; 2003; Jackson and Amvela, 2000; Hedge, 2000; Lewis, 1993; Long and Richards, 1997; Maley, 1986; Meara, 1980; 1982; Read, 2000; Richards, 1985; Schmitt, 1997; Seal, 1991; and Zimmerman, 1997) specifically affirm the neglect of vocabulary learning or teaching. Hedge (2000, pp. 110-111) indicates that students themselves do not place considerable significance on vocabulary, and language teachers language teachers have been told a great deal about new discoveries in English grammar, but they have heard much less about ways

to help students learn new words. Moreover, some past specialists in teaching methodology seem to believe that the meanings of words could not be adequately taught, so it is better not to try to teach them (Allen 1983, pp. 1-4). Therefore, vocabulary often seems to be the least systematised and the least well-catered for of all the aspects of learning a foreign language, such as listening, speaking, reading, writing, pronunciation, grammatical competence, contrastive analysis, phonology or even discourse analysis which have received considerable attention from many scholars and teachers (McCarthy 1990, p. 45). It could be concluded that a lack of attention to vocabulary learning and teaching as well as previous vocabulary strategy instruction is the key factor that affects students' motivation, previous language learning experience and their choices of VLS use.

8.3.4 Use of Vocabulary Learning Strategies and Type of Academic Programme of Study

For the present investigation, the academic programme of the study is classified as 'regular' and 'part-time' programmes. Even though the two programmes share the same curriculum, learning conditions are different in terms of medium of instructional methods or learning activities. These might create a basic distinction related to students' choices of VLS use. Unfortunately, as evidenced in Chapter 2, no past empirical research work has initially been carried out to explore the relationship between students' choices of vocabulary learning strategy use in relation to different types of academic programme of study.

The findings of the present investigation showed some relation between this variable in association with students' choices of strategy use. The findings reveal that the 'regular' students reported greater use of VLSs: overall strategy use, use of

strategies in the EKV category, and use of individual strategies in vocabulary learning, than did the 'part-time' students. A closer look at students' use of individual vocabulary learning strategies reveals that regular students reported greater use in nine strategies than did the part-time students, whereas part-time students reported greater use in only two strategies than did the regular students. Emphasis on the significant differences in use of these strategies might be explained by the students' periods of years they left school before starting to further their university life.

As generally known, most part-time students are adults, and they truly differ from the regular students in terms of characteristics, such as age, learning experience, learning styles, time management/limitation of study, educational assumptions or expectations, or needs. Regular students are young adults studying full time and the majority of them further their higher study right after they have finished the upper secondary school. Through the semi-structured interviews, most regular students reported that they are still fresh and active in dealing with learning tasks and activities. They hope to get a good job after they graduate from the university. In contrast, most of the part-time students are adults. They reported attending classes for different reasons, such as job requirement, career promotion, or just social upgrade. However, some or most of them have got a job or run their own business. They may have time limitations for their study and since they have been far away from formal study for years, or because of their age, when coming back to further their higher study, they may not be as active in learning or motivated to get a job as the regular students. This could be the possible and simple explanation why the regular students reported higher vocabulary learning strategy use than did the part-time students. Furthermore, this explanation is consistent with some scholars (e.g. Cameron, 2001;

Ellis, 1985; 1994; O'Malley and Chamot, 1990; Saville-Troike, 2006; Lightbown and Spada, 1999; Skehan, 1989; Stern, 1983) who affirm that 'age' is one of the factors that may affect language learning or choice of language learning strategy use. Surprisingly, there were still two strategies that the part-time students reported higher use than did the regular students. These were DMV 6 'guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items', and RKV 2 'say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items.

8.3.5 Use of Vocabulary Learning Strategies and Level of Vocabulary Proficiency

Previous research works in the field of language learning strategies (LLSs) (e.g. Oxford and Nyikos, 1989; Green and Oxford, 1995; and Intaraprasert, 2000) carried out to investigate the use of LLSs by students with different levels of language proficiency have revealed that higher proficiency level students generally reported employing LLSs significantly more frequently than those of lower proficiency level students did. Similarly, the findings of previous research works in the field of VLSs (e.g. Ooi and Lee, 1996; Chen, 1998; Chin, 1999; Kojic Sabo and Lightbown, 1999; Fan, 2003; Loucky, 2003; Marefat and Shirazi, 2003; and Kung and Chen, n.d.) revealed that higher vocabulary proficiency (VP) students generally reported employing vocabulary learning strategies significantly more frequently than did lower VP students. Likewise, the findings of the present investigation demonstrate the similar results to the previous research works, not only in the field of language learning, but also VLSs. High-proficiency students generally reported employing VLSs significantly more frequently than did lower proficiency students.

Based on the findings of the present investigation, higher VP students reported greater use of overall strategies than did lower VP students. This can be obviously seen in their use of strategies in the three main categories (DMV, RKV and EKV). The findings revealed significant differences among the students with different VP levels in the use of DMV strategies to discover the meaning of new vocabulary items, and the EKV strategies to expand one's knowledge of vocabulary, respectively, but not the use of RKV strategies to retain the knowledge of newly-learned vocabulary items. One possible point which is frequently cited to explain why some second language learners are more successful than others is individual motivation, since it determines the level of effort which learners use at various stages in their second language development, often a key to ultimate level of proficiency (Saville-Troike 2006, p. 85). There is no doubt, one can conclude from this study that the use of DMV and EKV strategies in relation to students' levels of vocabulary proficiency involves students' motivation.

The term 'motivation' is defined by Gardner (1985) as 'the combination of effort plus desire to achieve the goals of learning the language plus favourable attitudes toward learning the language. That is, motivation to learn a second language is seen as referring to the extent to which the individual works or strives to learn the language because of a desire to do so and the satisfaction experienced in this activity' (p. 10). Likewise, Ellis (1994, p. 715) defines 'motivation' as 'the effort which learners put into learning an L2 as a result of their need or desire to learn it'.

It is generally acknowledged by several scholars (e.g. Ellis, 1985; 1994; Gardner, 1985; Mantle-Bromley, 1995; Gordon, 1997; Mian, 1998; and Dőrnyei, 2003; Saville-Troike 2006) that learner's motivation plays an important part in

language learning and language achievement since it determines the extent to which they will actively expose themselves to learning another foreign language. In this respect, Yule (1996, p. 195) comments that students who experience success in language learning are among the highest motivated to learn and 'motivation may be as much a result of success as a cause'. This can also be true in the field of vocabulary learning. The findings of the present investigation suggest that higher-VP students may be highly motivated to find opportunities to expose themselves to English, both for the classroom-related and classroom-independent learning, as shown in Table 7.6, with students reporting high frequency of use of both the DMV and EKV strategies, especially the EKV strategies which mainly concern the self-directed or classroom-independent vocabulary learning. This means that the effort which higher-VP students bring into their vocabulary learning may make them employ various strategies. In other words, high-proficiency students are better at managing themselves by approaching language tasks more actively and effectively, because they are more proficient, or because they are more self-confident while studying in class, than those with medium- and low-proficiency. This is consistent with Chamot (1987) who indicated that effective learners and ineffective learners are different in that the former are able to use strategies appropriately, whereas the latter also use a number of strategies but inappropriately. However, for the present investigation, it is still problematic to exactly pinpoint that vocabulary learning strategies are the result of students' vocabulary proficiency or vice versa.

To conclude VLS use in relation to the five variables, the findings of the present investigation revealed similar results to a few previous studies, as demonstrated in Chapter 2 in terms of students' gender, where female students

reported a higher frequency of strategy use than did their male counterparts. The findings of the present investigation suggest that gender of students has a relationship to students' choice of strategy use in vocabulary learning purposes, especially the DMV and RKV strategies. Similarly, the other four independent variables for the present investigation: major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency have been found in association with students' choice of strategy use. These variables yield similar results to gender of students. That is, English major students reported a higher frequency of strategy use than those majoring in science- and non science-oriented; those with 'more' previous language learning experience reported a higher frequency of strategy use than those with 'less' previous language learning experience; and high-VP students reported a higher frequency of strategy use than 'medium'- and 'low'-VP students did for the DMV and EKV categories.

However, type of academic programme of study was also found to be related to students' choice of strategy use, with the regular students reporting a higher frequency of strategy use than the part-time students in the EKV category. When taking all five independent variables into account, the relationship between students' choice of VLS use and their gender, the major field of study, previous language learning experience, and type of academic programme of study seems to be one directional. In contrast, when looking into the relationship between students' choice of vocabulary learning strategy use and their vocabulary proficiency levels, it is still complex since it is bi-directional. It cannot be clearly determined, as shown in the study's framework in Figure 3.2, whether vocabulary learning strategies are the cause

or result of students' vocabulary proficiency, or vocabulary proficiency is the cause of their vocabulary learning strategy use.

8.4 Implications of the Research Findings for the Teaching and Learning of English for Rajabhat University Students

As summarised in the previous section in response to the research questions, the research findings reveal a relationship between gender of the student, major field of study, previous language learning experience, type of academic programme of study and level of vocabulary proficiency, and students' overall use of strategies, use of strategies in the three main categories, as use of individual strategies in vocabulary learning. Some implication for the teaching and learning of English for Rajabhat University students may be drawn out for implications as follows:

1. The research found that high-proficiency students reported employing different types of strategies for the purposes of vocabulary learning. They also reported utilising different types of media in English, such as English-speaking films, radio and television programmes, and cassettes of English conversation, as input sources of the target vocabulary in order to improve their vocabulary in general. It is recommended that teachers of English should provide these media in as many different forms as possible and encourage students to utilise them as much as possible as an alternative means of vocabulary learning.

2. One type of the research subjects was part-time or weekend students, who are referred to as 'adult' learners, so curriculum revision or instructional design, or language activities should be particularly designed to serve their characteristics and needs. This, i.e. design can help them learn more effectively.

3. The most remarkable point of the significant findings of this investigation is that the greatest number of RU students with different gender, major field of study, previous language learning experience, type of academic programme of study, and levels of vocabulary proficiency, reported employing the DMV and EKV strategies to discover the meaning of new vocabulary items and to expand the knowledge of vocabulary, rather than the RKV strategies for the retention of the knowledge of newly-learned vocabulary items. To be more precise, these students reported using an English-Thai dictionary to discover the meaning of vocabulary items and to expand their vocabulary (DMV 10; EKV 14); guessing the meaning from context (DMV 2); listening to English lectures/presentation, or cassette of English conversation (EKV 1); listening to English songs (EKV 2); and studying vocabulary items from advertisements, public relations, traffic signs, etc. (EKV 10) significantly more frequently than other DMV and EKV strategies. In this respect, teachers of English should introduce in a wide range of VLSs to their students when teaching or training them for both a classroom-related setting and self-directed vocabulary learning. As Nunan (1997) points out there is enough evidence that strategy training can make a difference. Teachers can teach students how to learn. Besides, Brown (1993) indicates that teachers can help their students to become empowered learners and to make some responsibility for their own success by providing them with a sense of what a strategy is and how they can develop their own strategies to serve their vocabulary learning purposes. Another implication drawn from this investigation is that both teachers and students should be aware of what and how important, VLSs are. In order to raise their awareness, the researcher would like to propose the following:

3.1 A mini-conference among the English staff members for brain-storming should be held for their awareness of how important vocabulary learning strategies are and how vocabulary learning strategies can enhance their students' English vocabulary learning. The staff members should be encouraged to introduce VLSs as part of classroom lessons to their students. They should also be asked to examine the strategy inventory and think of what should be included so that the strategy inventory will be more comprehensive and offer a wider selection for students.

3.2 A mini-seminar about VLSs could be held for students especially at the beginning of new semesters before they start their English lessons. This can encourage and help them to become aware of strategies for their English vocabulary learning. The mini-seminar could be held in separate sessions in respect of types of VLSs, including the strategies to discover the meaning of new vocabulary items (DMV), to retain the knowledge of newly-learned vocabulary items (RKV), to expand one's knowledge of vocabulary (EKV). During the seminar, students may also be asked to examine the already-identified VLSs based on the strategy inventory for the present study, providing feedback on what they think about those strategies in terms of usefulness and workability. They may add to the list some strategies which they think are missing. Furthermore, an informal talk with students about vocabulary learning strategies could be held occasionally.

8.5 Contributions of the Present Investigation

The present investigation has made some significant contributions to the field of vocabulary learning strategies. This present investigation has offered the perspective of vocabulary learning strategies exclusively employed by undergraduate students

learning English at Rajabhat Universities located in different geographical regions in Thailand, and therefore can be regarded as the first empirical research work in the field in relation to variable taken into account. The significant contributions based on the findings of the present investigation can be characterised as follows:

1. As we have seen in Chapter 2, there has been only empirical research work on VLSs carried out with Thai students. However, it was a preliminary study and the focal point was looking into types of VLSs employed by Thai engineering students, with no variables concerned or taken into consideration. In contrast, this present investigation has emphasised and offered a broader investigation concerning the relationship between students' reported frequency of strategy use and their gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency.

2. Apart from the variables investigated, the researcher for the present investigation has systematically produced a vocabulary learning strategy inventory (VLSI) as shown in Chapter 4, which is on the basis of students' self-reported data obtained through semi-structured interviews. This VLSI has been particularly used as the instrument to elicit RU students' use of VLSs in detail.

3. In measuring RU students' levels of vocabulary proficiency, the researcher for the present investigation has systematically constructed a vocabulary proficiency test (VPT) on the basis of many scholars' guidelines as proposed in Chapter 5. The VPT has been constructed rigorously to serve the particular purpose of the present investigation, and it has been proved to be effective in reliability and validity. If the content of the VPT is not suitable for other groups of subjects, at least, the processes

of the test construction may serve other researchers as a guide to construct their own language or vocabulary proficiency tests.

4. Regarding data analysis, different types of statistical methods were employed, including an analysis of variance (ANOVA), the chi-square (χ^2) tests, and factor analysis. This data analysis can be a guide for other researchers to apply in similar types of reported data.

8.6 Limitations of the Present Investigation and Proposals for Future Research

The present investigation has been valid and valuable in dealing with the primary research questions, which are to describe types of VLSs reported employed by Rajabhat University students as well as to examine variation patterns and to explore relationships between frequency of students' reported use of strategy at different levels in accordance with gender, major field of study, previous language learning experience, type of academic programme of study, and level of vocabulary proficiency. However, in conducting this research work, certain limitations have appeared, and the fields for possible future research works should take these limitations into consideration:

1. Some researchers (e.g. Rubin, 1981; Cohen and Aphek, 1981; Graham, 1997) comment that classroom observations is not a productive method of data collection to reveal students' learning strategies, the researcher for the present investigation does feel that this method should have been included for the present investigation. Classroom observation may help researchers view other classroom aspects, such as how the teacher handles his or her English class, classroom interaction between a

teacher and students, students' classroom participation and the students' different learning styles, other than their strategies for vocabulary learning. The research findings in the present investigation reveal that students with different genders, major fields of study, previous language learning experiences, types of academic programme of study and levels of vocabulary proficiency learning English at Rajabhat Universities reported significant differences in use of strategies for the DMV, RKV, and EKV categories, consequently, classroom observation might have demonstrated, what caused such significant differences in English classrooms.

2. The research population should have been more well-balanced in terms of gender and previous language learning experience; and more homogeneous in terms of years of study at the university. This is because students with longer exposure in university study may have an advantage of acquiring certain learning strategies through their experiences than those with shorter exposure in university study.

3. More VLSs, apart from the existing strategy questionnaires by other researchers, should have been derived and included in the vocabulary learning strategy questionnaire for the present investigation to offer a wide range of VLSs for RU students to choose from.

In spite of the limitations, the researcher acknowledges that some areas might justify further research. These areas could include the following:

1. As we have seen in the review of related literature in Chapter 2, a number of research works in the field of vocabulary learning strategies have been carried out with native speakers of English learning a foreign language and/or with non-native speakers of English learning English as a second language. More recent works in the

area need to be conducted with a wider range of populations in different contexts, i.e. non-native speakers of English learning English as a foreign language.

2. To date, based on the related literature review, no researchers in the field of vocabulary learning strategies appear to have taken into consideration type of academic programme of study as one of the factors related to students' choices of VLS use. Other aspects which should be further explored include students' socio-economic/academic backgrounds, or attitude and motivation towards vocabulary learning.

3. As we have seen in the review of related literature, the research works on VLSs conducted with native speakers learning other languages as foreign languages, or non-native speakers learning English as a second/foreign language elsewhere in the world have made use of the vocabulary strategy questionnaire as the most common instrument for data collection. There should be a greater variety of instruments produced to elicit students' VLSs of different language learners in different contexts, e.g. observation.

4. A comparison of teaching styles/habits might be made for a better understanding of vocabulary learning. This could include teaching methods, content areas, teachers' expectation and language skills of teachers teaching students with different previous language learning experience and at different types of academic programme of study might be made for a better understanding of students' VLSs.

5. As evidenced in the research findings, there are 'statistically significant' differences in the use of the strategies to discover the meaning of new vocabulary items (DMV), and strategies to expand one's knowledge of vocabulary (EKV) rather than strategies to retain the knowledge of newly-learned vocabulary items (RKV). In

this respect, classroom observation may be a useful method to elicit more about what contributes to these significant differences.

6. As pointed out, the research population for the present investigation consists of students studying in different years of study (i.e., 1st, 2nd, 3rd, and 4th), the researcher has recognised that the heterogeneity of students in terms of the numbers of years of study at each university may have affected students' choices of strategy use. As a result, there is a need for future research to investigate if this aspect associates with students' reported choices of strategy use for vocabulary learning. Additionally, instead of exploring students' reported strategy use relying solely on a statistical comparison, asking students to evaluate the proposed strategies regarding their usefulness and workability could be made.

7. Since the present investigation has successfully established statistically significant links between variables, the other thing that should be done is to further analyse currently available data obtained through student oral interviews. Some significant aspects of vocabulary learning in a formal setting in Thailand are worth exploring, so as to help explain the causal relationships among the variables. These aspects may include students' perceptions about adequacy of time allocated for their vocabulary learning, as well as their relationship with their teachers, classroom learning and teaching process. This should be done in a more qualitative way.

8. To create trust in the research results and to ascertain the reliability of the research findings, as Locke et al (1998) suggest, consequently, a replication, such as repeating a study in different settings or research designs, or with different subjects, is recommended for future or further study.

8.7 Conclusion

The present investigation has been conducted in a data-based, systematic, and non-judgmental descriptive manner. It has contributed to the field of vocabulary learning strategies in respect of vocabulary learning strategy classification, the variables investigated, and students' vocabulary proficiency measurement. One of the major contributions of the present investigation has been the classification system of vocabulary learning strategies which Rajabhat University students reported employing when encountering vocabulary items, either in a classroom-related setting, or a classroom-independent setting. The vocabulary learning strategies have been classified on the basis of vocabulary learning purposes, including the discovery of the meaning of new vocabulary items, the retention of the knowledge of newly-learned vocabulary items, and the expansion of one's knowledge of vocabulary, as reported by the research subjects. Of the variables explored, the four variables: the student's gender, major field of study, previous language learning experience, and level of vocabulary proficiency have rarely aroused any past researchers' interests in this field of study. Moreover, type of academic programme of study has never been carried out by any researchers in this field of study.

Lastly, the researcher for the present investigation has suggested some points for implications arising out of the research findings for the teaching and learning of English to Rajabhat University students. Limitations of the present investigation and some proposals for future research have been put forward as well. The researcher believes that with a careful research design as presented in Chapter 3, as well as an appropriate instruments used for drawing vocabulary learning strategies, a researcher can gain further insights into how students cope with their vocabulary learning, and

how vocabulary learning strategies are employed by different students in different learning contexts. Other variables, for example, students' previous language learning experience, level of vocabulary proficiency, or major field of study, could have an impact on such research.

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APPENDIX 1

The Number of Students and Institutions Participating in the Data Collection

Regions	Provinces	Rajabhat Universities	Phase 1 of D/C	Phase 2 of D/C	Number of Students	
					Intv	VLSQ
North	Chiang Rai	Chiang Rai	...	...	...	...
	Chiang Mai	Chiang Mai	...	x	...	133
	Lampang	Lampang	...	...	...	...
	Uttaradit	Uttaradit	...	...	...	...
	Kamphaeng Phet	Kamphaeng Phet	...	...	...	...
	Nakhon Sawan	Nakhon Sawan	...	...	...	...
	Pitsanulok	Pibulsongkram	...	x	...	126
	Phetchabun	Phetchabun	x	...	13	...
Northeast	Loei	Loei	...	...	...	...
	Sakon Nakhon	Sakon Nakhon	...	...	...	...
	Udon Thani	Udon Thani	...	...	...	135
	Maha Sarakham	Maha Sarakham	x	x	16	61
	Nakhon Ratchasima	Nakhon Ratchasima	…	x	…	149
	Buriram	Buriram	...	...	...	...
	Surindra	Surindra	...	...	...	...
	Ubon Ratchathani	Ubon Ratchathani	…	…	…	…
	Kalasin	Kalasin	x	...	12	...
	Chaiyaphum	Chaiyaphum	...	...	...	...
	Sisaket	Sisaket	...	...	...	...
	Roi Et	Roi Et	...	…	...	…
Central	Lopburi	Thepsatri	...	...	...	...
	Phranakhon Si Ayutthaya	Phranakhon Si Ayutthaya	...	...	...	...
	Phathumthani	Valaylongkorn	...	...	...	...
	Bangkok	Chandrakasem	...	x	...	98
		Dhonburi	x	...	12	...
		Bansomdej chaopraya	...	...	...	...
		Phranakhon	...	x	...	119
		Suan Dusit	...	...	...	...
		Suan Sunandha	...	...	...	...
East	Chachoengsao	Rajanagarindra	...	...	...	...
	Chantaburi	Rambhaibarni	...	x	...	187
West	Kanchanaburi	Kanchanaburi	...	x	...	…
	Nakhon Pathom	Nakhon Pathom	x	x	14	123
	Ratchaburi	Muban Chom Bung	…	…	…	…
	Phetchaburi	Phetchaburi	…	…	…	…
South	Phuket	Phuket	...	...	...	...
	Yala	Yala	...	x	...	164
	Songkhla	Songkhla	...	x	...	66
	Nakhon Si Thammarat	Nakhon Si Thammarat	…	…	…	…
	Surat Thani	Surat Thani	...	x	...	120
Total	40	40	5	12	67	1,481

Source: Commission on Higher Education (Academic year 2005)

Note: D/C refers to data collection; Intv, 'semi-structured interviews'; and VLSQ, vocabulary learning strategy questionnaire

APPENDIX 2

The Interview Timetable

Institution	Date	Time	Activity
Kalasin RU Kalasin	5 September 2006	09.00-09.15 a.m.	Meeting with students
		10.20 a.m.	Interviewing Reg1
		11.00 a.m.	Interviewing Reg2
		11.35 a.m.	Interviewing Reg3
		13.00 a.m.	Interviewing Reg4
		13.35 p.m.	Interviewing Reg5
	6 September 2006	10.10 p.m.	Interviewing Reg6
		11.00 p.m.	Interviewing Reg7
		13.30 p.m.	Interviewing Reg8
		09.10-09.20 a.m.	Meeting with students
	7 September 2006	11.00 a.m.	Interviewing Week1
		11.40 a.m.	Interviewing Week2
		13.35 p.m.	Interviewing Week3
		14.50 p.m.	Interviewing Week4
Dhonburi RU Bangkok	13 September 2006	09.00-09.15 a.m.	Meeting with students
		10.20 a.m.	Interviewing Reg9
		11.00 a.m.	Interviewing Reg10
		13.00 a.m.	Interviewing Reg11
		14.10 p.m.	Interviewing Reg12
		15.30 p.m.	Interviewing Reg13
	13 September 2006	17.20-17.30	Meeting with students
		18.40 p.m.	Interviewing Eve1
	14 September 2006	11.00 a.m.	Interviewing Reg14
		13.35 p.m.	Interviewing Reg15
		14.50 p.m.	Interviewing Reg16
		17.20 p.m.	Interviewing Eve2
		18.00 p.m.	Interviewing Eve3
		18.40 p.m.	Interviewing Eve4

APPENDIX 2 (Continued)

Institution	Date	Time	Activity
Nakhon Pathom RU Nakhon Pathom	15 September 2006	09.00-09.15 a.m.	Meeting with students
		10.30 a.m.	Interviewing Reg17
		11.20 a.m.	Interviewing Reg18
		13.30 a.m.	Interviewing Reg19
		14.30 a.m.	Interviewing Reg20
	16 September 2006	09.00-09.15 a.m.	Meeting with students
		11.00 a.m.	Interviewing Week5
		13.35 a.m.	Interviewing Week6
		14.20 a.m.	Interviewing Week7
		15.00 p.m.	Interviewing Week8
	17 September 2006	09.00-09.15 a.m.	Meeting with students
		11.00 a.m.	Interviewing Week9
		13.35 a.m.	Interviewing Week10
	18 September 2006	09.00-09.15 a.m.	Meeting with students
		11.00 a.m.	Interviewing Reg21
		12.30 a.m.	Interviewing Reg22
		13.35 a.m.	Interviewing Reg23
		14.20 a.m.	Interviewing Reg24
Petchabun RU Petchabun	1 September 2006	09.00-09.15 a.m.	Meeting with students
		11.00 a.m.	Interviewing Reg25
		12.30 a.m.	Interviewing Reg26
		13.35 a.m.	Interviewing Reg27
		14.20 a.m.	Interviewing Reg28
	22 September 2006	09.30 a.m.	Interviewing Reg29
		10.30 a.m.	Interviewing Reg30
		13.35 a.m.	Interviewing Reg31
		14.20 a.m.	Interviewing Reg32
	23 September 2006	09.00-09.15 a.m.	Meeting with students
		10.30 a.m.	Interviewing Week11
		11.20 a.m.	Interviewing Week12
		12.35 a.m.	Interviewing Week13
		14.20 a.m.	Interviewing Week14
		15.30 p.m.	Interviewing Week15

APPENDIX 2 (Continued)

Institution	Date	Time	Activity
Rajabhat Mahasarakham U Maha Sarakham	24 September 2006	09.30-10.10 a.m.	Meeting with students
		11.30 a.m.	Interviewing Week16
		12.35 a.m.	Interviewing Week17
		13.20 a.m.	Interviewing Week18
		14.00 a.m.	Interviewing Week19
		14.40 a.m.	Interviewing Week20
	25 September 2006	09.00-09.10 a.m.	Meeting with students
		10.30 a.m.	Interviewing Reg33
		13.35 a.m.	Interviewing Reg34
		14.20 a.m.	Interviewing Reg35
	26 September 2006	09.20-09.30 a.m.	Meeting with students
		11.00 a.m.	Interviewing Reg36
		11.45 a.m.	Interviewing Reg37
		14.10 a.m.	Interviewing Reg38
		15.00 a.m.	Interviewing Reg39
	30 September	09.20-09.30 a.m.	Meeting with students
		10.45 a.m.	Interviewing Week21
		11.30 a.m.	Interviewing Week22
		13.35 a.m.	Interviewing Week23
		14.20 a.m.	Interviewing Week24

Note: Reg means 'regular' student; Week means 'weekend' student; and Eve means 'evening' student. Reg1 means the first 'regular' student who was interviewed. Week1 means the first 'weekend' student who was interviewed. Eve1 means the first 'evening' student who was interviewed.

APPENDIX 3

The semi-structured interview guide on vocabulary learning strategies:

1) What is your name?

2) How many hours a week do you study English for communication in the classroom at your university?

3) According to question No. 2, do you think it is enough?

4) As a university student, how is English important in your daily life?

5) How is English important for your future career?

6) What do you think is very difficult for you in learning English?

7) What language element do you think is necessary for good listening, speaking, reading, or writing English?

8) What do you like to do to help you discover the meanings of English vocabulary, especially when in class?

9) What do you like to do to help you discover the meanings of English vocabulary, especially when outside class?

10) What do you like to do to help you retain the newly-learned English vocabulary, especially when in class?

11) What do you like to do to help you retain the meanings of English vocabulary, especially when outside class?

12) What do you like to do to expand English vocabulary when in class?

13) What do you like to do to expand your vocabulary, especially when outside class?

14) How do you develop a variety of techniques for your vocabulary learning?

15) Do you have any comments on vocabulary learning in your present classroom?

APPENDIX 4

A Sample Interview Script (The translated Version)

Interviewer: Mayuree Siriwan
Interviewee: Reg28
Date: 21st September 2006
Time: 2.20 p.m.
Place: Petchabun Rajabhat University, Petchabun, Thailand
●●●…●●●●●

Me: Good afternoon.
Reg28: Good afternoon.
Me: Please take a seat.
Reg28: Thank you.
Me: How are you today?
Reg28: I'm fine, thank you. And you?
Me: I'm very fine, thank you. My name is ….. **Q1 What's your name, please?**
Reg28: Please call me 'Paw'. It's my nickname. I'm a third year student majoring in English.
Me: OK. You're a third year English major student… This means that you've already completed your fundamental or basic English 1 and 2. Right?
Reg28: Yes, already.
Me: **Q2 How many hours a week did you study each of these courses?**
Reg28: Three hours a course a week.
Me: **Q3 Do you think it's enough to study three hours a week for a fundamental English course?**
Reg28: For me, it's enough since I have to study many other subjects, especially English core courses for my major as well as other subjects. If I take more than 3 hours for each of the fundamental English course, it may cause me to be very exhausted. In addition, I have a lot of homework and I need some more time to prepare myself for my presentation. I have a lot of assignments to submit. I'm very, very tired.
Me: Um… I see, but you should be patient to obtain good things in the future.
Reg28: I know that I must be patient. Everybody is patient and I must be, too.
Me: Good. Uh … **Q4 please let me know how English is important for you, as an English major student, in your everyday life?**
Reg28: As an English major student, English is very important for my everyday life since I have to deal with it everyday. I have to search regularly for information and take a report in English as well as use English to communicate with my teachers of English whether in class or outside the class. Some of my teachers of English, even though they are outside the class, usually speak English with their students. They say that if they don't speak English, their students will never practise and improve their English ability. Say, I have to use English every day whether in or outside the class.
Me: Um… it's interesting. OK, **Q5 please let me know about your expected future career. What do you want to be in the future?**
Reg28: As an English major student, I want to be a tour guide.
Me: A tour guide? How is English important to you as a tour guide?

Reg28: English will be very important for being a tour guide. For example, my tourists are foreigners – I have to explain any information in English. I cannot be a good tour guide if I cannot speak English. Sometimes, if tourists contact me and ask for some brochures, at least, I can use English to communicate with them. Well, I can say that English is very important both for my study and future career as a tour guide. I think that I can earn high salary for being a guide. Moreover, I'll have good opportunities to travel with my tourists. I dream to be a tour guide in other countries, if possible, but if not, being a tour guide at the South of Thailand should be OK. There are a lot of beautiful sightseeing, seas, and foreigners in the South, so I'll have a good chance to use my English regularly.

Me: Right… May your dream come true!

Reg28: Thank you very much.

Me: Ah, … as a student majoring in English, **Q6 do you think that English is difficult?**

Reg28: Even though English is my major field, it is still difficult for me. I'm easily forgetful!

Me: How is English difficult for you? **Q7 What any of the aspects of English do you think is necessary for good listening, speaking, reading, and/or writing?**

Reg28: All four skills are very important for learning a language. Apart from those, vocabulary and grammar also cause me big problems in English learningl. One problem is that I'm shy to speak English… (laugh)

Me: You are the third year student majoring in English … why are you still shy to speak English? If you are still shy, how can you be a good tour guide?

Reg28: (a shy smile) If I'm a tour guide, I'll have opportunities to use English with foreigners, then it may decrease my shyness. Oh, sorry, … I miss the point … your last question is about my problems in English, right?

Me: That's right. What's your major problem in learning English?

Reg28: Uh … It's a lack of self-confidence. For example, when speaking I'm afraid that I mispronounce, then other people will not understand what I'm trying to say.

Me: Uh-huh. What else is the main problem in your English learning?

Reg28: The other problem is that I am poor at vocabulary, I mean I know small vocabulary and I cannot remember large vocabulary. I think, if I remember large vocabulary, I will improve my English ability to listen, speak, read and write. Furthers, I'm not shy to speak out my opinions.

Me: What causes you a big problem in learning English if you know small vocabulary?

Reg28: Knowing small vocabulary causes me to be unable to express my real thoughts, feelings and opinions.

Me: You mean your major problem in learning English is vocabulary?

Reg28: That's right. If I have rich and large vocabulary, I'm more confident to choose the right words to express my ideas and feelings as wanted. I'm more confident for the correct pronunciation. In contrast, knowing small vocabulary makes me reluctant to speak and also blocks me improving my English ability.

Me: You mean you also have a major problem of the correct pronunciation of words. Right?

Reg28: Right. It's a big problem since I'm not sure whether I pronounce words correctly. Besides, the other main problem, as mentioned earlier, is that I cannot remember large vocabulary. There are too many vocabulary items to remember.

Me: OK, now I'd like to ask you that **Q8 if you don't know the meaning of new vocabulary items and you really want to know their meanings, what do you usually do?**

Reg28: Um… to gain the meaning of vocabulary items? Um … first, I rely on a dictionary, but if I don't have a dictionary with me, and if I'm in class at that time, I ask my teacher of English. I sometimes ask my classmates who sit by me.

Me: Apart from what you've just mentioned, are there any other techniques you use to find out the meaning of vocabulary items?

Reg28: Pardon. I don't understand what you mean?

Me: Suppose you are doing a test of English in class, you are not allowed to use a dictionary, to ask your classmates or a teacher, how can you know the meaning of vocabulary items?

Reg28: Ah, I see. Um … I need to struggle by trying guessing the meaning of words through contexts. I usually use this tactic when taking a vocabulary test.

Me: Is it a good technique for you to know the meaning of new vocabulary items?

Reg28: Certainly.

Me: **Q9 What do you do to learn the meaning of vocabulary when you're at home or somewhere else apart from being in the class?**

Reg28: Again, I usually use a dictionary. I use a dictionary both inside and outside the classroom.

Me: What else do you do to help you know the meaning of vocabulary items at home or somewhere apart from your English class?

Reg28: Um… at home I know the meaning of vocabulary items by asking my sister who is quite good at English. When I go somewhere, I learn vocabulary items from advertisements, notices, labels or manufacture's instructions in English and note down words.

Me: Good. **Q10 Now, please tell me the ways that help you remember the meaning of previously-learned vocabulary items?**

Reg28: To remember the meaning of previously-learned vocabulary items?

Me: Uh-huh

Reg28: Um … my first way is to say or repeat vocabulary items aloud. I have made use of this tactic since I was a young pupil. I was taught to remember vocabulary items in this way.

Me: What other techniques you use to remember newly-learned vocabulary items?

Reg28: Grouping vocabulary items that share common features or grouping vocabulary items according to their lexical sets. This can help me remember them more easily.

Me: Please show me some examples of grouping vocabulary items that share common features or grouping vocabulary items according to their lexical sets.

Reg28: Uh … for example, *jog, sprint, hop, jump, run*, are words that share some common features. The words like *'shine, shy, shin, show, shake, share'* etc., share the same initial consonant sound, … something like that.

Me: What do you do then with these vocabulary items?

Reg28: When I can remember these vocabulary items, I try to practise using them in sentences so that I can use them at will for my speaking and writing. When I see them again in text readings, I can recall their meanings.

Me: Um … **Q11 when you are outside the class, what do you usually do to remember the newly-learned vocabulary items?**

Reg28: Well, I usually read different texts, such as articles, newspapers, comics, brochures. We can read everywhere.

Me: Anything more to help you remember vocabulary items outside the class?

Reg28: I often try to link things or real objects around me to English vocabulary items…

Me: For example?

Reg28: For example, when I look at a piece of hanging cloth that can be pulled across to cover a window, divide a room etc., I think of the word 'curtain'; or when looking at a plastic or clay pot in which we grow plants, I think of the word 'flowerpot'; or when looking at a machine for washing clothes, I think of the word 'washing machine'; or when looking at the ATM, I link it to what the meaning it is … something like that.

Me: Oh. It's one of the effective strategies to remember words. Do you know what the ATM means?

Reg28: I think I know. If I'm right, the meaning is the automatic machine for telling us money.

Me: You're a very smart student. All strategies you told me help you effectively to remember the knowledge of previously-learned vocabulary items?

Reg28: Yes, of course. Apart from those mentioned, the other thing I usually do to help me remember the knowledge of newly-learned vocabulary items is to write or take note the word with its meaning(s) several times in my notebook. I need to say vocabulary items aloud either in isolation or say them aloud in sentences 3 or 4 times or more. I try to think of the previously-learned vocabulary items during taking a shower, or before going to bed, or when closing my eyes. I see and keep them in my mind. It's an effective way to help me remember them.

Me: Um … That's interesting! Anything more you do to retain the knowledge of newly-learned vocabulary items?

Reg28: Um…I think … listening to people or foreigners speaking English help me review the previously-learned vocabulary items as well as to learn new vocabulary items.

Me: And have you known the meaning of those vocabulary items before?

Reg28: Not yet, but I try to guess first – guessing through context clues, then taking a note, and finally looking up the meaning in the dictionary.

Me: Uh-huh. What kind of dictionary do you usually use?

Reg28: Both bilingual and monolingual dictionary, but mainly the bilingual (English-English) dictionary because I can check the exact stress, pronunciation, spelling, etc. with examples. I also use an electronic dictionary, and the assistance of the dictionary programme installed in the computer. I can learn both previous and new vocabulary items through the use of dictionary.

Me: And when do you use a monolingual (English-Thai) dictionary?

Reg28: When I don't understand the meaning of vocabulary items in the English-English dictionary, I check it again in English-Thai dictionary to ensure the misunderstanding of meaning.

Me: UM … Are there any other ways you use to keep the knowledge of newly-learned vocabulary items?

Reg28: Uh … watching soundtrack movies (English-speaking films) as well as singing and listening to English songs is one of an important strategies that helps me remember words. I often learn some new vocabulary items through films and songs unexpectedly. If I don't know the meaning, I keep them in mind or take note first, then looking the words up in the dictionary later. I like singing English songs because I feel relaxed and it's a helpful way to practise pronouncing words when singing. Even though I don't know the meaning of the song, I try to guess the meaning from music we hear.

Me: How? Could you explain?

Reg28: For example, if the music of the song is quite slow, the content may be sad. If the music is fast, it may be a pop song, … something like that. If we really want to know the meaning of the song, it's easy – we can look it up through the internet.

Me: Um… Now please let me know about your own vocabulary. Do you think that you have large vocabulary?

Reg28: Oh, no! As told, I have small vocabulary.

Me: OK. **Q12 What do you usually do to help you know more vocabulary?**

Reg28: First, I am interested in both listening and speaking. When being in an English class, I attentively listen to my teacher of English speaking English, listening to a cassette of English conversation in various situations makes me concentrate on what I'm listening. This can help me learn many vocabulary items.

Me: And you mentioned reading … how does reading helps expanding your vocabulary?

Reg28: I have to read a lot. As I have told you, I learn vocabulary by reading different newspaper articles and different text readings. There are a lot of vocabulary items in the text readings. Sometimes, we are assigned the task of searching for English information for the class presentation. In this case, whether working individually, or in pair, or in a small group, we have to look up the meaning of vocabulary items in order to understand the text reading. This can help us learn more vocabulary items by ourselves.

Me: This sounds very interesting! **Q13 What do you do to help you learn more vocabulary items, especially when you are outside the class?**

Reg28: Um … For me, having a conversation with my classmates, friends, teachers of English, native speakers of English, or hearing them speaking some new vocabulary items also helps know more vocabulary. These can be within and outside the class.

Me: Good. You use these techniques within and outside the class?

Reg28: Certainly. Both within and outside the class.

Me: Anything more? I mean what other things do you do when you are outside the class to help you expand your vocabulary?

Reg28: Well, I sometimes watch soundtrack movies, listen to or sing English songs, and the other way, like … listen to English radio programme, or watch English programme on TV so as to learn new more vocabulary items with pronunciation, spelling, and meaning, then I take a note, and review for remembering them.

Me: When you are outside the class, what do you for your vocabulary learning?

Reg28: Uh…. I usually learn a lot of vocabulary through the use of the internet. We use the internet to search for information or to chat to our friends.

Me: In Thai or English?.

Reg28: Both, but mainly in English. We like chatting through the internet and when we chat we don't care much about tenses or grammatical structures, but we understand each other. I try to chat with foreigners through the internet so that I can practise using my English.

Me: Apart from making use of the internet, what else do you do for vocabulary learning when being outside the classroom?

Reg28: Uh … I stay in town, and I'm quite familiar to one of my neighbours who has got married with a native of English. Since she and I are quite close, thus I have chances to talk to her husband, a British. His English is easy to understand. When he knows that I study English as my major, he seems pleased to speak English to me. I understand some, but sometimes I don't understand. This is because, I think, I don't know large English vocabulary items.

Me: If you know a lot of vocabulary, what can you do with your large vocabulary?

Reg28: If I have large vocabulary, I think I'm better and more confident to speak with him. As told, I'm shy to speak – I'm afraid for being mispronounced, and he tells me not to worry or not to be shy – he doesn't care, but I can't still stop my shyness. …. Anyway, listening to or hearing him speaking English helps me learn more vocabulary items.

Me: You're lucky to use English outside the classroom. Try to stop your shyness or you can't be a good tour guide as expected. Try to gain more confidence, dear.

Reg28: I know … I'm trying.

Me: You've told me that you employ many techniques for you vocabulary learning. **Q14 Please let me know how you develop a variety of techniques for your vocabulary learning?**

Reg28: For me, I develop those vocabulary learning techniques by practising them repeatedly.

Me: Good girl. I've got a lot of useful aspects of your vocabulary learning. **Q15 Now, please give me your suggestions or comments on vocabulary teaching. What and should a teacher of English do to help their students reach their goals of vocabulary learning?**

Reg28: Well, … I like learning vocabulary items from songs, therefore I'd like teachers of English to teach vocabulary through English songs. They may delete some vocabulary items, and let them blank, then let us listen to the whole song and try to find out the missing vocabulary items to fill in the blanks to complete the song. Then, let us sing a song together twice or three times. This can be a helpful way to make us learn vocabulary happily and in a relaxed atmosphere.

Me: Any more comments or suggestions?

Reg28: I think… nothing more.

Me: Thank you very much for useful and valuable information of your vocabulary learning.

APPENDIX 5

The Data Collection Timetable

Institute	Date	Time	Activity
Nakhon Ratchasima RU Nakhon Ratchasima	15 December 2006	09.00-09.20 a.m.	Meeting with students
		09.30-09.40 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	16 December 2006	09.00-09.20 a.m.	Meeting with students
		09.30-09.40 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
Udon Thani RU Udon Thani	17 December 2006	09.00-09.20 a.m.	Meeting with students
		09.30-09.40 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	18 December 2006	09.00-09.20 a.m.	Meeting with students
		09.30-09.40 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
Nakhon Pathom RU Nakhon Pathom	22 December 2006	09.00-09.20 a.m.	Meeting with students
		09.30-09.40 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	23 December 2006	09.00-09.20 a.m.	Meeting with students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test

APPENDIX 5 (Continued)

Institute	Date	Time	Activity
Pranakhon RU Bangkok	25 December 2006	09.00-09.20 a.m.	Meeting with regular students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	Wed 10 January 2007	17.15-17.20 a.m.	Meeting with regular students
		17.20-18.20 a.m.	Students administer the questionnaire
		18.20-18.35 a.m.	Students take the test
Chiang Mai RU Chiang Mai	4 January 2007	09.00-09.20 a.m.	Meeting with students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	4 January 2007	17.15-17.20 p.m.	Meeting with evening students
		17.20-18.20 p.m.	Students administer the questionnaire
		18.20-18.35 p.m.	Students take the test
	6 January 2007	09.00-09.20 a.m.	Meeting with weekend students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test

APPENDIX 5 (Continued)

Institute	Date	Time	Activity
Pibulsongkram RU Phitsanulok	7 January 2007	09.00-09.20 a.m.	Meeting with weekend students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	8 January 2007	09.00-09.20 a.m.	Meeting with regular students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
Rambhaibarni RU Chantaburi	12 January 2007	09.00-09.20 a.m.	Meeting with regular students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	13 January 2007	09.00-09.20 a.m.	Meeting with weekend students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
Chadrakasem RU Bangkok	18 January 2007	09.00-09.20 p.m.	Meeting with regular students
		09.30-10.30 p.m.	Students administer the questionnaire
		10.40-11.10 p.m.	Students take the test
	18 January 2007	17.15-17.20 p.m.	Meeting with evening students
		17.20-18.20 p.m.	Students administer the questionnaire
		18.20-18.35 p.m.	Students take the test

APPENDIX 5 (Continued)

Institute	Date	Time	Activity
Surat Thani RU Surat Thani	21 January 2007	09.00-09.20 a.m.	Meeting with weekend students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	22 January 2007	09.00-09.20 a.m.	Meeting with regular students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
Songkhla RU Songkhla	28 January 2007	09.00-09.20 a.m.	Meeting with weekend students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test
	29 January 2007	09.00-09.20 a.m.	Meeting with regular students
		09.30-10.30 a.m.	Students administer the questionnaire
		10.40-11.10 a.m.	Students take the test

APPENDIX 6

A Strategy Questionnaire (Thai Version)

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แบบสอบถามเพื่อการวิจัย

เรื่อง "กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษของนักศึกษาระดับปริญญาตรี มหาวิทยาลัยราชภัฏ"

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> **คำชี้แจง**

แบบสอบถามชุดนี้มี 2 ตอน ได้แก่

      ตอนที่ 1   ข้อมูลส่วนตัวของนักศึกษา

      ตอนที่ 2   แบบสอบถามเกี่ยวกับกลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษ

      แบบสอบถามนี้ต้องการข้อมูลเกี่ยวกับการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษของนักศึกษา ที่กำลังศึกษาระดับปริญญาตรี มหาวิทยาลัยราชภัฏ ข้อมูลที่ได้จะนำไปวิเคราะห์เพื่อนำผลการวิจัยไปใช้ประกอบการทำวิทยานิพนธ์ระดับปริญญาเอกสาขาวิชาภาษาอังกฤษ ขอให้นักศึกษาอ่านข้อคำถามทุกข้อให้ละเอียดรอบคอบ แล้วให้ทำเครื่องหมาย ✓ ในการเลือกตอบในช่องใดช่องหนึ่งเท่านั้น ข้อมูลที่เลือกตอบจะนำไปวิเคราะห์ และสรุปผลเป็นภาพรวมเท่านั้น คำตอบที่นักศึกษาเลือกตอบไม่มีผลกระทบต่อการเรียนวิชาภาษาอังกฤษและไม่มีผลในทางเสียหายแก่นักศึกษาหรือสถาบันการศึกษาของนักศึกษาในเรื่องนี้แต่ประการใด

      ข้อมูลที่นักศึกษาเลือกตอบนั้นมีความสำคัญอย่างยิ่งต่อการสรุปผลในเรื่องกลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษ ของนักศึกษา ข้อมูลที่เป็นไปตามที่นักศึกษาได้ปฏิบัติจริงๆ จะนำไปสู่การสรุปผลที่ใช้ประโยชน์ในการปรับปรุง พัฒนาการเรียนการสอนภาษาอังกฤษให้มีประสิทธิภาพยิ่งขึ้น ดังนั้น จึงขอความร่วมมือจากนักศึกษาให้ตอบข้อมูลตามความเป็นจริง และขอขอบคุณที่ให้ความร่วมมือในการตอบแบบสอบถามด้วยดีเป็นการล่วงหน้าไว้ ณ โอกาสนี้

ตอนที่ 1 ข้อมูลส่วนตัวของนักศึกษา

1. เพศ ☐ ชาย ☐ หญิง

2. กำลังศึกษาในระดับปริญญาตรี ☐ ภาคปกติ ☐ ภาคพิเศษ/สมทบ

3. หลักสูตร/สาขาวิชา .... ชั้นปีที่ ....

    คณะ.. มหาวิทยาลัยราชภัฏ ....

4. ข้อมูลการเรียนหมวดวิชาการศึกษาทั่วไป กลุ่มวิชาภาษาอังกฤษเพื่อการสื่อสาร
    (ตอบได้มากกว่า 1 ข้อ ตามความเป็นจริง)

    4.1 ☐ เคยเรียนแล้วในหมวดวิชาการศึกษาทั่วไป กลุ่มวิชาภาษาอังกฤษเพื่อการสื่อสาร ได้แก่วิชาใด

              ☐ ภาษาอังกฤษเพื่อการสื่อสารและการสืบค้น

              ☐ ภาษาอังกฤษเพื่อการสื่อสารและทักษะการเรียน

    4.2 ☐ กำลังเรียนในหมวดวิชาวิชาการศึกษาทั่วไป กลุ่มวิชาภาษาอังกฤษเพื่อการสื่อสาร ได้แก่วิชาใด

              ☐ ภาษาอังกฤษเพื่อการสื่อสารและการสืบค้น

              ☐ ภาษาอังกฤษเพื่อการสื่อสารและทักษะการเรียน

    4.3 ☐ ไม่เคยเรียนมาก่อนทั้งสองรายวิชา

    5. ภาษาอังกฤษเป็นวิชาที่ ...... (ตอบได้มากกว่า 1 ข้อ)

              ☐ ยาก ☐ ง่าย ☐ น่าสนใจ ☐ น่าเบื่อ

              ☐ มีประโยชน์ ☐ ไม่มีประโยชน์ ☐ อื่นๆ (โปรดระบุ) ....

    6. โปรดประเมินความรู้/ความสามารถภาษาอังกฤษโดยทั่วไปของตัวนักศึกษาเองว่าอยู่ในระดับใด

              ☐ น้อย ☐ ปานกลาง ☐ ดี/ดีมาก

ตอนที่ 2 ระดับการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษของนักศึกษา

       "เป็นประจำ/เกือบเป็นประจำ" หมายความว่า นักศึกษาใช้กลวิธีในการเรียนคำศัพท์ภาษาอังกฤษสม่ำเสมอทุกวันหรือเกือบทุกวัน

       "บ่อยๆ" หมายความว่า นักศึกษาใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษ 3-4 วันต่อสัปดาห์

       "ในบางครั้ง"   หมายความว่า นักศึกษาใช้กลวิธีในการเรียนรู้คำศัพท์ภาษาอังกฤษ 1-2 วันต่อสัปดาห์

       "ไม่เคย"   หมายความว่า นักศึกษาไม่เคยใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษเลย

ข้อความ	ระดับการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษ			
	เป็นประจำ/ เกือบเป็น ประจำ	บ่อยๆ	บางครั้ง	ไม่เคย
(1) กลวิธีการหาความหมายคำศัพท์ภาษาอังกฤษ				
1.1 เดาความหมายคำศัพท์เป็นคำๆ				
1.2 เดาความหมายคำศัพท์จากข้อความหรือประโยคข้างเคียง				
1.3 เดาความหมายคำศัพท์จากชนิดของคำ (Word Classes) เช่น คำนาม สรรพนาม กริยา คุณศัพท์ วิเศษณ์ สันธาน เป็นต้น				
1.4 เดาความหมายคำศัพท์จากไวยากรณ์ของภาษา (grammatical structure of a sentence)				
1.5 เดาความหมายคำศัพท์จากการวิเคราะห์ โครงสร้างของคำ/ หน่วยคำเติม ได้แก่ อุปสรรค (prefixes) ปัจจัย (suffixes) รากศัพท์ (roots) เป็นต้น				
1.6 เดาความหมายคำศัพท์จากลักษณะทางด้านเสียง (aural features) เช่น เสียงหนักเบา เสียงสูงต่ำ การออกเสียงของคำ				
1.7 เดาความหมายคำศัพท์จากสถานการณ์จริงต่างๆ				
1.8 เดาความหมายคำศัพท์จากท่าทาง (gestures)				
1.9 ใช้พจนานุกรมอังกฤษ-อังกฤษ ในการหาความหมายคำศัพท์				
1.10 ใช้พจนานุกรมอังกฤษ-ไทย ในการหาความหมายคำศัพท์				
1.11 ใช้พจนานุกรมไทย-อังกฤษ ในการหาความหมายคำศัพท์				
1.12 ถามเพื่อน				
1.13 ถามอาจารย์ที่สอนภาษาอังกฤษ				

ข้อความ	ระดับการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษ			
	เป็นประจำ/ เกือบเป็น ประจำ	บ่อยๆ	บางครั้ง	ไม่เคย
1.14 ถามคนอื่นๆ เช่น บุคคลในครอบครัว ชาวต่างชาติ เจ้าของภาษา เป็นต้น				
อื่นๆ (โปรดระบุ..				
(2) กลวิธีการจำความหมายคำศัพท์ภาษาอังกฤษ 2.1 ท่องคำศัพท์เป็นคำๆ พร้อมกับความหมาย				
2.2 ท่องคำศัพท์ในรูปประโยค				
2.3 ท่องคำศัพท์เป็นหมวดหมู่ เช่น ศัพท์หมวดร่างกาย ศัพท์ หมวดวิชาเรียน ศัพท์หมวดพืชผัก-ผลไม้ ศัพท์ที่ออกเสียง พยัญชนะต้นหรือพยัญชนะท้ายเหมือนกัน เป็นต้น				
2.4 ท่องคำศัพท์แบบคำคล้องจองทางเสียง (rhymes)				
2.5 ฟังเพื่อน อาจารย์ที่สอนภาษาอังกฤษ หรือชาวต่างชาติ สนทนาภาษาอังกฤษ				
2.6 ใช้คำศัพท์ในการฝึกสนทนากับเพื่อน				
2.7 ใช้คำศัพท์ในการฝึกสนทนากับอาจารย์ที่สอนภาษาอังกฤษ หรือกับชาวต่างชาติ				
2.8 ร้องเพลงภาษาอังกฤษ				
2.9 อ่านทบทวนบทเรียนภาษาอังกฤษที่เรียนมาแล้ว				
2.10 พิจารณาจากหน่วยคำเติม เช่น อุปสรรค (prefixes) ปัจจัย (suffixes) และรากศัพท์ (roots)				
2.11 เขียนคำศัพท์พร้อมความหมายและประโยคตัวอย่างการใช้ คำศัพท์ภาษาอังกฤษแล้วบันทึกไว้				
2.12 เขียนคำศัพท์พร้อมความหมายใส่กระดาษติดไว้ที่ผนังในห้อง				
2.13 เขียนจัดหมวดหมู่คำศัพท์ที่มีความหมายเหมือนกันและ ต่างกัน				
2.14 เขียนจัดหมวดหมู่คำศัพท์ที่พ้องรูป พ้องเสียง				

ข้อความ	ระดับการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษ			
	เป็นประจำ/ เกือบเป็น ประจำ	บ่อยๆ	บางครั้ง	ไม่เคย
2.15 ทำการบ้าน หรือแบบฝึกหัดภาษาอังกฤษท้ายบทเรียน				
2.16 ใช้คำศัพท์ที่เรียนรู้ความหมายแล้วมาใช้ในการฝึกเขียนเป็น ประโยค				
2.17 ใช้รูปภาพในการโยงเข้าหาคำศัพท์ภาษาอังกฤษ				
2.18 ดูของจริงรอบๆ ตัวแล้วโยงเข้าหาคำศัพท์ภาษาอังกฤษ				
2.19 เชื่อมโยงคำศัพท์ใหม่เข้ากับคำศัพท์เดิม				
2.20 เชื่อมโยงคำศัพท์เข้ากับประสบการณ์เดิม				
2.21 ใช้แผนภูมิทางด้านความหมาย (semantic maps)				
2.22 อื่นๆ (โปรดระบุ)...				
(3) กลวิธีการเพิ่มพูนคำศัพท์ภาษาอังกฤษ 3.1 ฝึกการฟัง เช่น ฟังอาจารย์ที่สอนภาษาอังกฤษ ฟังเพื่อน สนทนา ฟังการรายงาน ฟังบทสนทนาในแถบบันทึกเสียง เป็นต้น				
3.2 ฟังเพลงภาษาอังกฤษ				
3.3 ฟังรายการวิทยุที่เกี่ยวกับภาษาอังกฤษ				
3.4 สนทนาเป็นภาษาอังกฤษกับเพื่อน				
3.5 สนทนาเป็นภาษาอังกฤษกับอาจารย์ที่สอนภาษาอังกฤษ				
3.6 สนทนาเป็นภาษาอังกฤษกับชาวต่างชาติ				
3.7 สนทนาเป็นภาษาอังกฤษกับชาวต่างชาติผ่านทางอินเทอร์เน็ต (chat)				
3.8 อ่านเรื่องราวต่างๆ จากสิ่งพิมพ์ภาษาอังกฤษ ได้แก่ เอกสาร ตำรา หนังสือพิมพ์ นิตยสาร จดหมายข่าว แผ่นพับ ฯลฯ				
3.9 อ่านหนังสือบทสนทนาอังกฤษ-ไทยในสถานการณ์ต่างๆ				
3.10 ศึกษาศัพท์ภาษาอังกฤษจากสิ่งรอบตัว ได้แก่ ป้ายโฆษณา ป้ายประชาสัมพันธ์ ป้ายบอกชื่อหน่วยงาน ป้ายจราจร				

ข้อความ	ระดับการใช้กลวิธีการเรียนรู้คำศัพท์ภาษาอังกฤษ			
	เป็นประจำ/เกือบเป็นประจำ	บ่อยๆ	บางครั้ง	ไม่เคย
3.11 ดูรายการทีวีที่เกี่ยวกับภาษาอังกฤษ ได้แก่ ข่าว สารคดีต่างๆ รายการการเรียนภาษาอังกฤษ ฯลฯ				
3.12 ดูภาพยนตร์เสียงในฟิล์ม (soundtrack)				
3.13 ค้นคว้าหาข้อมูลเกี่ยวกับการเรียนภาษาอังกฤษผ่านทางอินเทอร์เน็ต				
3.14 ฝึกใช้ดิกชันนารี				
3.15 ฝึกแปลข้อความ/เรื่องราวต่างๆ จากภาษาอังกฤษเป็นภาษาไทย และ/หรือจากภาษาไทยเป็นภาษาอังกฤษ				
3.16 ทำแบบฝึกหัดพิเศษจากแหล่งข้อมูลอื่นๆ เช่น หนังสือ หนังสือพิมพ์ หรือ อินเทอร์เน็ต				
สร้างเครือข่ายของคำ (a word-network)				
เล่นเกมภาษาอังกฤษ เช่น เกม Scrabble และ/หรือ Crossword puzzles เป็นต้น				
3.19 ไปฝึกงานหรือทำงานพิเศษ เช่นบริษัทการท่องเที่ยว โรงแรม				
3.20 อื่นๆ (โปรดระบุ)				

ขอขอบคุณในความร่วมมือ

APPENDIX 7

The Vocabulary Learning Strategy Questionnaire (The Translated Version)

Instructions: (1) There are two main parts of this questionnaire:

        Part 1: The Student's Personal Background

        Part 2: Strategies for Vocabulary Learning

    (2) Please response with a "✓" for choosing the answer

PART 1: The Student's Personal Background

Please provide the information about yourself by choosing the choices given (✓) or write the response where necessary:

1. Gender   ○ Male   ○ Female

2. I am studying in   ○ Regular programme ○ Part-time programme

3. My major is ....…........................ **Year of Study**.................
   Faculty of .... **Name of RU** ....

4. About General Education (GE): Fundamental English for Communication
   (You can choose more than one)

       4.1 I completed studying Fundamental English for Communication:
           ○ 1500102   ○ 1500103

       4.2 I am studying Fundamental English for Communication in this
          semester:
           ○ 1500102   ○ 1500103

       4.3 I have never studied Fundamental English for Communication
           ○ 1500102   ○ 1500103

5. I think English is : (You can choose more than one)
        ○ easy   ○ difficult
        ○ interesting   ○ useful
        ○ boring   ○ useless
        ○ others (please specify) ……………………………….….

6. My English ability is:
        ○ poor/weak   ○ moderate   ○ good/very good

PART 2: Questions about Vocabulary Learning Strategies

Instructions: The Vocabulary Learning Strategy Questionnaire (VLSQ) is designed to gather information about how you go about English vocabulary learning. In the statement below, you will find statements related to various English vocabulary learning strategies. Please read each statement carefully, and then mark your response with a "✓" in the corresponding space provided that tells how frequent you employ each vocabulary learning strategy. Your answers will be judged to be neither right nor wrong, and your answers will not at all affect your English course at your university.

    Levels of Your Own Vocabulary Learning Strategy Use

  "Always/almost always" means that you always or almost always use the strategy
             which is described in the statement
  "Often" means that you use the strategy which is described more than half the time
  "Sometimes" means that you use the strategy which is described in the statement less
          than half of the time
  "Never" means that you never use the strategy which is described in the statement

Example:

Statements	Levels of Your Own Vocabulary Learning Strategy Use			
	Always/ Almost always	**Often**	**Sometimes**	**Never**
(1) Strategies to Discover the Meaning of New Vocabulary Items: 1.1 Guess word's meaning of a single word to discover the meaning of new vocabulary items			✓	
1.2 Guess the meaning of vocabulary items from contexts	✓			
1.3 Guess word's meaning from word classes, such as nouns, verbs, adjectives, adverbs, to discover the meaning of new vocabulary items		✓		

THE VOCABULARY LEARNING STRATEGY QUESTIONNAIRE

Statements	Levels of Your Own Vocabulary Learning Strategy Use			
	Always/ Almost always	Often	Sometimes	Never
(1) Strategies to Discover the Meaning of New Vocabulary Items:				
1.1 Guess the meaning from a single vocabulary item to discover the meaning of new vocabulary items				
1.2 Guess the meaning from contexts to discover the meaning of new vocabulary items				
1.3 Guess the meaning from word classes, such as nouns, verbs, adjectives, adverbs, to discover the meaning of new vocabulary items				
1.3 Guess the meaning from grammatical structure of a sentence to discover the meaning of new vocabulary items				
1.5 Guess the meaning by analysing the structure of words (prefixes, roots, and suffixes) to discover the meaning of new vocabulary items				
1.6 Guess the meaning from aural features, such as stress, intonation, pronunciation, to discover the meaning of new vocabulary items				
1.7 Guess he meaning from real situations to discover the meaning of new vocabulary items				
1.8 Guess the meaning from gestures to discover the meaning of new vocabulary items				
1.9 Use an English-English dictionary to discover the meaning of new vocabulary items				
1.10 Use an English-Thai dictionary to discover the meaning of new vocabulary items				
1.11 Use a Thai-English dictionary to discover the meaning of new vocabulary items				
1.12 Ask classmates or friends to discover the meaning of new vocabulary items				
1.13 Ask teachers of English to discover the meaning of new vocabulary items				
1.14 Ask other people, such as members of one's family, native speakers of English, to discover the meaning of new vocabulary items				
1.15 Others (Pleas specify)				

Statements	Levels of Your Own Vocabulary Learning Strategy Use			
	Always/ Almost always	**Often**	**Sometimes**	**Never**
(2) Strategies to Retain the Knowledge of Newly-Learned Vocabulary Items:				
2.1 Say a single vocabulary item with its meanings repeatedly to retain the knowledge of newly-learned vocabulary items				
2.2 Say vocabulary items in sentences repeatedly to retain the knowledge of newly-learned vocabulary items				
2.3 say vocabulary items with their lexical sets repeatedly to retain the knowledge of newly-learned vocabulary items				
2.4 Say vocabulary items in rhymes repeatedly to retain the knowledge of newly-learned vocabulary items				
2.5 Listen an English conversation of other people (classmates, friends, teachers, native speakers of English) to retain the knowledge of newly-learned vocabulary items				
2.6 Use vocabulary items to converse with classmates or friends				
2.7 Use vocabulary items to converse with teachers of English to retain the knowledge of newly-learned vocabulary items				
2.8 Sing English songs to retain the knowledge of newly-learned vocabulary items				
2.9 Review previous English lessons to retain the knowledge of newly-learned vocabulary items				
2.10 Look at words' affixes (prefixes and suffixes) to retain the knowledge of newly-learned vocabulary items				
2.11 Make a vocabulary list with meanings and examples in one's notebook to retain the knowledge of newly-learned vocabulary items				
2.12 Write vocabulary items with meanings on papers and stick them in one's bedroom to retain the knowledge of newly-learned vocabulary items				
2.13 Group vocabulary items according to the synonyms and antonyms to retain the knowledge of newly-learned vocabulary items				

Statements	Levels of Your Own Vocabulary Learning Strategy Use			
	Always/ Almost always	Often	Sometimes	Never
2.14 Group vocabulary items according to the Similarity of meaning, pronunciation and spelling to retain the knowledge of newly-learned vocabulary items				
2.15 Do English exercises after class to retain the knowledge of newly-learned vocabulary items				
2.16 Use newly-learned vocabulary items to practise writing in sentences to retain the knowledge of newly-learned vocabulary items				
2.17 Associate pictures to vocabulary items to retain the knowledge of newly-learned vocabulary items				
2.18 Look at real objects and associate them with vocabulary items to retain the knowledge of newly-learned vocabulary items				
2.19 Associate newly-learned vocabulary items with previously-learned ones to retain the knowledge of newly-learned vocabulary items				
2.20 Connect newly-learned vocabulary items to one's previous learning experience to retain the knowledge of newly-learned vocabulary items				
2.21 Use semantic maps to retain the knowledge of newly-learned vocabulary items				

2.22 Others (Pleas specify)

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(3) Strategies to Expand the Knowledge of New Vocabulary Items:				
3.1 Practise listening to English lectures, presentation, or cassettes of conversation to expand the knowledge of vocabulary				
3.2 Listen to English songs to expand the knowledge of vocabulary				
3.3 Listen to English radio programmes to expand one's knowledge of vocabulary				
3.4 Converse in English with classmates and friends in English to expand the knowledge of vocabulary				

	Levels of Your Own Vocabulary Learning Strategy Use			
	Always/ Almost always	Often	Sometimes	Never
3.5 Converse with teachers of English in English to expand the knowledge of vocabulary				
3.6 Converse with foreigners in English to expand the knowledge of vocabulary				
3.7 Converse with foreigners in English through the Internet to expand the knowledge of vocabulary				
3.8 Read English articles from different sources, such as texts, newspaper, brochures, leaflets, to expand the knowledge of vocabulary				
3.9 Read a book of English-Thai conversation in various situations to expand one's knowledge of vocabulary				
3.10 Study vocabulary items from advertisements, public relations notices, traffic signs, etc. to expand the knowledge of vocabulary				
3.11 Watch English programme channels on TV to expand the knowledge of vocabulary				
3.12 Watch an English-speaking films with subtitles to expand the knowledge of vocabulary				
3.13 Search for English information through the Internet to expand the knowledge of vocabulary				
3.14 Practise using a dictionary regularly to expand the knowledge of vocabulary				
3.15 Practise translating articles from English to Thai, or from Thai to English to expand the knowledge of vocabulary				
3.16 Do extra English exercises from other sources, such as texts, newspapers, Internets, to expand the knowledge of vocabulary				
3.17 Build a word-network to expand the knowledge of Vocabulary				
3.18 Play English games, such as scrabble, crossword puzzles, to expand the knowledge of vocabulary				
3.19 Take an extra job at tour offices, hotels, etc. to expand the knowledge of vocabulary				
3.20 Others (Please specify)				

Thank you very much for your co-operation

APPENDIX 9

Test Item Improvement and Refinement

- **PART II:**

2.1) Vocabulary Items for Showing Relationship between Ideas

Number 14: John wants to marry Jane. However, his parents do not like her.

Note: This item is rather difficult (0.19). This might be because it did not present in rich context, so the researcher decided to change it to:

John loves Jane truly. <u>However,</u> he cannot marry her because his parents do not like her.

- **PART III:**

3.1) Vocabulary Items in Sentence Context

3.1.1 Multiple-choice

Number 32: I studied hard, and <u>gradually</u> I learned a new language. *(Improved)*

Note: This item has low power of discrimination (0.13), and cannot discriminate amongst the good and weak testees, so the researcher decided to change it to:

I studied hard, and <u>finally</u> I learned a new language.

     a. slowly   b. quickly
     c. fast   d. at the end *(Improved = lastly)*

Number 33: John <u>exhibited</u> his new painting to us. *(Improved)*

Note: This item has low power of discrimination (0.13), and cannot discriminate amongst the good and weak testees, so the researcher decided to change it to:

John wanted us to see his new paintings, so he <u>exhibited</u> them to us.

3.1.2 Matching

Number 38: Are there any <u>places</u> left on the bus? *(Improved)*

Note: This item is rather difficult (0.19). The researcher decided to change the alternative B provided in the list from 'room' to *'seats'*.

3.2) Vocabulary Items in Paragraph Context

Number 45: The word <u>suffer</u> mean …………….

Note: This item has low power of discrimination (0.10), and cannot discriminate amongst the good and weak testees. The researcher decided to choose another vocabulary item to test the testees' vocabulary, so the item tested was changed to:

The word <u>habit</u> means …………………………

> *a. something that one wants to stop doing*
> *b. danger of doing something*
> *c. something one never does in his/her life*
> *d. something one does regularly*

Number 46: The word <u>victim</u> means ………………..

Note: This item has low power of discrimination (0.14), and cannot discriminate amongst the good and weak testees, so the researcher decided to improve its new alternatives as:

> *a. a person who suffers because of something bad*
> *b. one who helps other people*
> *c. a person who is out of danger*
> *d. a person who repeats the action*

3.3) Vocabulary Items in Passage Context

Numbers 48-57:

Note: This section is very difficult (0.11). One way to improve it is to improve and change or add some more alternatives, so the researcher decided to improve this section as:

A. grow fruit	B. dairy production *(Improved=production)*
C. *meat (Added)*	D. vegetables
E. pick the fruit and harvest *(Improved= harvest)*	F. grow
G. *celebrate (Added)*	H. raise
I. water	J. *destroy (Added)*
K. grains	L. agriculture *(Improved= farming)*

Numbers 58-67:

Note: Number 59 in this section is rather difficult (0.16). One way to improve it is to change and move some alternatives, so the researcher decided to improve the alternatives in this section as:

A. rich
B. *gigantic (Improved= very big)*
C. a bit of shock
D. money
E. frightened
F. trouble *(Changed =career)*
G. butcher's *(Moved to the alternative L)*
H. told me *(Moved to the alternative K)*
I. embarrassed *(Changed=without any doubt)*
J. met *(Changed= poor)*
K. friends *(Moved to the alternative H)*
L. children *(Moved to the alternative G)*
M. meat *(Discarded)*

Number 70: The word <u>relaxed</u> means ………………….

Note: This item has low power of discrimination (0.13), and cannot discriminate amongst the good and weak testees, so the researcher decided to change its alternatives as:

a. excited
b. clam
c. uncomfortable *(Changed = worried)*
d. comfortable

CURRICULUM VITAE

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