

**THE DEVELOPMENT OF CALL ENGLISH LESSONS
FOR NURSING SCIENCE STUDENTS STUDENTS**

Suphatra Sucharitrak



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กลวิธีการทำความเข้าใจเนื้อหาในการอ่านภาษาอังกฤษโดยนักศึกษาระดับ
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มหาวิทยาลัยเทคโนโลยีสุรนารี

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ENGLISH READING TEXT COMPREHENSION STRATEGIES
BY EFL UNIVERSITY STUDENTS

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Thesis Examining Committee

(Dr. Dhirawit Pinyonathagarn)

Chairperson

(Assoc. Prof. Dr. Channarong Intaraprasert)

Member (Thesis Advisor)

(Asst. Prof. Dr. Nawamin Prachanant)

Member

(Dr. Peerasak Siriyothin)

Member

(Dr. Suksan Suppatseree)

Member

(Dr. Wut Dankittikul)

(Dr. Peerasak Siriyothin)

Acting Vice Rector for Academic Affairs Dean of Institute of Social Technology

หฟาง โหลว : กลวิธีการทำความเข้าใจเนื้อหาในการอ่านภาษาอังกฤษโดยนักศึกษาระดับมหาวิทยาลัยที่เรียนภาษาอังกฤษเป็นภาษาต่างประเทศ (ENGLISH READING TEXT COMPREHENSION STRATEGIES BY EFL UNIVERSITY STUDENTS)

อาจารย์ที่ปรึกษา : รองศาสตราจารย์ ดร.ชาญณรงค์ อินทรประเสริฐ, 280 หน้า

การใช้กลวิธีการอ่านเป็นองค์ประกอบหนึ่งที่มีส่วนส่งเสริมให้เกิดความสำเร็จในการเข้าใจการอ่านเนื้อหาที่เป็นภาษาอังกฤษ นอกจากนั้น กลวิธีการอ่านมีความสำคัญต่อผู้อ่านในการสร้างความหมายอย่างมีประสิทธิภาพจากเนื้อหาที่อ่าน งานวิจัยนี้มีจุดประสงค์เพื่อศึกษาการใช้กลวิธีการอ่านของนักศึกษามหาวิทยาลัยในภาคตะวันออกเฉียงใต้ของประเทศสาธารณรัฐประชาชนจีน จำนวน 1,368 คน และความสัมพันธ์ระหว่างการใช้กลวิธีการอ่านกับเพศนักศึกษา (ชาย, หญิง), สาขาวิชาที่เรียน (กลุ่มสาขาวิชาด้านมนุษยศาสตร์และสังคมศาสตร์ และกลุ่มสาขาวิชาด้านวิทยาศาสตร์), ระดับความสามารถในการอ่าน (สูง, ปานกลาง, และต่ำ), เพศอาจารย์ (ชาย, หญิง), ประเภทของมหาวิทยาลัย (มหาวิทยาลัยภายใต้โครงการ 211 และมหาวิทยาลัยที่ไม่อยู่ภายใต้โครงการ 211), และการอ่านนอกเหนือจากบทเรียนของนักศึกษา (ปฏิบัติบ่อยครั้ง และแทบจะไม่ หรือไม่เคยปฏิบัติเลย)

นอกจากนั้น งานวิจัยนี้ยังมุ่งเน้นที่จะศึกษาตัวแปรที่สำคัญที่เกี่ยวกับความถี่ของการใช้กลวิธีการอ่านของนักศึกษาในระดับต่างๆ โดยการอ้างอิง 6 ตัวแปร อนึ่ง เพื่อการอธิบายเหตุผลว่าทำไมนักศึกษาจึงรายงานการใช้กลวิธีบางอย่างบ่อย บางอย่างไม่บ่อย ผู้วิจัยคัดเลือกนักศึกษาจำนวน 40 คน โดยการสุ่มตัวอย่างแบบเฉพาะเจาะจงจากผู้ตอบแบบสอบถามเพื่อเข้ารับการสัมภาษณ์

แบบสอบถามและการสัมภาษณ์ถึงโครงสร้างเป็นวิธีการหลักที่นำมาใช้เพื่อเก็บข้อมูลสำหรับงานวิจัยในครั้งนี้ ซึ่งแบ่งเป็น 2 ช่วง คือ 1) ทดสอบความเข้าใจการอ่านและตอบแบบสอบถาม และ 2) การสัมภาษณ์ ค่าความคงที่ภายในของประมาณการความน่าเชื่อถือของแบบสอบถามนี้ อยู่ที่ระดับ .94 ข้อมูลที่ได้จากแบบสอบถามนำมาวิเคราะห์โดยใช้สถิติเชิงพรรณนา เพื่อพรรณนาระดับความถี่ของการใช้กลวิธีการอ่าน ในขณะที่การวิเคราะห์ความแปรปรวน (ANOVA) และการทดสอบไค – สแควร์ (Chi – square test) นำมาใช้เป็นวิธีการทางสถิติหลักเพื่อหาความสัมพันธ์ระหว่างการใช้กลวิธีการอ่านและตัวแปร 6 ตัว ข้อมูลที่ได้จากการสัมภาษณ์นำมาวิเคราะห์ในเชิงคุณภาพ

ผลการศึกษาและวิเคราะห์ข้อมูลแสดงให้เห็นว่า นักศึกษาที่ศึกษาในระดับมหาวิทยาลัยในภาคตะวันออกเฉียงใต้ของประเทศสาธารณรัฐประชาชนจีน รายงานการใช้กลวิธีการอ่านเพื่อเข้าใจเนื้อหาภาษาอังกฤษ อยู่ในระดับปานกลาง นอกจากนั้นยังพบตัวแปรสำคัญในส่วนที่เกี่ยวกับเพศ,

สาขาวิชาที่ศึกษา, ระดับความสามารถในการอ่าน และการอ่านนอกบทเรียนมีความแตกต่างอย่างมีนัยสำคัญ นั่นคือ มีความแตกต่างในการใช้กลวิธีโดยภาพรวม, การใช้กลวิธีในการอ่านในกลุ่ม SBS, SWS และ SAS, และการใช้กลวิธีในการอ่านในระดับกลวิธีเดียว เพศของอาจารย์และประเภทของมหาวิทยาลัยไม่มีความสัมพันธ์ต่อการใช้กลวิธีในการอ่านของนักศึกษา เหตุผลที่นักศึกษารายงานการใช้กลวิธีบางอย่างบ่อยและไม่บ่อย ซึ่งได้มาจากข้อมูลการสัมภาษณ์ ทั้งนี้ ผู้วิจัยได้ให้ข้อเสนอแนะที่ได้รับจากผลของการวิจัยที่จะนำมาประยุกต์ใช้สำหรับการเรียนการสอนภาษาอังกฤษ และข้อจำกัดของการศึกษาวิจัยครั้งนี้ตามลำดับ



HONGFANG LOU : ENGLISH READING TEXT COMPREHENSION
STRATEGIES BY EFL UNIVERSITY STUDENTS. THESIS ADVISOR :
ASSOC. PROF. DR. CHANNARONG INTARAPRASERT, Ph.D., 280 PP.

READING STRATEGIES/ EFL UNIVERSITY STUDENTS

The increased strategy use is one of the factors that contribute to the success of English reading comprehension. In addition, strategic reading is significant for a reader to construct meaning effectively from written texts. The present investigation was conducted to investigate the reading strategy employment by 1,368 university students in Southwest China, as well as the relationship between reading strategy use and students' gender (male and female), fields of study (art-oriented and science-oriented), levels of reading proficiency (high, moderate and low), teachers' gender (male and female), types of university (211 Project university and non-211 Project university), and students' extensive reading (frequent and infrequent).

In addition, it has been intended to examine the patterns of significant variation in the frequency of students' report of reading strategy use at different levels with reference to the six variables. Further, in order to explore, describe and explain the reasons for why students reported employing certain strategies frequently and certain strategies infrequently, the researcher purposively selected 40 students from the questionnaire respondents to participate in the semi-structured interviews.

Questionnaire and semi-structured interview were the main methods used to collect data for the present investigation, i.e. Phase 1) conducting reading comprehension test and administering questionnaires; and Phase 2) conducting semi-structured interviews. The internal consistency of the reliability estimate of the

reading strategy questionnaire was .94. The data obtained through the questionnaires were analysed quantitatively with the assistance of SPSS program, in which the simple descriptive statistics were used to describe the levels of frequency of reading strategy use, while the Analysis of Variance (ANOVA) and the Chi-square tests were used as the main statistical methods to seek the relationship between the frequency of reading strategy use and the six variables. Moreover, the data obtained through the semi-structured interview were analysed qualitatively.

The results show that as a whole, Chinese university students reported employing reading strategies at the moderate level to comprehend English texts. In addition, significant variations were found in relation to students' gender, fields of study, levels of reading proficiency, and extensive reading at the three different levels of reading strategy use, i.e. variations in the overall strategy use, use of strategies in the SBS, SWS, and SAS categories, and use of individual reading strategies. Teachers' gender and types of university were not found to be related to students' choices of reading strategy use. The reasons for why students reported employing certain strategies frequently and certain strategies infrequently emerged from the interview data. Based on the research findings, the researcher presents discussion in relation to the investigated variables, pedagogical implications for teaching and learning English reading in the future, and limitations of the present study respectively.

School of English

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Student's Signature _____

Advisor's Signature _____

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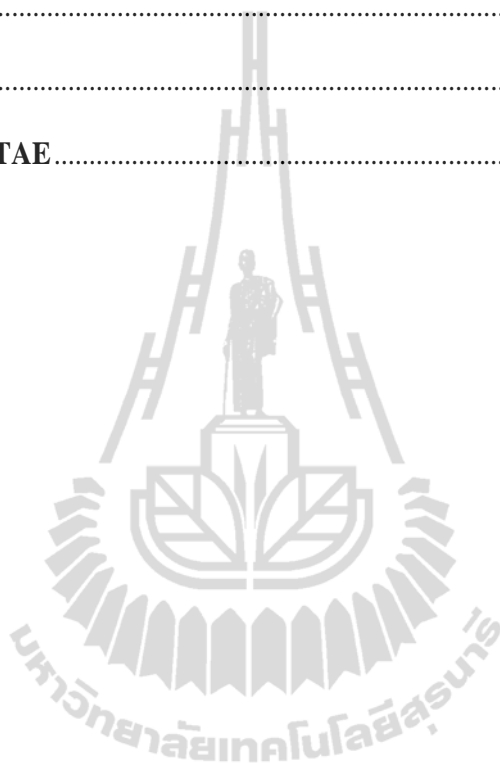
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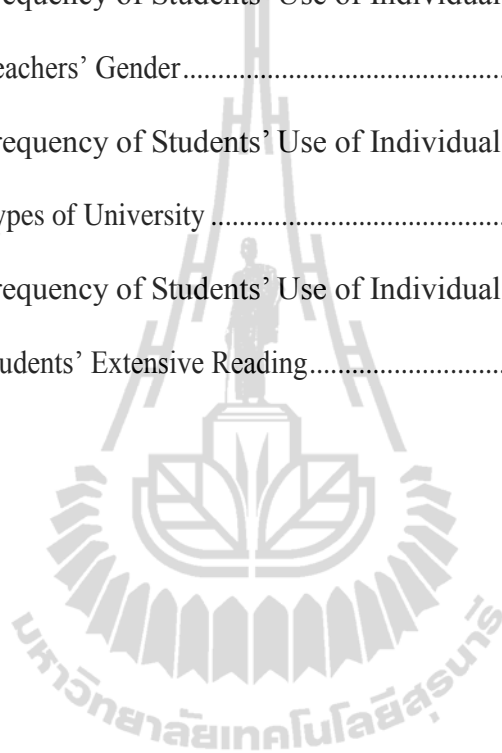
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LIST OF ABBREVIATIONS

| | |
|-------|--------------------------------------------|
| ANOVA | Analysis of Variance |
| CET | College English Test |
| CET-4 | College English Test Band 4 |
| ELT | English for language teaching |
| EFL | English as a foreign language |
| L2 | Second language |
| FL | Foreign language |
| ESL | English as a second language |
| RCTE | Reading Comprehension Test in English |
| SPSS | Statistical Package for Social Science |
| SQER | Strategy Questionnaire for English Reading |
| SBS | Strategies for the before-reading stage |
| SWS | Strategies for the while-reading stage |
| SAS | Strategies for the after-reading stage |

CHAPTER 1

BACKGROUND TO STUDY

The present study has been intended to investigate reading strategy employment by university students in Southwest China, i.e. Sichuan, Guizhou and Yunnan Provinces, when they read English texts inside or outside classroom settings. As part of the whole study, this chapter aims to provide an overall picture about the research background. The issues of the learners who study English as a foreign language (EFL) related to English reading will also be discussed in light of highlighting the exploration for research questions of the present study. This chapter also includes the objectives and significance of the study. In order to help readers understand certain terms used in this study, a brief description of the terms will be defined as well.

1.1 Introduction

Of all the questions posed in the field of second language acquisition, one of the most difficult to answer continues to be why certain people are better language learners than others. Previous research has demonstrated that experienced language learners are more successful in acquiring languages (Mägiste, 1984; Nation and McLaughlin, 1986; McLaughlin and Nayak, 1989; and Nayak, Hansen, Krueger and McLaughlin, 1990). Learning strategy is a choice the learner makes while

learning or using the second language and it exerts a noticeable influence on learning (Oxford, 1990).

Research into the learning strategy field began in the 1970s. In most of the research, the primary concern has been on “identifying what good language learners report they do to learn a second or foreign language, or, in some cases, are observed doing while learning a second or foreign language” (Rubin, 1975: 73). After many years of research and discussion, researchers such as Stern (1975), Rubin (1981), Oxford (1990), O’Malley and Chamot (1990), Ellis (1994) and Cohen (1998) have come to a conclusion that learners’ sequences of second language acquisition are closely related to many factors, such as learners’ learning styles, age, intelligence, beliefs, language competences, strategy use and other personality-related variables.

The increased strategy use is one of the factors that contribute to the success of language learning. Reading as one of the important skills in English learning has also reached heightened dimensions since 1970s. Furthermore, the explosion of research in second language reading has begun to focus on readers’ strategies. Research on reading strategies has experienced tremendous growth and many researchers of the field have come to the most enduring conclusion that a variety of reading strategies have the potential to facilitate reading comprehension (Hosenfeld, 1977; Block, 1986, 1992; Sarig, 1987; Barnett, 1988; Carrell, 1989a; Raymond, 1993; Sheorey and Mokhtari, 2001; Sariçoban, 2002; Anderson, 2003; Mokhtari and Reichard, 2004; Ahmad and Asraf, 2004; and Yigister, Sariçoban and Gürses, 2005).

Reading strategies are of interest for what they reveal about the ways readers manage their interaction with written texts and how these strategies are related to the text comprehension and strategy use is the hallmark of effective reading (Singhal, 2001).

According to Brown (1994), strategies are the specific ‘attacks’ that learners employ when faced with a problem. More specifically, reading strategies are the comprehension processes that readers use in order to make sense of what they read. This process may involve, for example, skimming, scanning, guessing, recognizing cognates and word families, reading for meaning, predicting, activating general knowledge, making inferences, following references, and separating main ideas from supporting ideas (Barnett, 1988). It has been found that effective readers are more aware of strategy use than less effective readers (Mokhtari and Reichard, 2004). This suggests that strategic reading is significant for a reader to construct meaning effectively from written texts.

In China, English is taught as a foreign language, so reading is officially acknowledged as a prior language skill, with its importance annually growing in tertiary institutions (Lü and Tu, 1999; Liu, D. D., 2002). However, English learners in China have learned English for many years, they still cannot read effectively or fully understand what the texts transfer. Many students come to university without successful reading strategies (Lü and Tu, 1999; Liu, D.D., 2002; Meng, 2004). They have a limited choice of reading strategies, which cannot meet the requirements of English reading in university (Yan, 2003). Furthermore, they also fail to adjust reading strategies

according to different demands, purposes and genres of the reading tasks. Thus, there is a great need to inform them of English reading strategies and raise their awareness to use the strategies in their reading process (Lü and Tu, 1999; Liu, D.D., 2002; Meng, 2004). If students could read the materials efficiently, it would do great help to broaden their cultural vision, enrich their professional knowledge, and bring them educational advantages, which would be beneficial for their whole life learning (Meng, 2004; Liu, D.D., 2002; Liu, Y. C., 2002; Lü and Tu, 1999; Ma, 1997).

Through an initial review of related works on reading strategies in China, it appears that many research works have been conducted in a university context (Lü and Tu, 1999; Liu, D. D., 2002; Liu, Y. C., 2002; Ma, 1997; Meng, 2004). However, to date, there is no such research work carried out with students at the universities in Southwest China. Thus, the researcher decided to examine reading strategies employed by university students in this region of the country. The purposes of the present research were to investigate reading strategy employment by university students in Southwest China, the frequency of their reading strategy use, as well as the relationship between reading strategy use and students' gender (male and female), fields of study (art-oriented and science oriented), levels of reading proficiency (high, moderate, and low), teachers' gender (male and female), types of university (211 Project university and non-211 Project university) and students' extensive reading (frequent and infrequent), and to explore the reasons for why students report employing certain strategies frequently and certain strategies infrequently.

1.2 English and English Reading in Chinese Universities

English in the late 1970s was not a compulsory subject in most of the secondary high schools and colleges (Tang, 1983). With the fast development of politics and economics in China since the 1980s, contact with different global areas is increasingly needed. English has thus become important all over the country. Not only has the language been regarded as a valuable resource for China's modernization drive but it has also had a great impact on Chinese people's pursuit of personal welfare (Cortazzi and Jin, 1996; Ross, 1992).

With a view to keeping up with the new developments of higher education in China, deepening teaching reform, improving teaching quality, and meeting the needs of the country and society for qualified personnel in the new era, new college curriculum requirements have been drawn up to provide colleges and universities with the guidelines for English instruction to non-English major students (College English Curriculum Requirements, 2007).

College English is an integral part of higher education learning as well as a compulsory basic course for undergraduate students. The objective of College English is to develop students' ability to use English, so that in their future studies and careers as well as social interactions they will be able to apply English effectively, and at the same time enhance their ability to study independently and improve their general cultural awareness so as to meet the needs of China's social development and international exchanges (College English Curriculum Requirements, 2007).

According to the College English Curriculum Requirements (2007), the requirements for undergraduate College English teaching are set at three levels, i.e., basic requirements, intermediate requirements, and higher requirements. Chinese university students are required to attain one of the three levels of requirements after studying and practicing English at school. The basic requirements are the minimum level that all the university students have to reach before graduation. Intermediate and advanced requirements are recommended for those colleges and universities which have more favorable conditions.

In accordance with the present research, the researcher extracts the requirements from the College English Curriculum Requirements (2007) for reading only in order to provide clear review related to the study to the readers. The three levels of requirements for reading are set as follows:

1) Basic requirements

Students should generally be able to read English texts on general topics at a speed of 70 words per minute. With longer yet less difficult texts, the reading speed should be 100 words per minute. Students should be able to do skimming and scanning. With the help of dictionaries, they should be able to read textbooks in their areas of specialty, and newspaper and magazine texts on familiar topics, grasping the main ideas and understanding major facts and relevant details. They should be able to understand texts of practical styles commonly used in work and daily life. They are expected to be able to employ effective reading strategies while reading.

2) Intermediate requirements

Students should generally be able to read essays on general topics in popular newspapers and magazines published in English-speaking countries at a speed of 70 to 90 words per minute. With longer texts for fast reading, the reading speed should be 120 words per minute. Students should be able to skim or scan reading materials. When reading summary literature in their areas of specialty, students should be able to get a correct understanding of the main ideas, major facts and relevant details.

3) Advanced requirements

Students should be able to read rather difficult texts, and understand their main ideas and details. They should be able to read English texts in newspapers and magazines published abroad, and to read English literature related to their areas of specialty without much difficulty.

In both basic requirement and advanced requirement, students are expected to be able to use effective reading strategies, such as skimming and scanning, etc to read English texts on general topics, newspaper and magazines. This indicates that strategic reading has been regarded as an important skill to meet the requirements at each level.

The above illustration indicates the rapid development of English in the current situations in China. It can be seen that English was not an important subject in

the past, but English has been given extreme significance and emphasis socially and academically with the fast development of China. English reading has especially been put on a significant position in Chinese universities.

1.3 Objectives of the Present Study

As mentioned in Section 1.1, the purposes of the present research were to investigate reading strategy employment by university students in Southwest China, the frequency of their reading strategy use, as well as the relationship between reading strategy use and students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university and students' extensive reading, and to explore the reasons for why students report employing certain strategies frequently and certain strategies infrequently.

Accordingly, the present investigation has examined six variables, which are students' gender (male and female), fields of study (art-oriented and science-oriented), levels of reading proficiency (high, moderate and low), teachers' gender (male and female), types of university (211 Project university and non-211 Project university) and students' extensive reading (frequent and infrequent). The specific objectives were:

1. To investigate the frequency and overall use of reading strategies by university students in Southwest China;
2. To examine whether the choices of reading strategy use varies significantly by students' gender, fields of study, levels of reading

proficiency, teachers' gender, types of university and students' extensive reading;

3. To examine the patterns of a significant variation in the frequency of students' report of reading strategy use at different levels with reference to the six variables, which are students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading;
4. To explore why students report employing certain reading strategies frequently and certain strategies infrequently.

1.4 Significance of the Study

Since the late 1970s, many researchers in the field of English as a foreign language have begun to recognize the importance of reading strategies used by EFL students in reading comprehension (Hosenfeld, 1977; Carrell, 1988; Wallace, 1992; Wen, 1996; Romero-Ghiretti, White, Berg, Quintana, Grayson and Weng, 2007). For most EFL learners, reading is undoubtedly an essential part in their learning (Carrell, 1988; Wallace, 1992; Wen, 1996; Romero-Ghiretti et al., 2007). Important as it is, and a lot of efforts have been made to improve reading, but the fruitless result in reading may make learners bored and puzzled. For most Chinese university students, this unsatisfactory status results largely from their unconscious ignorance of reading strategies, in contrast to their sufficient attention to any other factor concerning

reading proficiency (Wen, 1995, 1996; Ma, 1997; Lü and Tu, 1999; Liu, D. D., 2002; and Liu, Y. C., 2002).

To date, a small amount of empirical research has been conducted in relation to English reading strategy employment by university learners in China (Ma, 1997; Lü and Tu, 1999; Liu, D. D., 2002; Liu, Y. C., 2002), especially, each of which employs a small sample size, for example, there are only 45 participants in Ma's (1997) study, 96 participants in Lü and Tu's (1999) study, 43 participants in Liu, D. D's (2002) study and 60 participants in Liu, Y. C's (2002) study respectively. Among the empirical research, no research has been conducted to explore English reading strategy employment of university students in Southwest China, especially in a large-scaled empirical research. Consequently, the present study will be known as the first one to investigate English reading strategy employment among a large group of university students in Southwest China, whilst filling the gap in this research area.

Furthermore, through the extensive literature review, the researcher has found that only one or two variables, such as gender and reading proficiency have been taken into consideration by most researchers. Many other variables, such as the fields of study, teachers' gender, types of university and students' extensive reading which may also affect students reading strategy use have not been mentioned in the existing research. Thus, it is worth conducting the present research which is intended to investigate the relationship between English learners' reading strategy employment and six variables, i.e. the students' gender, fields of study, reading comprehension proficiency, teachers' gender, types of university, and students' extensive reading.

The findings of this study may emphasize the role of reading strategies and help the students improve their reading proficiency with using reading strategies effectively. For teachers, reading strategies have hardly been regarded as an indispensable part of instruction in English courses. Therefore, the results of research may provide useful implication for future reading instruction.

1.5 Terms Used in the Present Study

1.5.1 Reading Strategies

In the present research, reading strategies are defined as the methods, skills or behaviors that the university students employ for the textual comprehension or to solve the reading problems when reading English texts either inside or outside the classroom settings.

1.5.2 English Texts

In the present study, English texts generally refer to all types of English reading materials instead of referring to a particular type of reading materials.

1.5.3 University Students

University students in the present investigation refer to undergraduate students who are studying in the universities of Yunnan Province, Guizhou Province and Sichuan Province.

1.5.4 College English Test Band 4

College English Test Band 4 or CET-4 is a national standardized English proficiency test sponsored by Higher Education Department, the Ministry of

Education in China and the National College English Testing Committee. According to the Syllabus, the design of College English Test (CET) should strike a balance between linguistic knowledge and linguistic competence, between accuracy and fluency, between semantic level and discourse level, and between conceptual abilities and expressive abilities. It is concluded that CET is of high reliability (0.90) and validity (92% of the teacher subjects believe CET reflects students' actual English proficiency levels, 86% think the test contents are reasonable) (Yang and Weir, 1999).

1.5.5 Students' Reading Proficiency Levels

Students' reading proficiency refers to their language proficiency in English reading comprehension. The respondents' English reading proficiency levels have been rated as high, ranging from 1 to 20, moderate, ranging from 21 to 40, and low, ranging from 41 to 59, based on their reading test scores obtained through the researcher-constructed English reading comprehension test which will be discussed in detail in Section 3.6.3.

1.5.6 Fields of Study

Fields of study in the present research context refer to the students' majors, which include Law, Chinese Literature, English, Politics, Philosophy, Mathematics, Agriculture, Physics, or Chemistry, etc. In the present investigation, the university students' majors have been classified into art-oriented and science-oriented.

1.5.7 Extensive Reading

In the present research context, extensive reading refers to reading all kinds of English texts outside the classroom setting frequently and widely. The frequency of students' self-report of reading English texts outside the classroom setting has been consolidated as frequent group and infrequent group. Frequent group includes students who always (every day or almost every day) and often (3-4 times a week) read English reading texts outside the classroom setting, while infrequent group includes students who sometimes (1-2 times a week) and never read English reading texts outside the classroom setting at all.

1.5.8 Types of University

The types of university in the present research are classified into two types: 211 Project university and non-211 Project university (211 is pronounced as Two One One). The figure of 21 and 1 within 211 are from the abbreviation of the 21st century and approximate 100 universities respectively. China now has more than 1,700 standard institutions of higher education, and about 6 percent of them are 211 Project institutions. 211 Project schools take on the responsibility of training four-fifths of doctoral students, two-thirds of graduate students, half of students abroad and one-third of undergraduates. They offer 85% of the State's key subjects; hold 96 percent of the State's key laboratories; and utilize 70% of scientific research funding (Li, 2004).

1.6 The Outline of the Thesis

To achieve the research objectives, the researcher has provided the background to the study in Chapter One, with discussing the research background and the issues of the EFL learners related to English reading both in teaching and learning in the Chinese context. Finally, the objectives and significance of the present study are presented.

In Chapter Two, the researcher examines the related literature review of reading and the reading strategies, in which reading definitions, purpose of reading, the importance of reading, the process of reading, the theoretical framework of reading, the reading models, the classifications of reading strategies and research works into L2 reading strategy employment are also examined. The researcher puts more focus on describing the definitions of reading strategies, the classifications of reading strategies and research into L2 reading strategy employment.

Chapter Three presents the research questions, the framework for the present study, rationale for selecting and rejecting variables for the present investigation, the review of related instruments to reading strategies, and research methodology for the present study. It starts off with the discussion of the general principles of the research design applying to the present investigation and concentrating on the framework and rationale for selecting variables for the present investigation (students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading), as well as the main

research methods in the field of reading strategy (written questionnaires, think-aloud protocols and oral interviews). This is followed by the methodology for the present study, such as sampling and rationale for choice of subjects, the main methods for data collection (written questionnaires and semi-structured interviews) and analysis (ANOVA and the Chi-square tests).

Chapter 4 contains two main parts. The first part describes and discusses the results of the research findings of the present investigation in terms of students' overall strategy use, use of strategies in the three main categories, i.e. strategies for the before-reading stage (SBS), strategies for the while-reading stage (SWS), and strategies for the after-reading stage (SAS), and use of individual reading strategies. Comparisons of use of different reading strategies by 1,368 students based on the holistic mean scores of frequency use are made as well. The second part examines the relationship of reading strategy use by 1,368 Chinese university students in relation to the six variables, i.e. students' gender, fields of study, students' levels of reading proficiency, teachers' gender, types of university, and students' extensive reading. The results of the analysis obtained from the data by different statistical methods such as the Analysis of Variance (ANOVA) and the Chi-square tests are presented at three levels: overall strategy use, use of strategies in the three main categories mentioned above, and use of individual reading strategies.

Chapter 5 reports the results of the qualitative data from students' semi-structured interviews which were conducted with 40 Chinese university students in

Southwest China, including students' opinions about the importance of English reading, problems students encountered in English reading, reasons for students using certain strategies frequently and certain strategies infrequently, and students' suggestions for the teaching and learning of English reading.

Chapter 6 summarises the main findings of the present investigation in response to Research Questions 1 to 8 presented earlier in Section 3.4. This is followed by discussions of the research findings, and implications for the teaching and learning of English reading for Chinese teachers and students in China. The limitations of the present investigation and proposals for future research are presented at the end of this chapter.

1.7 Summary

In this chapter, the researcher has provided an overall description of the background to the present study in light of a research context. This is followed by the significance and objectives of the study, the definition of some terms used in the present research context and finally the outline of the thesis is also presented. The next chapter is to present the review of the related literature in relation to English reading and reading strategies.

CHAPTER 2

RELATED LITERATURE REVIEW AND RESEARCH WORKS ON READING STRATEGIES

This chapter is intended to present mainly the review of the related literature with regard to reading for comprehension and the reading strategies as well. Namely, at the first place, the researcher will review reading and its purposes. Then, reading definitions and purposes for reading, the importance of reading, the process of reading, the theoretical framework of reading, and the reading models will be reviewed respectively in light of providing detailed and clear clues for the present study. Finally, reading strategies and the significance of reading strategies in language learning are to be reviewed. The classifications of reading strategies and related research into L2 reading strategy use will also be looked through in this chapter.

2.1 Introduction

Since the late 1970s, there has been sustained interest in promoting reading as a significant and viable means of language development for second and foreign language (L2 and FL) learners (Day and Bamford, 1998). This is especially the case in EFL settings in which sources of L2 input are limited (Gebhard, 1996; Redfield, 1999).

Reading has been regarded as the most essential basis for a language learner as it carries the duty to understand, interpret the meaning of the writer. Reading has a communicative value and functions as an active skill when cognitive processes are working during reading. The reader both reads and tries to work on the information in the reading itself (Sarıçoban, 2002). Cohen (1990) mentions that reading in a target language in many ways like reading in the native language. It is viewed as the most active psycholinguistic guessing game instead of a 'passive' activity - a process whereby readers predicted what would come next on the basis of what the readers had already read, and then confirmed or corrected the prediction (Goodman, 1967). "The better the reader is able to make correct predictions, the less confirming via the text is necessary." (Carrell, 1989b: 74). Reading is also viewed as a dynamic interaction between the writer and the reader in which the reader creates meaning for the text.

According to schema theory, reading comprehension involves not only the information in the text, but also knowledge the reader already possesses, efficient comprehension requires the ability to relate the textual material to one's own knowledge (Adamas and Collins, 1979). Comprehending words, sentences, and discourse, involves much more than just relying on one's linguistic competence. It involves a number of cognitive processes. In fact, one's linguistic competence is just one part of one's total background knowledge (Carrell, 1983). The comprehension of text requires the use of skills including word knowledge, syntactic knowledge, knowledge of the topic, knowledge of text structure, and cohesion. Reading may

also be seen as a process in which the reader may sequentially deal with letters, words and sentences, which is a so-called bottom-up approach, essentially text driven. At the same time, the reader may deal with larger units of text, which is a top-down approach, more likely to be reader orientated (Sharp, 2002).

2.2 Definitions of Reading

Reading for understanding is a complex, cognitive skill in which the reader constructs meaning by relating information from the text to her or his prior knowledge (Bimmel, 2001). Reading, being defined as an active cognitive system operating on printed material for comprehension (Chastain, 1988) was once considered the most important activity in language classes (Rivers, 1981). Researchers define reading variedly from one another in terms of reading purposes in a particular setting. The following researchers provide some definitions for reading with regard to either L1 reading or L2 reading.

- Goodman (1995: 11) views reading as “a psycholinguistic guessing game, allowing readers to rely more on their existing syntactic and semantic knowledge structures than on the knowledge of graphic and sounds.”
- Anderson (1999: 1) defines reading as “an active and fluent process which involves the reader and the reading material in building meaning.”
- Alderson (2000: 3) defines reading as “the interaction between a reader and the text.”

- Schellings, Aanoutse and Leeuwe (2006: 549) define reading as “the construction of the meaning of texts. It is an active and strategic process, in which the reader’s skill and knowledge interact with the characteristics of the text such as genre, the wording and structure of the text. Reading is a complex process consisting of numerous processes, which strongly influence each other.”
- Grabe and Stoller (2007: 51) define reading as “the ability to understand information in a text and interpret it appropriately.”

Goodman (1995) describes reading as a psycholinguistic guessing game and a cyclical process in which a reader figures out the meaning with their formerly acquired knowledge. The psycholinguistic approach to reading is one that emphasizes the reader’s use of all relevant information to get the meaning. Anderson’s definition (1999) shows that in a reading process, the readers actively build up the relationship with reading material. Alderson’s definition (2000) reflects that a reading activity is an interactive process between the reader and the text. Grabe and Stoller (2007) view reading as a kind of ability to understand text and interpret it appropriately.

The review for definitions of reading mentioned above shows that though scholars define reading variously, it can be seen that reading is the ability of an individual to bring an existing knowledge, the information suggested by the text, the context of reading situation and thinking processes to construct the meaning from the writer’s ideas presented in the written form (Saengpakdeejit, 2009).

From the definitions given above, we can see that reading is not a passive but an active process in which the reader incorporates his or her knowledge with the textual information, managing to interpret what the writer wishes him or her to understand by using various reading skills.

2.3 Purposes of Reading

According to Grabe and Stoller (2007), reading is always purposeful not only in the sense that readers read in different ways based on differing reading purposes, but also in the sense that any motivation to read a given text is triggered by some individual purposes or tasks, whether imposed internally or externally. When reading, a reader normally reads with a particular purpose and a variety of reading strategy employment in relation to the decisions he or she made for starting to read as well as the types of reading materials. It is very important to recognize the reading purposes because it is one factor which can help the students succeed in their tasks.

Grabe and Stoller (2007: 11) also state that “the overall goal of reading is not to remember most of the specific details but to have a good grasp of the main ideas and supporting ideas, and to relate those main ideas to background knowledge as appropriate.” Based on this, Grabe and Stoller (2007: 13-15) present seven reading purposes, which are:

- 1) to search for simple information;

- 2) to skim quickly;
- 3) to learn from texts;
- 4) to integrate information;
- 5) to write;
- 6) to critique texts; and
- 7) to generally comprehend the reading text.

Grabe and Stoller (2007) further explain these reading purposes. Based on their explanation, reading to search for simple information is a common reading ability to scan the text for a specific piece of information or a specific word; however, some researchers see it as a relatively independent cognitive process. Reading to skim quickly is a common part of many reading tasks and a useful skill in its own right, which involves, in essence, a combination of strategies for guessing where important information might be in the text, and then using basic reading comprehension skills on those segments of the text until a general idea is formed. Reading to learn from texts typically occurs in academic and professional contexts in which a person needs to learn a considerable amount of information from a text. It requires abilities to

- remember main ideas as well as a number of details that elaborate the main and supporting ideas in the text;
- recognize and build rhetorical frames that organize the information in the text; and

- link the text to the reader's knowledge base

Reading to integrate information requires a critical evaluation of the information being read so that the reader can decide what information to integrate and how to integrate it for the reader's goal. Reading to write and reading to critique texts both require abilities to compose, select, and critique information from a text, as well as purpose represent common academic tasks that call upon the reading abilities needed to integrate information. Reading for general comprehension is the most basic purpose for reading, underlying and supporting other purposes for reading. It is more complex than commonly assumed. Grabe and Stoller (2007) mention that reading for general comprehension, when accomplished by a skilled fluent reader, requires very rapid and automatic processing of words, strong skills in forming a general meaning representation of main ideas, and efficient coordination of many processes under very limited time constraints.

Additionally, Grellet (1981) notes that there are two main purposes for reading, i.e. 1) reading for pleasure; and 2) reading for information, for example, in order to find out about something or in order to do something with the information the reader gets. Similarly, Ruiqi (2007) also points out two major reading purposes, i.e. 1) reading for getting information; and 2) reading for pure fun or enjoyment.

In summary, reading plays an important role in English learning. There are various purposes when a reader initiates reading, for example, reading for information, reading for pleasure, and reading for having a good grasp of the main

idea and supporting ideas. It is useful and helpful if readers realize the purposes of their reading, because it is one factor which can help the students succeed in their reading tasks.

2.4 Importance of Reading

Reading is considered one of the most important skills which language learners should obtain, particularly as it helps to build vocabulary and leads to lifelong learning and improvement in first and second language skills (Chen and Zheng, 2007). Alderson (1984: 1) mentions “In many parts of the world a reading knowledge of a foreign language is often important to academic studies, professional success, and personal development”. Carrell (1989a: 1) also states “For many students, reading is by far the most important of the four skills in a second language particularly in English as a second or foreign language.” Similarly, Wen (1996) points out that reading is both an aim and a means of language learning, and it is noted that 95% of knowledge comes from reading.

Romero-Ghiretti et al. (2007) mention that it is through reading that learners access a lot of information concerning the target language and culture, and consequently reading is an important part of almost all language programs across stages of acquisition. Cohen (1990) states that reading provides an alternative channel of communication, an important source of input and usable data in improving language skills. Moreover, many foreign language students often have

reading as one of their most important goals in their language learning experience and various pedagogical purposes served by written texts help reading receive this special focus (Richards and Renandya, 2002).

From the above review, we can see that reading is a very important skill in learning and that the ability to read is quite essential to understand and speak a language, and also reading provides an important channel of language input. Before discussing reading strategies, the researcher will present the process of reading.

2.5 Process of Reading

Reading is a complex process consisting of numerous processes, which strongly influence one another. The perception of letters, the rapid identification of words, the detection of the function and meaning of the different words within a sentence, the connection of the consecutive sentences, the construction of the sentences to a meaningful and coherent whole, and the integration of the information with prior knowledge are important processes (Schellings et al., 2006). The rapid identification of words, the construction and integration of meaning constitute the core of the reading process. In other words, reading takes place on two levels: on the level of word identification and on the level of the comprehension of sentences and text (Schellings et al., 2006). In Goodman's point of view (1995), reading is a psycholinguistic process which starts with a linguistic surface representation encoded by a writer and ends with meaning which the reader constructs.

Alternatively, there is an essential interaction between language and thought in reading.

As reading is the construction of the meaning of texts, it is an active and strategic process, in which the reader's skill and knowledge interact with the characteristics of the text such as genre, the wording and structure of the text. According to Goodman (1967), reading is also a selective process as it involves partial use of available minimal language cues selected from perceptual input on the basis of the reader's expectation. As this partial information is processed, tentative decisions are made to be confirmed, rejected or refined as reading progresses.

Chastain (1988) proposes that in the reading process, the reader's task is to activate background and linguistic knowledge to recreate the writer's intended meaning. To achieve the meaning, readers should go beyond the printed material. Similarly, according to Brown (2001), through the reading process, readers are expected to achieve either literal or implied meaning, and a reader uses a variety of clues to understand what the writer is implying, by which means the reader is able to see beyond the literal meaning of the words.

Grabe and Stoller (2007: 17-19) illustrate a set of necessary processes for a reader in relation to achieving fluent reading comprehension. The processes involved in fluent reading comprehension indicate that fluent reading is:

- 1) a rapid process, i.e. the more rapidly a text is successfully read, the better the various processing components are likely to operate;

- 2) an efficient process, i.e. various processes involved in comprehension must be coordinated and certain processes need to be carried out automatically;
- 3) an interactive process, i.e. linguistic information from the text interacts with information activated by the reader from the long-term memory, as background knowledge, which are essential for building the reader's interpretation of the text;
- 4) a strategic process, i.e. the reader needs to recognize processing difficulties, address imbalances between text information and reader knowledge, and make decisions for monitoring comprehension and shifting goals for reading;
- 5) a flexible process which means a strategic reader is able to read flexibly in line with changing purposes and the ongoing monitoring of comprehension;
- 6) an evaluating process, i.e. the reader must decide if the information being read is coherent and matches the purpose for reading;
- 7) a purposeful process in which reading is always purposeful;
- 8) a comprehending process, i.e. the ways that a reader carries out to interpret a given text;
- 9) a learning process, i.e. one outcome of reading being a purposeful and comprehending process is that it is also a learning process;

10) a linguistic process in which comprehension is unable to be achieved without linguistic knowledge.

Mere exposure to reading material, however, is not always sufficient for effective reading. Readers as language learners need to go through an active process that requires an interaction between the reader and the text rather than simply decoding the graphic representations (Anderson, 1999). According to Grabe (1991) and Ur (1996), many good readers have been reported to automatically become engaged in this interactive process while some readers do not seem to be able to do so. To assist those students who cannot automatically initiate the reader-text interaction, teachers are often advised to make use of certain activities in their reading classes (Grabe and Stoller, 2001; Pardo, 2004) as well as making use of different types of questions to promote different aspects of comprehension (Day and Park, 2005).

In conclusion, reading process is complex, because it involves a reader's interaction with the text and its author. In light of understanding reading better, the following section will present theoretical framework of reading based on cognitive theory, metacognitive theory and schema theory respectively.

2.6 Theoretical Framework of Reading

The main purpose of this section is to provide readers with an overall picture of reading process for the present investigation. It is also recognized that while reading, good readers frequently use their cognitive and/or metacognitive process to decode the linguistics for effective reading comprehension (Mokhtari and

Reichard, 2003; Henia, 2003). As a reader's background knowledge plays a very important role in the reading process, schema theory will also be discussed in the subsequent section.

2.6.1 Cognitive Theory

The term 'cognition' refers to "variations among individuals in the preferred way of perceiving, organizing, or recalling information and experience" (Stansfield and Hansen, 1983: 263). According to Flavell (1979), reading, whether in L1 or L2, is a 'cognitive enterprise' which occurs, in part, as a result of the interaction among the reader, the text, and the context in which reading takes place. According to Oxford (1990), cognitive strategies are used by learners to transform or manipulate the language. In the more specific terms, this includes note taking, formal practice with the specific aspects of the target language, such as sounds and sentence structure, summarizing, paraphrasing, predicting, analyzing, and using context clues.

Reading comprehension involves complex cognitive process, and what learners can contribute in this process is largely dependent on the purpose of reading, the familiarity of the topic, and the material length and the organization of the text types (Chen and Zheng, 2007). Cognitive strategies aid the reader in constructing meaning from the text, and moreover, cognitive theory has been seen as guiding procedures that students can use to complete their reading tasks (Rosenshine, 1997).

2.6.2 Metacognitive Theory

Metacognition is considered to be an element necessary for many cognitive learning tasks. Flavell (1976: 232) defines metacognition as "one's

knowledge concerning one's own cognitive processes and products or anything related to them". Metacognition also includes the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data, as well as metacognition consists of both metacognitive knowledge and metacognitive experience. Metacognitive knowledge indicates acquired knowledge about cognitive processes, knowledge that can be used to control the cognitive process. While metacognitive experience is a 'stream of consciousness' process in which other information, memories, or earlier experiences may be recalled as resources in the process of solving a current-moment cognitive problem (Flavell, 1976).

Furthermore, Brown (1980: 453) views metacognition as "the deliberate conscious control of one's own cognitive action". Brown, Armbruster, and Baker (1983) further suggest two types of metacognitive activities: those concerning one's knowledge about one's own cognitive resources, and those regulating and modifying the progress of a specific cognitive activity. To be effective, Brown et al. (1983) suggest that readers have to be aware of and be able to control the cognitive activities, such as summarizing, paraphrasing, predicting, analyzing, and using context clues, which they are engaged in as they read.

According to Block (1992), metacognition is an ability often related to effective learning and to competent performance in any area of problem solving. Block (1992: 320) defines metacognition as "an ability that develops relatively late because it involves the ability to stand back and observe oneself". In other words,

learners have knowledge about their cognitive processes and are able to use that knowledge to choose the most efficient strategies for problem solving. Similarly, Ellis (1995: 46) states that “metacognition refers both to the knowledge people have about their own cognitive processes and to their internal use of certain cognitive processes to facilitate learning and memory”.

Metacognition comes from the field of cognitive psychology and is increasingly used in language teaching and learning. Aebersold and Field (1997: 95) state that “Meta means after or behind, and cognition means the act or process of knowing or perception. Thus, metacognition is understanding what is behind, what supports or informs readers’ knowledge and perception. In the simplest terms it means understanding the process of knowing, or how (not just what) readers know and perceive.” Carrell (1998) views metacognition as a strategy which can help readers to be consciously aware of what they have learned, recognized situations in which it would be useful, and processes involved in using it; involve thinking about the learning process, planning for learning, monitoring comprehension or production while it is taking place, and self-evaluation of learning after the language activity is completed.

2.6.3 Schema Theory

Schema theory is a theory of learning. McCarthy (1991) states that schemata are the underlying connections that allow new experiences and information to be aligned with previous knowledge. Furthermore, Bruning (1995) views schema

as the mental framework that helps the learner organize knowledge, direct perception and attention, and guide recall. Barnett (1989) states that schemata are the readers' pre-existing concepts about the world and about the text to be read. Similar to McCarthy's view, Brantmeier (2004) mentions that schemata are commonly defined as the previously acquired background knowledge structures that are stored in the learners existing cognitive domain.

The application of schema theory to second language reading dates back to the 1980s (Carrell, 1983; 1987) with studies conducted with ESL students of many different instructional levels. Carrell (1983; 1987), Barnett (1989), McCarthy (1991), Bruning (1995), Brantmeier (2004) conclude that what students already know (their background knowledge) significantly influences their understanding of L2 reading materials. Moreover, with ESL students from only the high intermediate and advanced levels of instruction, research has shown that content schemata, have been seen as culturally familiar and unfamiliar content, influence first and second language reading comprehension (Carrell, 1987; Pritchard, 1990). The more familiar the students are with the reading topics, the more successful L2 comprehenders they become.

Wilson and Anderson (1986) provide a review of a number of studies, which compare expert and novice readers, indicating that those who have substantial amount of knowledge in a domain can acquire new information about the topic more easily than those who lack knowledge in a domain, since new information is simply

mapped onto the existing structure. The theory indicates that comprehension can be achieved relatively more easily if the reader has an appropriate schema or frame for the new information being presented in a given text than if the reader lacks an appropriate schema in which to fit the new information (Anderson, 2004).

Based on the schema theories, readers comprehend something only when they can relate it to something they already know. In other words, readers comprehend something only when they can relate the new experience to an existing knowledge structure. A fundamental assumption of the schema theoretic view of language comprehension is that the process of comprehending a text is an interaction between readers' background knowledge of content and structure, and the text itself (Carrell, 1983). Landry (2002) echoes that based on the schema theory, one's comprehension of a piece of reading text is a process of applying one's background knowledge to facilitate her or his comprehension, which, presumably, is unable to happen if one's background knowledge is not activated. Schema theory offers insight on the way knowledge is constructed but is far from a complete unveiling of the mysterious process of reading (Yigiter et al., 2005). Johnson (1982) also states that the organization of reader's past experiences directly influences the comprehension and retention of materials in a passage. It has been explored and proved by research on the psychological processes involved in comprehension that one's past experiences, background knowledge or schemata play a significant role to understand reading materials (Carrell, 1983).

As mentioned above, we can see that the schema theory can describe how knowledge is represented and how that representation facilitates the use of the knowledge (Heilman, Blair, and Rupley 1994). Schemata play an important role in the reading process, because they determine which of several interpretations of the text is the most probable. More importantly, various descriptions of concept of schemata may help readers better understand the process of reading.

To summarize, the cognitive theory, the metacognitive theory and the schema theory can explain the process in reading. While reading, the readers need one of the theories to explain how they decode the meaning from the written texts for their comprehension. In the successive section, the researcher will review the reading models, that is, bottom-up model, top-down model, and interactive model.

2.7 The Reading Models

Reading is viewed as an active process in constructing the meaning of what has been read that involves the reader and the reading material (Anderson, 2003; Grabe and Stoller, 2007). Heilman et al. (1994) indicate that reading process is dynamic, in which active, meaningful communication between the author and the reader is required. While in reading process, reading models often depict the act of reading as a communication event between the writer and the reader. According to Barnett (1989), a reading model is a model that describes the entire reading process. It is used to explain and predict reading behavior. Over the past fifty years, the most

influential reading process models are the following three major models: bottom-up model, top-down model and interactive model (Carrell, 1983; 1987; Barnett, 1989).

2.7.1 Bottom-up Model

The bottom-up process has been proposed by Gough (1972), who states that the basic idea of the model is that a reader gets visual information to construct meaning through a series of stages, such as the phonemic, syllabic, morphemic, letters, words, phrases, and sentences levels, and then goes to readers' general background knowledge. Carrell (1983) also points out that the bottom-up processing is evoked by the incoming data, where the data enter the system through the best-fitting bottom level or specific schemata. As these schemata converge into a higher level, more general schema is activated. Thus, the bottom-up processing mode is also called 'data-driven'.

According to Grabe and Stoller (2007), the bottom-up models suggest that all reading follows a mechanical pattern in which the reader creates a piece-by-piece mental translation of the information in the text, with little interference from the reader's own background knowledge. In the bottom-up processing, reading is a matter of decoding a series of written symbols. The readers are expected to get the meaning by recognizing letters and words. Nevertheless, the students sometimes could not comprehend the text they read (Nuttall, 1996). Obviously, the bottom-up model focuses on the letter and word level of the written text (Barnett, 1989). Bottom-up strategies include focusing on identifying the meaning and grammatical category of individual words, sentence structures, and details of the text (Salataci and Akyel, 2002).

2.7.2 Top-down Model

According to Carrell (1983), the top-down processing occurs as the system searches the input for confirmation of predictions made on the basis of higher order, general schemata, comparatively, the top-down processing is called ‘conceptually-driven’. The top-down models assume that reading is primarily directed by reader goals and expectations (Grabe and Stoller, 2007). In such a model, the reader is characterized as having a set of expectations about the text information and samples enough information from the text to confirm or reject these expectations (Alderson, 2000; Grabe and Stoller, 2007).

In other words, the top-down model places extreme importance on readers’ background knowledge in reading process, and the role of the text is comparatively minor. It has been proposed as an alternative view to early conceptions of the reading process. The top-down strategies involve identifying main ideas, seeing how the new information fits with the overall text, using background knowledge, making predictions, or skimming; in the reading process. The readers confirm their predictions by means of syntactic, lexical meaning, contextual information, grapheme or phoneme features provided by texts (Barnett, 1988; Carrell, 1989a). The top-down model views highlight the potential interaction under the general control of a central monitor. The top-down model of reading processes is especially valid for explaining the reading experiences of skillful readers in directing the reading process (Eskey, 1988).

2.7.3 Interactive Model

Reading is viewed as a kind of interaction that occurs between the reader and the text (Carrell and Eisterhold, 1983). Many scholars, e.g, Anderson (1999); Grabe and Stoller (2001) agree that reading is the process that involves both the top-down and bottom-up processes. According to the schema theory, comprehending a text is an interactive process (Yigiter et al., 2005). According to Carrell and Eisterhold (1983), Anderson (1999), Grabe and Stoller (2001), and Yigiter et al. (2005), the view behind interactive models is that one can take useful ideas from a bottom-up perspective and combine them with key ideas from a top-down view. In addition, the word recognition needs to be fast and efficient, but background knowledge is a major contributor to text understanding, as is inferencing and predicting what will come next in the text (Grabe and Stoller, 2007). This process emphasizes the reconstruction of meaning rather than the decoding of the linguistic form. As the top-down process bases on schema theory, the reader brings to this interaction their knowledge of the subject at hand, knowledge of and expectations about how language works, motivation, interest and attitudes towards the text and the content it contains (Nunan, 1985). Instead of decoding each symbol or word, the reader should form hypotheses about the possible identification of text elements.

The interactive process gives importance to previous knowledge and prediction as well as accurate processing of the actual words of the text. According to the interactive process, clues are taken from the page by the eye and transmitted to the

brain. Then, the brain tries to match the existing knowledge with the data to facilitate the further processing of new information. The role of the reader is described as extracting meaning from the text as the meaning does not reside in the text alone but lies in the interaction between the reader and the text (Grabe, 1991). The reader uses a variety of clues to understand what the writer is implying or suggesting. In that way the reader is able to see beyond the literal meaning of the words (Brown, 2001). As successful interpretation depends to a large extent on shared schemata, it has a vital role in comprehending what is being read (Alderson, 2000).

According to Sariçoban (2002), successful readers use a combination of both the top-down and bottom-up strategies. Hee and Zhao (2007) also echo that successful readers tend to use top-down strategies and the recognition that successful reading comprehension requires using a combination of top-down and bottom-up strategies corroborating with the schema theorists' view of reading comprehension.

From the above discussion, we can see that each model holds its characteristics. It is hard to tell which model is the best one in terms of enhancing reading comprehension. As Brown (2001) suggests, both top-down and bottom-up strategies may need to be emphasized depending on individual needs and proficiency levels. For beginning level learners, attention to teaching bottom-up reading processes may be needed, especially if the first language is orthographically very different from the target language. At the intermediate or advanced levels of proficiency, teachers may help students develop top-down strategies such as

understanding discourse markers or paying attention to inferred or implied meanings in a text. Regardless of the proficiency level, it is considered important for teachers to help students draw upon background knowledge to make predictions and guesses.

In summary, interactive approaches in reading theories reflect the view that the reading process is an interactive process between the reader and the text, and that it is bi-directional in nature involving both the bottom-up processing and the top-down processing. Using bottom-up strategies, readers start by processing information at the sentence level. In other words, they focus on indentifying of the meaning and grammatical category of a word, sentence syntax, text details, and so forth. As they process information that each sentence gives them, they check to see how this information fits, using top-down strategies such as background knowledge, prediction, getting the gist of a text, and skimming. Such a view of the reading process is widely accepted by researchers in that both the bottom-up process and top-down process interact and that the reader actively interacts with the text using both processes. The following section will focus on reading strategies, the importance of reading strategies, and the classifications by various scholars respectively.

2.8 Reading Strategies

Using effective strategies has long been the hallmark of efficient reading. Many empirical studies have linked success in reading to the quality and quantity of strategies used, and certain strategies need to be employed to construct the meaning effectively from written texts (Oxford, 1989; Brown, 1989; Alderson, 2000). Singhal

(2001), Mokhtari and Reichard (2004) also find that effective readers are more aware of strategy use than less effective readers. Cohen (1990) emphasizes that skillful reading can enhance language learning, while poor reading will frustrate readers and discourage readers from reading. This indicates that reading strategies are essential for readers to reach full comprehension of the text or texts that they read.

2.8.1 Definitions of Reading Strategies

Paris, Lipson, and Wixson (1983) point out that consensus among researchers for a concise definition of reading strategies is difficult. However, it is necessary to have a general understanding, at least, of what reading strategies are in relation to the present study. The following definitions of reading strategies are selected from various scholars, which allow readers to have a general view regarding reading strategies.

- Block (1986: 465) defines reading comprehension strategies as “how readers conceive a task, what textual cues they attend to, how they make sense of what they read, and what they do when they do not understand”.
- Barnett (1988: 151) defines reading strategies as “the comprehension processes that readers use in order to make sense of what they read. This process may involve skimming, scanning, guessing, recognizing cognates and word families, reading for meaning, predicting, activating general knowledge, making inferences, following references, and separating main ideas from supporting ideas.”

- Barnett (1989: 36) defines reading strategies as “the problem-solving techniques readers employ to get meaning from text.”
- Cohen (1990: 83) defines reading strategies as “mental processes that readers consciously choose to use in accomplishing reading tasks.”
- Wallace (1992: 146) defines reading strategies as “ways of reading which readers employed flexibly and selectively and vary depending on text-type, and the context and the purpose of reading”.
- Duffy (1993: 232) defines reading strategies as “plans for solving problems encountered in constructing meaning. They range from bottom-up reading strategies, such as recognizing words or chunking the incoming words into phrases and clauses, to top-level ones, such as connecting what is being read to the reader’s background knowledge or prior experience.”
- Brown (1994: 78) defines reading strategies as “the specific ‘attacks’ that learners employ when faced with a problem.”
- Anderson (1991: 460) defines reading strategies as “deliberate, cognitive steps that readers can take to assist in acquiring, storing, and retrieving new information”.
- Davies (1995: 47) defines reading strategy as “a physical or mental action used consciously or unconsciously with the intention of facilitating comprehension and reading.”

- Grabe and Stoller (2007:51) define reading strategies as “a set of abilities under conscious control of the reader.”

To sum up, the above sample definitions reveal the characteristics of reading strategies from different perspectives. Although the definition of reading strategies varies with researchers, there is a consensus that strategies are either conscious or unconscious, either explicit or implicit, either mental or physical behaviours used by a reader to attain a specific goal for reading. Consistent with Knight, Padron, and Waxman (1985), strategies include processes for enhancing reading comprehension and overcoming comprehension failure. In the present investigation, reading strategies are defined as “the methods, skills or behaviors the university students employ for the textual comprehension or to solve the reading problems when reading English texts either inside or outside the classroom settings”.

2.8.2 Importance of Reading Strategies

Over the past years, a great deal of research has focused on the reading process and the strategies that readers employ while reading. This is because reading strategies are of interest not only for what they reveal about the ways readers manage interactions with the written texts but also for how the use of strategies is related to effective reading comprehension (Carrell and Carson, 1997). The use of various strategies has been found to be effective in improving students' reading comprehension (Baker and Brown, 1984; Brown, 1981). Earlier, Rubin (1975) notes that exploring the students' learning process could increase the success of classroom

teaching-learning activities. Stern (1983) also points out that learning outcomes are much influenced by the learning process, which is affected by the learners' internal characteristics and learning conditions.

Oxford (1990) reveals that there are a variety of language learning strategies that have the potential to facilitate language learning. Goodman (1995) puts forward that reading actually is an active process in which readers used powerful strategies in the pursuit of meaning. To achieve their goals, readers use different learning strategies, i.e. thoughts and behaviours to accelerate comprehension (O'Malley and Chamot, 1990). These strategies are the cognitive activities which readers can undertake before, during and after the reading of a text in order to adequately comprehend the text and prevent, identify or solve any problems which may occur during this process (Aarnoutse, 1998). Comprehension or reading strategies on the other hand, can indicate how readers conceive a task, how they make sense of what they read, and what they do when they do not understand (Singhal, 2001).

According to Grabe and Stoller (2001), academic reading requires developing strategic readers who are aware of their goals in reading and able to administer strategies effectively, chosen carefully depending on their purpose in reading, to check their understanding of the text and solve comprehension problems. Successful readers are believed to be those who use learning strategies effectively (Green and Oxford, 1995). Ur (1996) finds that efficient readers used different

strategies for different purposes while inefficient readers tended to use the same strategies for all texts. Nevertheless, having a tendency of using more strategies resulted in better performance on reading tests (Anderson, 1991).

In summary, reading is a meaning-making process through which readers employ strategies to facilitate their comprehension. Further, strategic reading is very important to improve reading proficiency. Knowledge about reading strategies and application of them can enhance not only learning in school, but also benefit students in information collection and problem analysis and solving after they step into the society. Moreover, students will be reading in the way that successful readers do, and strategies help students to process the text actively, and to monitor their comprehension. Strategies are personal cognitive tools that can be exploited, learned and used selectively. The ability to read is acknowledged to be the most stable and durable of the second language modalities.

2.8.3 Classifications of Reading Strategies

How readers extract meaning from a text has long been a focus of attention because the process of extracting meaning gives us invaluable information about readers' cognitive processes while reading. In L1 and L2 contexts, many studies have been conducted on the use of cognitive strategy instruction as well as the effects of metacognitive strategy instruction on L1 and L2 reading. EFL reading researchers usually divide reading strategies into two major categories: cognitive and metacognitive (Salataci and Akyel, 2002).

As mentioned earlier, the definition of reading strategy varies from researcher to researcher, so does its classifications, judged by different criteria, falls into many categories. The following section will deal with reading strategies classifications by some scholars, including Hosenfeld (1977), Block (1986), Sarig (1987), Barnett (1988), Anderson (1991), Sheorey and Mokhtari (2001), Sariçoban (2002), Anderson (2003), Ozek (2006), and Saengpakdeejit (2009)

2.8.3.1 Reading Strategy Classification by Hosenfeld (1977)

Hosenfeld (1977), by using interview and the ‘think-aloud’ type of introspection, has found nine strategies commonly used by successful readers. In her research work, these strategies have not apparently been classified into categories.

These strategies are:

- keeping the meaning of a passage in mind while reading and using it to predict meaning;
- keeping unfamiliar words and guessing the meaning from remaining words in a sentence or latter sentences;
- circling back in the text to bring to mind previous contexts to decode an unfamiliar word;
- examining the illustration and using information contained in it in decoding;
- reading the title and draw inferences from it;
- referring to the side gloss;
- recognizing cognate;
- using knowledge of the world to decode an unfamiliar word;
- skipping words that may add relatively little to total meaning.

2.8.3.2 Reading Strategy Classification by Block (1986)

Another classification system of EFL reading strategies worth mentioning is the two-level classification provided by Block (1986: 472). The two levels are:

Category 1: General Comprehension Strategies

- anticipating content;
- recognizing text;
- integrating information;
- questioning information in the text;
- interpreting the text;
- using general knowledge and associations;
- commenting on behavior or process;
- monitoring comprehension;
- correcting behavior;
- reacting to the text.

Category 2: Local Linguistic Strategies

- paraphrasing;
- rereading;
- questioning meaning of a clause or sentence;
- questioning meaning of a word;
- solving vocabulary problem.

Block (1986) initially classifies these strategies into two categories; namely, general comprehension strategies and local linguistic strategies. It can be found that general comprehension strategies are skills related to mental activities and used more often in a top-down reading model for better comprehension. Nevertheless, local linguistic strategies are more specific skills to deal with concrete problems in reading. These strategies are more likely to be used in a bottom-up reading model.

2.8.3.3 Reading Strategy Classification by Sarig (1987)

Sarig (1987) classifies the data from the think-aloud reports into four general types of behaviors or responses:

- technical aid, e.g. skimming, scanning, skipping, marking the text, using glossary;
- clarification and syntactic simplification, e.g. decoding meanings of words and groups of words with the use of synonyms, and paraphrasing;
- coherence detection, e.g. identification of the text type, use of prior content schemata, identification of people and key information in the text, and reliance on textual schemata;

- monitoring moves, e.g. conscious identification of misunderstanding, change of planning the tasks, mistake correction, slowing down, and other direct moves intended to monitor text processing.

Technical aid strategies include behaviors such as skimming, scanning, skipping, marking the text, using glossary, and so forth. Strategies that involved syntactic simplification, decoding meanings of words and groups of words with the use of synonyms, and paraphrasing have been classified as clarification and simplification moves. Coherence-detecting moves included identification of the text type, use of prior content schemata, identification of people and key information in the text, and reliance on textual schemata. Behaviors involving active monitoring of text processing have been classified as monitoring moves, and these included behaviors such as conscious identification of misunderstanding, change of planning the tasks, mistake correction, slowing down, and other direct moves intended to monitor text processing.

2.8.3.4 Reading Strategy Classification by Barnett (1988)

Barnett's (1988) reading strategy classification consists of many effective and less effective text-level and word-level strategies. The following is a list of strategies that Barnett (1988) considers to be effective and less effective:

Category 1: Effective Strategies:

- paying most attention to what the reading passage means;
- paying most attention to what the form or grammatical function of the words are;
- reading the whole passage once and then rereads it;
- finding the topic interesting;
- thinking about what s/he knows about the topic of the passage;
- hypothesizing about what might come text;
- reading the title first and imagines what the passage might be about;

- guessing what some words mean.

Category 2: Less Effective Strategies:

- paying most attention to what individual words mean;
- paying most attention to what the structure of the passage is;
- rereading only the difficult sections;
- reading only because it has been assigned;
- reading each paragraph by itself;
- reading the title but does not think much about it;

2.8.3.5 Reading Strategy Classification by Anderson (1991)

Anderson (1991) conducted a study on “Individual differences in strategy use in second language reading and testing”, the subjects’ strategies used in reading are categorized into four levels, which are supervising strategies, supporting strategies, paraphrasing strategies and establishing coherence in text. Supervising strategies include recognizing loss of concentration, formulating a question, referring to a previous passage. Supporting strategies include skipping unknown words, visualizing, skimming. Paraphrasing strategies include paraphrasing, translating, using cognates. Establishing coherence in text includes rereading, using context clues, reading ahead.

Category 1: Supervising Strategies

- recognizing loss of concentration;
- formulating a question;
- referring to a previous passage.

Category 2: Supporting Strategies

- skipping Unknown words;
- visualizing;
- skimming.

Category 3: Paraphrasing Strategies

- paraphrasing;
- translating;
- using cognates.

Category 4: Establishing Coherence in Text

- rereading;
- using context clues;
- reading ahead.

2.8.3.6 Reading Strategy Classification by Sheorey and Mokhtari (2001)

A research work conducted by Sheorey and Mokhtari (2001), aims to discover the reading strategies employed by college students. They then classify the Survey of Reading Strategy (SORS) into three main categories as metacognitive strategies, cognitive strategies and supportive strategies. The subcategories are presented below.

Category 1: Metacognitive Strategies

- setting purpose for reading;
- previewing text before reading;
- checking how text content fits purpose;
- noting text characteristics;
- determining what to read;
- using text features (e.g. tables);
- using context clues;
- using typographical aids (e.g. italics);
- predicting or guessing text meaning;
- confirming predictions.

Category 2: Cognitive Strategies

- using prior knowledge;
- reading aloud when text becomes hard;
- reading slowly and carefully;
- adjusting reading rate;
- paying close attention to reading;
- pausing and thinking about reading;
- visualizing information read;
- evaluating what is read;
- resolving conflicting information;
- re-reading for better understanding;
- guessing meaning of unknown words.

Category 3: Support Strategies

- taking notes while reading;
- underlining information in text;
- using reference materials;
- paraphrasing for better understanding;
- going back and forth in text;
- asking oneself questions.

According to Sheorey and Mokhtari (2001), metacognitive strategies are those intentional, carefully planned techniques used by learners to monitor or manage their reading for better comprehension. These strategies include setting reading purpose, pre-reading, prediction, etc., which mainly, are very implicit and mental activities. Conversely, cognitive strategies are the actions and procedures readers use while working directly with the text under the management of metacognitive strategies, such as reading verbally, adjusting reading rate, re-reading for better comprehension, etc., which are mainly explicit and visual. These techniques are used when problems develop in understanding textual information. In addition, Sheorey and Mokhtari consider taking notes while reading, underlining information in text, using reference materials, paraphrasing for better understanding, going back and forth in text and asking oneself questions as ‘support strategies’, because these strategies are used to enhance the comprehension of the reading text.

2.8.3.7 Reading Strategy Classification by Sariçoban (2002)

Sariçoban (2002) conducts a study to determine the difference in the strategy use by both successful and less successful readers at an upper-intermediate level in the in-classroom setting. The reading strategies are classified into:

Category 1: Strategies for the pre-reading stage

- finding answers to given questions based on the text;
- giving their personal opinion about the topic;
- predicting the continuing text;
- questioning the reason the author is writing about the topic;
- questioning the whole range of ways to write a particular text;
- questioning the generating of their own list of questions.

Category 2: Strategies for the during-reading stage

- reading through the passage;
- underlining difficult words and phrases;
- figuring out the meanings of these words and phrases from context;
- re-reading the text;
- solving doubts by questioning;
- focusing on the most important ideas of a text;

Category 3: Strategies for the post-reading stage

- summarizing;
- evaluating;
- synthesizing;
- commenting;
- reflecting.

2.8.3.8 Reading Strategy Classification by Anderson (2003)

Anderson (2003) puts forward a list of three main reading strategy categories in his research work. These reading strategies are global reading strategies, problem-solving strategies, and support strategies. Under each category, there are more specific strategies used by readers for better understanding.

Category 1: Global Reading Strategies

- guessing what the content of the text is about;
- using prior knowledge;
- designing what to read closely and what to ignore;
- scanning;
- reviewing the text first by noting its characteristics like length and organization;

- using typographical features like bold face and italics to identify key information;
- participating in live chat with native speakers of English language;
- participating in live chat with other learners of the target language.

Category 2: Problem Solving Strategies

- getting back on track when losing concentration;
- rereading the text to increase understanding;
- paying more attention to the text;
- reading slowly and carefully to make sure the understanding of the text;
- guessing the meaning of unknown words or phrases;
- distinguishing the fact and opinion in the text;
- visualizing information;
- adjusting the reading speed;
- stopping from time to time and thinking about the text.

Category 3: Support Strategies

- thinking about information in both English and mother language;
- asking oneself questions;
- using reference materials;
- reading aloud;
- underlining or circling information;
- translating from target language into mother language;
- taking notes while reading.

2.8.3.9 Reading Strategy Classification by Ozek (2006)

Ozek (2006) classifies reading strategies into pre-reading strategies, while-reading strategies and post-reading strategies. She generates these strategies from self-report questionnaire and think-aloud protocol, which are used to investigate ELT students' use of reading strategies.

Category 1: Pre-reading Strategies

- using the title;
- skimming the text;
- thinking about the previous knowledge on the topic of the text;
- using picture/illustration.

Category 2: While-reading Strategies

- consulting the dictionary for important words;
- guessing the meaning of a word from the context;
- skipping some unknown words;
- reading without translating word-for-word;
- thinking aloud during reading;
- guessing the meaning of a word from the grammatical category;
- thinking of situation to remember a word;
- considering other sentences to understand the meaning of a sentence;
- visualizing events;
- recognizing organization;
- taking notes;
- assimilating the text with the background information;
- rereading a sentence.

Category 3: Post-reading strategies

- classifying words according to their meanings;
- classifying words according to their grammatical categories;
- summarizing the main ideas;
- rereading the text to remedy comprehension failures;
- rereading the text to remember important information.

2.8.3.10 Reading Strategy Classification by Saengpakdeejit (2009)

Saengpakdeejit (2009) generates the strategies from interview and self-report questionnaire which were used to investigate EFL students' use of reading strategies. She classifies reading strategies into pre-reading strategies, while-reading strategies and post-reading strategies.

Category 1: Strategies for the pre-reading stage

- searching for the meanings of new vocabulary items;
- reading the title of the text;
- going through the text quickly;
- reading the first and the last paragraphs;
- looking at pictures/charts/tables/ figures in the text (if any);
- looking at questions about the text (if any);
- scanning for main ideas;
- thinking of your background knowledge about the text;
- reading the abstract or an introductory part;

- looking for the parallel article(s) in Thai (if any);
- predicting what might happen in the text.

Category 2: Strategies for the while-reading stage

- searching for the meanings of new vocabulary items;
- analysing a sentence structure;
- taking notes the important information;
- guessing the meaning of the text from context;
- rereading certain part(s) of the text;
- reading certain part(s) of the text slowly;
- avoiding difficult parts;
- highlighting important information or difficult vocabulary items by underlining or making symbol(s);
- thinking about the meaning of the reading text in Thai;
- making a summary of certain part(s) of the reading text in either Thai or English, or both.

Category 3: Strategies for the post-reading stage

- searching for the meanings of new vocabulary items;
- discussing the reading text with classmate(s) or friend(s);
- making a summary of the whole reading text;
- retelling oneself or other people about what has been read;
- reviewing one's own notes.

In conclusion, reading strategies have been classified differently in various ways by different researchers. They may derive the classification from their personal experience as language researchers or language teachers. As a result, it can be concluded that defining and classifying language reading strategies may depend on an individual researcher with regard to their research purposes, research context where a research work has been carried out, and personal interests. With respect to the literature review, the most common strategy categories are classified based on the reading stages, which are before-, while- and after-reading stages. As Intaraprasert (2000) states that there is no single perfect classification can apply to every situation. First and foremost, it has inspired the researcher to locate the present investigation in the context of the review research, as well as the authors' opinions.

2.9 Research Works on Reading Strategies

Since the concept of reading strategy was proposed in language teaching and research fields, researchers have paid continuous attention to the systematic study of reading strategy. In particular, the research into reading strategies has developed in full wing and its notions and implications have been widely accepted. Many researchers have made great contributions to this field. Examples are, Hosenfeld (1977), Block (1986, 1992), Sarig (1987), Barnett (1988), Carrell (1989a), Anderson (1991), Sheorey and Mokhtari (2001), Anderson (2003) and Ozek (2006), etc. The subsequent section is a review of the past research works relating to reading strategies concerning various variables.

2.9.1 Research Works on Reading Strategies Conducted in Countries

Other than China

In order to provide readers with a general framework of the research works, some selected research works related to reading strategies have been presented and interpreted by the researcher. The selected research works have been conducted in countries other than China by Hosenfeld (1977), Block (1986, 1992), Sarig (1987), Barnett (1988), Carrell (1989a), Anderson (1991), Raymond (1993), Sheorey and Mokhtari (2001), Sariçoban (2002), Anderson (2003), Mokhtari and Reichard (2004), Ahmad and Asraf (2004), Yigister et al. (2005) etc.

**Table 2.1 Research Works on Reading Strategies Conducted in Countries
Other than China**

| 1. Hosenfeld, C. (1977). A Preliminary Investigation of the Reading Strategies of Successful and Unsuccessful Second Language Learners. | |
|------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose(s) of Study | To discover the differences of strategy use between successful and non-successful readers. |
| Participants | 9 th grade students learning French: 20 successful readers and 20 poor readers. |
| Instrument(s) | Think-aloud protocol |
| Variable(s) | Level of reading proficiency |
| Data Analysis | Descriptive statistics |
| Results | <ol style="list-style-type: none"> 1. The successful readers kept the meaning of the passage in mind while reading, skipped words unimportant to the meaning of the sentence, read in 'broad phrases', used context to determine word meaning, and had a positive self-concept as a reader. 2. Poor readers, on the other hand, translated sentences and lost the general meaning of the passage, rarely skipped words, looked up unknown words in a glossary, and had a poor self-concept as a reader. 3. Poor readers mainly focused on solving unknown words or phrases. |
| 2. Block, E. (1986). The Comprehension Strategies of Second Language Readers. | |
| Purpose(s) of Study | To identify and describe comprehension strategies used by ESL students designated as non-proficient readers. |
| Participants | 9 university level ESL and native English students in a remedial reading course |
| Instrument(s) | Think-aloud protocol |
| Variable(s) | Reading proficiency level |
| Data Analysis | Descriptive Statistics (e.g. frequency, and percentage). |
| Results | <p>Compared with poor readers, successful readers:</p> <ol style="list-style-type: none"> 1. used their general knowledge; 2. focused on the overall meaning of text; 3. integrated new information with the old one; 4. differentiated main ideas from supporting points. |
| 3. Sarig, G. (1987). High-level Reading in the First and in the Foreign Language: Some Comparative Process Data. | |
| Purpose(s) of Study | To determine the difference in the strategy use by both successful and less successful readers at an upper-intermediate level. |
| Participants | Ten female native Hebrew readers studying English as a foreign language |
| Instrument(s) | Think-aloud |
| Variable(s) | <ol style="list-style-type: none"> 1. Reading proficiency level; 2. L1 reading strategy transfer |
| Data Analysis | Descriptive Statistics (e.g. frequency, and percentage). |
| Results | <ol style="list-style-type: none"> 1. Subjects transferred strategies from L1 into L2 reading 2. Global strategies led to both successful and unsuccessful reading comprehension 3. Clarification and simplification strategies contributed to unsuccessful reading in L1 and L2 |

**Table 2.1 Research Works on Reading Strategies Conducted in Countries
Other than China (Contd.)**

| 4. Barnett, M. A. (1988). Reading through Context: How Real and Perceived Strategy Use Affects L2 Comprehension. | |
|-------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose(s) of Study | To determine the difference in the strategy use by both successful and less successful readers at an upper-intermediate level. |
| Participants | 278 university level students learning fourth semester French; Some students were taught reading strategies and others were not. |
| Instrument(s) | Strategy Use Questionnaire |
| Variable(s) | Reading proficiency level |
| Data Analysis | Descriptive Statistics (e.g. frequency, and percentage) |
| Results | 1. Higher comprehension scores were achieved by participants who considered context while reading; 2. Participants who were taught strategy use understood passages better. |
| 5. Carrell, P. L. (1989a). Metacognitive Awareness and Second Language Reading. | |
| Purpose(s) of Study | To investigate metacognitive awareness of L2 reader strategies in both their native language and second language, and the relationship between this awareness and their comprehension. |
| Participants | 75 native English speakers learning Spanish in first, second, and third year courses; 45 native speakers of Spanish in intermediate ESL courses |
| Instrument(s) | 1. Strategy Use Questionnaire; 2. Comprehension test. |
| Variable(s) | Language reading proficiency |
| Data Analysis | Descriptive Statistics (e.g. frequency, and percentage) |
| Results | 1. Spanish as a foreign language group at lower proficiency levels used more bottom-up processing strategies; 2. ESL group at advanced levels used top-down strategies. |
| 6. Anderson, N. J. (1991). Individual Differences in Strategy Use in Second Language Reading and Testing. | |
| Purpose(s) of Study | To examine individual difference in strategy use by adult L2 learners while engaged in two reading tasks: taking a standardized reading comprehension test and reading academic texts. |
| Participants | 65 Spanish-speaking students enrolled at a university level intensive English as a second language (ESL) program in the Southwestern United States. |
| Instrument(s) | 1. Descriptive Test of Language Skills-Reading Comprehension Test (DTLS); 2. TRP (Textbook Reading Profile) with think-aloud reports. |
| Variable(s) | Reading proficiency level |
| Data Analysis | 1. Descriptive statistics (e.g. percentage); 2. ANOVA. |
| Results | 1. Readers scoring high and those scoring low appear to be using the same kinds of strategies while reading and answering the comprehension questions and either measure; 2. Strategy use may also be a matter of vocabulary control and general background knowledge; 3. The processing strategies used while taking a standardized reading comprehension test and while reading for academic purposes are very similar. |

**Table 2.1 Research Works on Reading Strategies Conducted in Countries
Other than China (Contd.)**

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 7. Block, E. L. (1992). See How They Read: Comprehension Monitoring of L1 and L2 Readers. | |
| Purpose(s) of Study | To investigate the comprehension-monitoring process used by first and second language readers of English. |
| Participants | 16 proficient readers of English, 9 non-proficient readers of English |
| Instrument(s) | Think-aloud oral reports at sentence level |
| Variable(s) | Reading proficiency level |
| Data Analysis | Descriptive statistics |
| Results | 1. Less proficient readers used local strategies; 2. More proficient readers relied on global strategies. |
| 8. Raymond, T. M. (1993). The Effects of Structure Strategy Training on the Recall of Expository Prose for University Students Reading French as a Second Language. | |
| Purpose(s) of Study | To examine the effects of structure strategy training on the comprehension of expository prose with native English speaking students learning French as a second language. |
| Participants | 43 native English readers of French from high in intermediate level of French; written questionnaire and written recall |
| Instrument(s) | Think-aloud oral reports |
| Variable(s) | Reading proficiency |
| Data Analysis | Qualitative analysis |
| Results | 1. Training in structure strategy helped increase the amount of idea units recalled; 2. Structure strategy use is a characteristic of skilled second language readers. |
| 9. Sheorey, R. and K, Mokhtari. (2001). Differences in the Metacognitive Awareness of Reading Strategies among Native and Non-native Speakers. | |
| Purpose(s) of Study | To measure the perceived use of the type and frequency of strategies by post-secondary students while reading academic materials in English typically encountered in secondary school and college. |
| Participants | 150 Native-English-speaking US students and 152 non-native-English-speaking international students |
| Instrument(s) | The Survey of Reading Strategies (SORS) |
| Variable(s) | 1. Reading proficiency; 2. Gender. |
| Data Analysis | 1. T-test; 2. ANOVA. |
| Results | 1. ESL students used more strategies than the US students. 2. ESL used a greater number of support reading strategies. 3. No significant difference of strategy use between males and females. 4. Higher self-reported students used strategies frequently than those lower self-reported students. |

Table 2.1 Research Works on Reading Strategies Conducted in Countries**Other than China (Contd.)**

| 10. Sariçoban, A. (2002). Reading Strategies of Successful Readers through the Three Phase Approach. | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose(s) of Study | To determine the difference in the strategy use by both successful and less successful readers at an upper-intermediate level. |
| Participants | 110 preparatory students for language studies in English Department at Hacettepe University during 2000-2001 academic year. |
| Instrument(s) | Reading strategies questionnaire |
| Variable(s) | Reading proficiency level |
| Data Analysis | Descriptive statistics(percentage) |
| Results | <ol style="list-style-type: none"> 1. In pre-reading stage, the successful learners and the less successful learners do not differ in the use of the strategies; 2. While in during-reading stage, the successful learners used strategies frequently than the less successful learners did. 3. At post-reading stage, the successful learners used evaluating and commenting strategies more frequently than the less successful readers. |
| 11. Anderson, N. J. (2003). Scrolling, Clicking, and Reading English: Online Reading Strategies and a Second/Foreign Language. | |
| Purpose(s) of Study | To examine the role of L2 strategies within the context of online reading tasks. |
| Participants | 131 EFL students and 116 ESL students |
| Instrument(s) | The Survey of Reading Strategies (SORS) |
| Variable(s) | Type of students: ESL and EFL |
| Data Analysis | <ol style="list-style-type: none"> 1. Descriptive statistics; 2. ANOVA. |
| Results | <ol style="list-style-type: none"> 1. EFL readers used the problem solving strategies more frequently than the ESL readers did; 2. No significant differences of strategy use between the EFL and the ESL groups. |
| 12. Mokhtari, K. and C. Reichard. (2004). Investigating the Strategic Reading Processes of First and Second Language Readers in Two Culture Contexts. | |
| Purpose(s) of Study | To investigate whether significant differences exist between first and second language readers in their metacognitive awareness and perceived use of specific strategies when reading for academic purposes in English. |
| Participants | 141 US college students and 209 Moroccan students |
| Instrument(s) | <ol style="list-style-type: none"> 1. Archival records; 2. The Metacognitive Awareness of Reading Strategies Inventory (MARSİ). |
| Variable(s) | <ol style="list-style-type: none"> 1. Types of students: L1 language reader and L2 language readers; 2. Different instructional contexts; |
| Data Analysis | MANOVA Tests |
| Results | <ol style="list-style-type: none"> 1. They reported remarkably similar patterns of strategy awareness and reported usage when reading academic materials in English. 2. Moroccan students reported using certain types of strategies more often than did their American counterparts. |

**Table 2.1 Research Works on Reading Strategies Conducted in Countries
Other than China (Contd.)**

| | |
|---------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 13. Ahmad, I. S. and R. M. Asraf. (2004). Making Sense of Text: Strategies Used by Good and Average Readers. | |
| Purpose(s) of Study | <ol style="list-style-type: none"> 1. To determine whether the subskills or question types (QTs) are useful in differentiating between good and average readers in terms of their comprehension answering strategies. 2. To investigate the comprehension answering strategies of the good and average readers in responding to L2 comprehension test passages and questions. |
| Participants | 4 good and 4 average Malay readers |
| Instrument(s) | <ol style="list-style-type: none"> 1. The Wilcoxon Matched-Pairs Signed-Ranks Test; 2. Interview. |
| Variable(s) | Reading proficiency level |
| Data Analysis | Qualitative analysis |
| Results | There is a difference between good and average readers in their response to the various question types within the framework of the eight subskills, e.g. wording meaning, words in context, literal comprehension, finding salient or main ideas, forming judgement, interpretation of metaphor, drawing inferences from single strings and drawing inferences from multiple string. |
| 14. Yigiter, K., Sarıçoban, A. and Gürses, T. (2005). Reading Strategies Employed by ELT Learners at the Advanced Level. | |
| Purpose(s) of Study | To identify what strategies good readers employ in pre-, during-, and post-reading stages in classroom language learning. |
| Participants | 123 preparatory students for language studies in English at Atatürk University |
| Instrument(s) | 1. Questionnaire; 2. Reading test |
| Variable(s) | Language reading proficiency |
| Data Analysis | Descriptive statistics |
| Results | The ELT and EFL learners may have different reading strategies depending upon their needs and interests. |
| 15. Seng, G. H. (2006). Use of L1 in L2 Reading Comprehension among Tertiary ESL Learners. | |
| Purpose(s) of Study | To investigate the extent of L1 use among L2 readers as they read L2 texts in a group and identify the reading strategies that are expressed most in the L1 during group reading. |
| Participants | 4 EFL undergraduates of Universiti Pendidikan Sultan Idris |
| Instrument(s) | Think-aloud |
| Variable(s) | L1 use |
| Data Analysis | Descriptive statistics |
| Results | <ol style="list-style-type: none"> 1. The L1 was used by all the students in the study and that more than 30% of the total instances of strategy use involved the L1. 2. The study also revealed various reasons for the students' use of the L1 while reading L2 texts particularly in the context of group reading. |

**Table 2.1 Research Works on Reading Strategies Conducted in Countries
Other than China (Contd.)**

| 16. Schellings, G., Aanoutse, C. and J. V. Leeuwe. (2006). Third-grader's Think-aloud Protocols: Types of Reading Activities in Reading an Expository Text. | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose(s) of Study | To examine reading activities of young students perform when they are reading an expository text. |
| Participants | 24 students were selected from a sample of 296 third-graders |
| Instrument(s) | Think-aloud protocols |
| Variable(s) | Reading proficiency level |
| Data Analysis | 1. Descriptive statistics; 2. Correlation analyses. |
| Results | 1. Mean percentages for the error and reproduction activities are similar for the two texts; 2. The correlations between the reading strategies index and the scores for the general and specific reading comprehension tests are positive; 3. The correlations between the reading error index and the scores on various reading measures are considerable and negative, as they should; 4. Think-aloud method is a valuable method to examine the reading of youngsters. |
| 17. Saengpakdeejit. (2009). An Employment of Reading Strategies by Science-oriented Students Learning English at the Thai Government Universities. | |
| Purpose(s) of Study | To investigate reading strategy use by Thai university students |
| Participants | 1,096 Thai university students |
| Instrument(s) | 1. Interview 2. Questionnaire |
| Variable(s) | 1. Reading Proficiency level; 2. gender; 3. Education background; 4. Location of universities; 5. Fields of study. |
| Data Analysis | 1. Descriptive statistics; 2. ANOVA; 3. Chi-square tests; 4. Factor analysis. |
| Results | 1. As a whole, the students reported medium frequency of strategy use; 2. There is relationship between reading strategy use and students gender, fields of study, and levels of reading proficiency; 3. Six extracted factors were found to be strongly related to students' gender, location of universities, fields of study, and levels of reading proficiency, whereas, no factors were found to be related to students' high school background. |

In summary, Table 2.1 has shown some of the available past research works on reading strategies conducted in the countries other than China. These research works are ranged from 1977 up to 2009. The above mentioned research works on reading strategies demonstrate how the previous researchers conducted their studies. With regard to the study purpose(s), the researchers mainly explored the reading strategy use by language learners, and investigated the effects of reading strategies on reading activities.

In terms of the participants of the mentioned research works, the participants are either native speakers of English or non-native speakers of English. The participants are ranged from primary-level to tertiary-level students, but very few research works have been done with young learners or adult learners in the field of reading strategies. In the previous research works, the researchers mainly use reading strategy questionnaires (Barnett, 1988; Carrell, 1989a; Sheorey et al., 2001; Sariçoban, 2002; Anderson, 2003; Mokhtari and Reichard, 2004; and Yigiter et al., 2005), think-aloud protocols (Hosenfeld, 1977; Block, 1986; Sarig, 1987; Anderson, 1991; Block, 1992; Raymond, 1993; Seng, 2006; and Schellings et al., 2006), interview (Ahmad and Asraf, 2004) as the instruments for data collection. Data were analysed via descriptive statistics, t-test, one-way ANOVA, and MANOVA Tests. Besides, variables concerned in the previous research works are mainly gender, reading proficiency level and L1 use. The next session will demonstrate research works on reading strategies conducted in China with Chinese students.

2.9.2 Research Works on Reading Strategies Conducted in the Chinese

Context

The researcher of the present investigation has found a few researchers examining the use of reading strategies by Chinese students in a more narrowly focused aspect, where only a few factors have been taken into consideration. Table 2.2 has demonstrated the selected research works conducted in the Chinese context by Yang and Zhang (2002), Meng (2004), Liu (2004) and Kong (2006).

Table 2.2 Research Works on Reading Strategies Conducted in China

| | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Yang, X. H. and Zhang, W. P. (2002). A Correlational Study on Metacognitive Strategy Employment and University Students' Reading Comprehension. | |
| Purpose(s) of Study | To investigate the metacognitive strategy employment of Chinese university students when they read English texts. |
| Participants | 125 non-English major third-year university students |
| Instrument(s) | Metacognitive Strategy Questionnaire |
| Variable(s) | Reading proficiency level |
| Data Analysis | 1. Descriptive statistics; 2. Correlation analysis. |
| Results | The correlations between metacognitive strategies and reading proficiency are positive. |
| 2. Meng, Y. (2004). A Study of Reading Strategy Training in an Ongoing College English Classroom. | |
| Purpose(s) of Study | To investigate the effects of the training on students' reading ability by means of analyzing test results and the questionnaire. |
| Participants | 84 university students |
| Instrument(s) | Post-reading Strategy Training Questionnaire |
| Variable(s) | Reading proficiency |
| Data Analysis | T-test |
| Results | 1. Strategy training was effective in enhancing EFL college students' overall reading proficiency and reading rate; 2. The intervention had significant effect on the improvement of students' abilities to grasp main ideas and to make global and lexical inferences from both given passages and knowledge of the world; however, it had no obvious effect on the improvement of their ability to extract detailed information from the texts; 3. The students took positive attitudes toward the training. |

Table 2.2 Research Works on Reading Strategies Conducted in China (Contd.)

| 3. Liu, H. J. (2004). A Correlational Study on Metacognitive Strategies and English Reading. | |
|---------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Purpose(s) of Study) | To investigate the metacognitive strategy employment of the subjects when they read English texts. |
| Participants | 64 English-major students from Nanjing Normal University |
| Instrument(s) | Metacognitive Strategy Questionnaire |
| Variable(s) | Reading proficiency level |
| Data Analysis | 1. Descriptive statistics 2. One-way ANOVA 3. Correlation analysis |
| Results | 1. Students use metacognitive strategies in English reading; 2. Students use selective attention strategy the most, while use evaluating the least; 3. Positive relationship exists between overall strategy use and students' reading proficiency. |
| 4. Kong, A. (2006). Connections Between L1 and L2 Readings: Reading Strategies Used by Four Chinese Adult Readers. | |
| Purpose(s) of Study | To explore whether the Chinese ESL readers transfer their L1 reading knowledge to L2 reading |
| Participants | 4 Chinese native readers and ESL learners |
| Instrument(s) | 1. Think-aloud; 2. Interview. |
| Variable(s) | 1. L1 reading strategy transfer; 2. L2 reading proficiency level. |
| Data Analysis | Qualitative analysis and descriptive statistics |
| Results | 1. All participants demonstrated more strategy use in reading the English texts than in reading the Chinese text; 2. Those who had a moderate to high L2 proficiency level showed more transfer of strategy use from reading the Chinese to reading the English than the one who had a low L2 proficiency level; 3. L2 proficiency level does not seem to predict the readers' use of higher level thinking strategies; 4. The readers' prior experiences with L1 reading and L2 learning as well as their exposure to the L2 culture all seem to contribute to affect the readers' strategy use in L2. |

Yang and Zhang (2002) carried out a correlational study in which they attach great importance to metacognitive strategies in terms of their influence on reading proficiency. The investigation of 125 college students' metacognitive strategies was conducted through a self-designed questionnaire involving knowledge

of oneself, knowledge of strategies and knowledge of tasks. The study shows significant positive correlations between metacognitive strategies and reading proficiency.

Meng (2004) conducted a study of reading strategy training in an ongoing college English classroom, and investigated the effects of the training on students' reading ability by means of analyzing test results and the questionnaire. Results show that strategy training was effective in enhancing EFL college students' overall reading proficiency and reading rate. The intervention had significant effect on the improvement of students' abilities to grasp main ideas and to make global and lexical inferences from both given passages and knowledge of the world; however, it had no obvious effect on the improvement of their ability to extract detailed information from the texts. Finally, post-training questionnaire reveal that the students took positive attitudes toward the training and the four strategies, indicating that such training activities are relatively safe to use in Chinese EFL college reading classroom.

Liu (2004) carried out an empirical study on the relationship between metacognitive strategies and English reading. Results of the study reveal that the Chinese students majoring in English use metacognitive strategies more or less in English reading, and most of the students in the survey report an occasional use of the strategies in question. Next, among the four categories of metacognitive strategies, what the students use comparatively the most is the category of selective

attention while the evaluating category rates the least used. But the usage of the latter exhibits certain predictive validity in explaining the differences in the students' reading results. Finally, the study also shows some positive relationship between the frequency of overall metacognitive strategy use and the results of English reading.

Kong (2006) examined the reading strategies that four Chinese adult readers use in reading both Chinese and English texts. Their strategies they used were analyzed into two broad categories: the text-initiated strategies and the reader-initiated strategies. All participants demonstrated more strategy use in reading the English texts than in reading the Chinese text. In general, participants were more critical in evaluating the author's opinions with the Chinese than the English texts. Those who had a moderate to high L2 proficiency level showed more transfer of strategy use from reading the Chinese to reading the English than the one who had a low L2 proficiency level. However, L2 proficiency level did not seem to predict the readers' use of higher level thinking strategies. The readers' prior experiences with L1 reading and L2 learning as well as their exposure to the L2 culture all seemed to contribute to affect the readers' strategy use in L2.

In summary, Table 2.2 shows a few available research works on reading strategies conducted in the Chinese context. The purposes of these research works were to explore the reading strategy employment of the readers, or to investigate the relationship between strategy use and reading proficiency. Participants of the studies were university students. Of all the four research works, reading proficiency is the

main variable employed by the researchers. With regard to the data collection instruments, questionnaire (Yang and Zhang, 2002; Meng, 2004; Liu, 2004), think-aloud (Kong, 2006) and interview (Kong, 2006) are employed. Descriptive statistics, One-way ANOVA, t-test and correlation analysis have been used for the data analysis in these research works.

2.10 Summary

In order to provide a full picture of literature review, this chapter has presented the related literatures with regard to the reading strategy employment. The review initiated with defining reading and describing the importance of reading, the theoretical framework of reading which covers cognitive theory, metacognitive theory and schemata theory. Then the models of reading were presented as part of the review content. Based on the review for reading, an overall descriptive review about reading strategy and significance relevant to reading strategy was illustrated, in which research conducted in the relation to reading strategy were also reviewed and categorized homogenously in terms of common research purposes or results.

We can see that the literature review provide evidences either theoretically or practically to deep-understanding of the definitions of reading, definitions of reading strategy as well as reading strategy employment from a wide range of researchers' perspectives and research results. Through the extensive literature review, it can be drawn that reading strategy use is one of the factors which may

influence language learners' reading proficiency, as well as most of the study results reveal that effective readers are more aware of strategy use than less effective readers. As mentioned earlier, reviewing related literature could provide comprehensive and clear understanding of reading strategy employment by EFL readers. Meanwhile, through reviewing the past related research work, deep investigation to the instruments for data collection, variables, data analysis, etc. which were concerned by different scholars in their particular situation was demonstrated. Last but not least, examining the previous works contributes a better understanding of readers' strategy employment, which is preliminary but significant work for the present study. The next chapter is intended to focus on the research design and development of the present study.

CHAPTER 3

RESEARCH METHODOLOGY FOR

THE PRESENT STUDY

The purpose of this chapter is to discuss mainly the research methodology for the present study and the conceptual framework of the research as well as some general principles of research design for the present investigation. Further, research methods which include interviews, questionnaires and think-aloud protocols will be discussed with respect to the research works in reading strategy use. The theoretical framework for the present study, how the variables for the present investigation were selected, and how the data obtained were analysed, interpreted, and reported will be presented as well. Finally, the pilot study of the instruments and the procedure of data collection for the present investigation will be presented.

3.1 Introduction

Research design is a basic and systematic plan of research (Punch, 2005). The research design should describe the purposes of the study, how to obtain the subjects, how to follow methods or procedures, how to collect and measure data including how to analyse it (Johnson, 1977). Research must be guided by a research design from the very beginning, meanwhile, research design is concerned with

turning research questions into projects (Robson, 1993). As stated by Cohen and Manion (2002) and Robson (2002), research design is influenced and determined by the research purposes and research questions.

According to Seliger and Shohamy (1989), without a coherent plan, it is not possible to give concrete expression to hypotheses which have been developed from general questions nor is it possible to pursue answers to general questions, furthermore, there is no one plan for researching a question but there are many possible plans and different research types. Regarding the research types, Robson (1993) has suggested the appropriate use of three types of research, which are:

- Experimental studies: They are appropriate for explanatory studies with the 'how' and 'why' type of research questions. They are used to measure the effects of manipulating one variable on another variable as well.
- Survey studies: They are appropriate for descriptive studies with the 'who, what, where, how many and how much' type of research questions. These studies are used for collecting data from several groups of people, usually employing questionnaire or interviews.
- Case studies: They are appropriate for exploratory work with the 'how' and 'why' type of research questions. They are used for development of detailed, intensive knowledge about a single 'case', or of a small number of related 'cases'.

In addition, according to Robson (2002), the purposes of research works are classified in explanatory, descriptive and exploratory. For the explanatory purpose, a researcher seeks an explanation of a situation or problem. Moreover, the researcher tries to identify the relationships between aspects of the phenomenon. This type of research may be qualitative and/or quantitative. For the descriptive purpose, a researcher tries to portray an accurate profile of person, events or situations. The extensive previous knowledge or the situation is required to be researched or described, so that a research knows appropriate aspects on which to gather information. This type of research may be qualitative and/or quantitative. For the exploratory purpose, a researcher tries to find out what is happening in order to seek new sights, or to generate ideas and hypotheses for future research. This type of research is usually qualitative.

Since the purpose of the present study is to investigate a reading strategy employment of university students when reading English texts in the southwest part of China; therefore, survey study is the most appropriate for the present investigation. Based on the characteristics of research purposes mentioned above, the present research is also exploratory and descriptive, quantitative and qualitative.

3.2 Methods in Reading Strategy Research

As indicated by Robson (1993), research method is a crucial part to control the whole research process when conducting a research, further more, the general principle is that the research strategy or strategies, and the methods or

techniques employed, must be appropriate for the questions a researcher wants to answer. Reviewing the most frequently used research methods in the field of reading strategies would be essential for researchers to consider their research instrument suitable and appropriate for their research purposes.

Through the extensive reading of the literature review into reading strategy use, the researcher has found that reading strategy employment is mainly measured by the following methods: questionnaires (Barnett, 1988; Carrell, 1989a; Sheorey et al., 2001; Sariçoban, 2002; Anderson, 2003; Mokhtari and Reichard, 2004; Yigiter et al., 2005; Yang and Zhang, 2002; Meng, 2004; Liu, 2004; and Saengpakdeejit, 2009), think-aloud protocols (Hosenfeld, 1977; Block, 1986; Sarig, 1987; Anderson, 1991; Block, 1992; Raymond, 1993; Seng, 2006; Schellings et al., 2006; and Kong, 2006), and interviews (Ahmad and Asraf, 2004; Kong, 2006; and Saengpakdeejit, 2009). However, to date, no single method in the field has been reported as the perfect method (Cohen and Scott, 1996). This is because each method has both weak and strong points, but whatever method is chosen, the researcher must consider the main purpose of the study (Cohen and Scott, 1996). In the subsequent section, three most widely-used methods for conducting research in the area of reading strategies will be discussed to constitute a framework of methods for data collection for the present investigation. The methods include: 1) Questionnaires; 2) Think-aloud protocols; and 3) Interviews.

3.2.1 Questionnaires

According to Dörnyei (2003), the questionnaire has become one of the most popular research instruments applied in the social sciences, because asking questions is one of the most natural ways of gathering information. Based on the literature review for the present study in Section 2.9, we can see that questionnaire has been used as a predominant research tool together with protocols or interviews in reading strategy use research (e.g. Barnett, 1988; Carrell, 1989a; Sheorey et al., 2001; Sariçoban, 2002; Anderson, 2003; Mokhtari and Reichard, 2004; Yigiter et al., 2005; Yang and Zhang, 2002; Meng, 2004; Liu, 2004).

As defined by Reichards and Renanadya (2002), a questionnaire is a research instrument consisting of a set of questions on a research topic and other purposes of gathering information from respondents. Similarly, Brown (2001: 6) defines questionnaires 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.” Similar to oral interviews, 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 (Cohen and Scott, 1996).

As stated by Nunan (1992), there are two types of questionnaires: closed-ended form (or structured questionnaire) and open-ended form (or unstructured questionnaire). A closed-ended form is one in which the range of possible responses

is determined by the researcher. An open-ended form is one in which the subject can decide what to say and how to say it. The main advantage of closed-ended form is that the structure imposed on the respondents' answers provides the researcher with information which is of uniform length and in a form that lends itself nicely to being quantified and compared. On the other hand, the advantage of open-ended questionnaire is that the information gathered by way of the responses is more likely to reflect the full richness and complexity of the views held by the respondent (Denscombe, 2003). Generally, question items in written questionnaires can range from those asking for 'yes' or 'no' responses or indications of frequency to less structured items asking respondents to describe or discuss language learning strategies they employ in detail. They are also almost non-threatening when administered using paper and pencil under conditions of confidentiality (Oxford and Burry-Stock, 1995).

As mentioned earlier that no single method in the field has been reported as the perfect method. Like any other instrument, there are a few weak points with written questionnaires. For example, informants have little or no freedom in providing their own responses to the questions as choices for responses are normally provided, or the data may be superficial, even there is little or no check on honesty or seriousness of responses (Robson, 2002). Additionally, it is time-consuming to analyse the raw data from the open-ended questionnaire; but the close-ended questionnaires allow for less subtlety in the answers (Denscombe, 2003). More

importantly, while analysis may be easy, but time-consuming, interpretation can be problematic (Robson, 2002). This may be seen as a challenge for a novice researcher with regard to his or her own ability to deal with such limitations.

3.2.2 Think-aloud Protocols

According to Reichards et al. (1992), think-aloud protocol is a method that may be used to investigate learners' reading 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; and this method allows researchers to understand, at least in part, the thought process of a subject as the researchers use a product, device, or manual. Likewise, Nunan (1992: 117) defines think-aloud protocols as "those in which subjects complete a task or solve a problem and verbalise their thought processes as they do so. The researcher collects the think-aloud protocol on tape and then analyses it for the thinking strategies involved." Think-aloud protocols involve participants thinking aloud as they are performing a set of specified tasks. Participants are asked to say whatever they are looking at, thinking, doing, and feeling, as they go about their tasks. This enables researchers to see first-hand the process of task completion rather than only its final product. The main purpose of this method is to make explicit what is implicitly present in subjects who are able to perform a specific task (Ericsson and Simon, 1987).

Methods of think-loud have been used mainly to investigate the processes of translation and communication in a foreign language. Some researchers have used

this method to investigate language learning strategies of language learners, i.e. the researcher listens to learners as they think aloud. Oxford and Burry-Stock (1989) note that think-aloud protocols offer the most detailed information of all because the learner describes strategies while doing a language task, but these protocols are usually used only on a one-to-one basis. They also take a great deal of time, reflect strategies related only to the task at hand and are not summative across students for group information. Reviewing the previous research work with regard to reading strategy employment, the researcher has found that think-aloud protocol is one of the predominant methods for data collection. It has been solely used to collect data by Hosenfeld (1977), Block (1986), Sarig (1987), Anderson (1991), Block (1992), Raymond (1993), Seng (2006), Schellings et al (2006), and Kong (2006).

Arguing for a process-oriented research, Block (1986) used think-aloud protocols as her research method for the protocols would act as a kind of window into those usually hidden mental processes involved while reading. Block (1986: 464) suggests that “since think-aloud was developed by Newell and Simon in 1972 to study cognitive problem-solving, and that reading may also be considered a kind of problem-solving activity, and so think-aloud can be adapted for reading research.” To put it simply, this method provides a researcher with information of an individual rather than of a group. The procedure may also interfere with the task that the subject is carrying out.

3.2.3 Interviews

The interview is one of the main data collection tools in qualitative research and it is also one of the most powerful ways a researcher has of understanding the participants (Punch, 2005). Nunan (1989) and Robson (1993) define interview as a kind of directed conversation with a purpose, between an investigator and an individual or groups of individuals in order to gather useful information for the study. Ellis (1994) states that interview is an instrument which can be used to investigate students' language learning strategies by asking students to explain and describe what language learning strategies they use and how they use them when they dealing with language learning.

The use of interviews as an instrument begins with the assumption that the participants' perspectives are meaningful, knowable, and able to be made explicit, and that their perspectives affect the success of the task (Chamot, 2001). In addition, Denscombe (2003) states that interviews involve a set of assumptions and understandings about situation which are not normally associated with a casual conversation. Punch (2005) also indicates that interview is regarded as one of the most powerful ways that researchers employ to understand others. According to Nunan (1992), the oral interview has been widely used as a research tool in applied linguistics and it can be characterized in terms of their degree of formality, and most can be placed on a continuum ranging from unstructured through semi-structured to structured.

An unstructured interview is guided by the responses of the interviewee and the interviewer exercises little or no control over the interview. The interviewer does not enter the interview with a list of predetermined questions. This makes the direction of the interview relatively unpredictable. While in a semi-structured interview, the interviewer has a general idea of where he or she wants the interview to go, and what should come out of it. In a structured interview, the agenda is totally predetermined by the interviewer. Whatever type of interview a researcher wants to use as a method for data collection, he or she should consider the nature of the research and the degree of control he or she wishes to exert. Of the three types of interview mentioned above, the semi-structured interview has been favoured by many researchers, particularly those working within an interpretative research tradition (Nunan, 1992).

In investigating readers' reading strategies, a researcher can interview the learners to describe what language reading strategies they have used and how they use reading strategies to deal with aspects of language reading. Through the extensive literature review with regard to reading strategy employment, the researcher has found that of the three types of interview mentioned above, the semi-structured interview has been popular among researchers in the field (Ahmad and Asraf, 2004; Kong, 2006). This may be because of its flexibility. In addition, the semi-structured interview also gives the interviewee a degree of power and control over the course of the interview (Nunan, 1992).

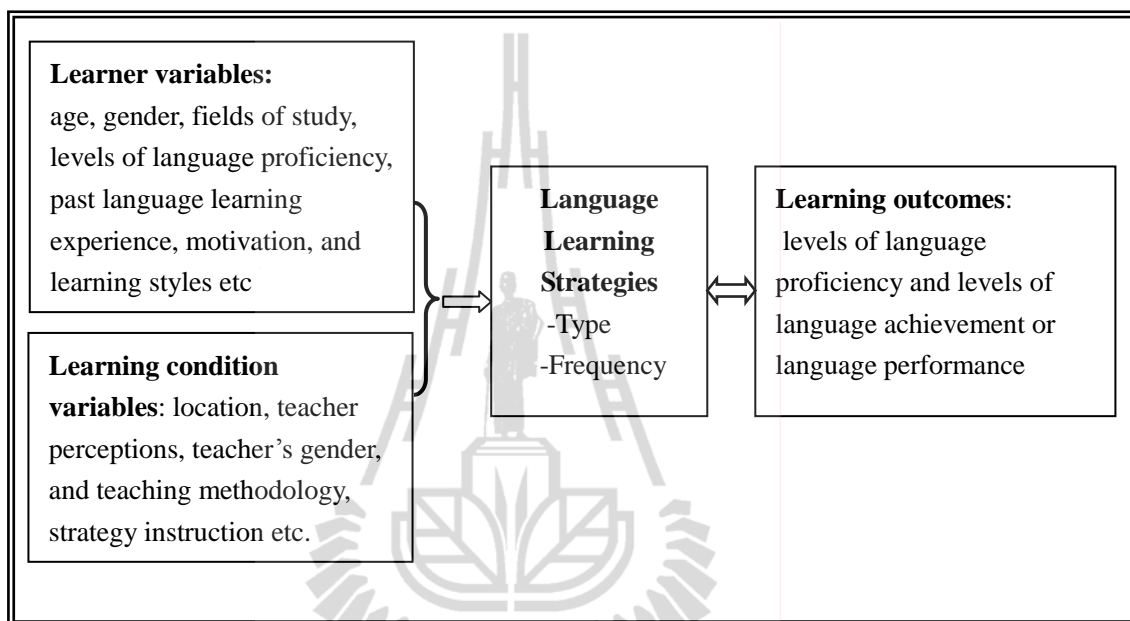
To sum up, at present, no single research method has been reported as the perfect method. The general principle is that the research strategy or strategies, and the methods or techniques employed, must be appropriate for the questions a researcher wants to answer. When choosing research method(s), every researcher should know clearly that each method has both weak and strong points, but whatever method the researcher employs, he or she must take the main purpose of the study into consideration. In this case, the method(s) can play an efficient role in the research.

In the following sections, the theoretical framework and selecting variables for the present investigation, research questions, sampling and rationales for choice of subjects, research population and characteristics of the subjects, data collection instruments, procedures and implementation and analysing and interpreting data will be discussed and presented.

3.3 Theoretical Framework and Selected Variables for the Present Investigation

According to Intaraprasert (2000), the review of the related research works, literature, and other materials in the area of reading strategies is helpful for researchers to develop their own theoretical framework, locate the present investigation in the context of past research works and the opinion of other researchers, and also create the rational variables for the study. Therefore, the main

purpose of this section is to develop the theoretical framework and select variables for the present investigation based on the related literature review and other materials on reading strategies.



(Source: Ellis 1994: 530)

Figure 3.1 Factors Affecting Learning Strategies and Learning Outcomes in the Past Research Works

Based on the theoretical framework proposed by Ellis (1994: 530) (Figure 3.1), types of language learning strategies and language frequency of learning strategy use have been hypothesized to be influenced by two major categories of variables, i.e. learner variables, which include age, gender, fields of study, levels of language proficiency, past language learning experience, motivation, and learning styles, etc; learning condition variables, including location, teacher's perceptions, teacher's gender, teaching methodology, and strategy instruction, etc. With regard to

learning outcomes (proficiency/achievement), the relationship between learners' learning strategy use and learning outcomes is bi-directional relationship. This can be described as learners' language learning strategy use (both type and frequency use) is resulted from learners' language proficiency; or learners' language proficiency can be a result of language learning strategy use.

Through an extensive research review in Chapter 2, the researcher has seen that a number of variables have been taken into consideration for investigation by researchers in the field of reading strategies, including gender (e.g. Raymond, 1993; Sheorey et al., 2001; and Anderson, 2003), reading proficiency (e.g. Hosenfeld, 1977; Block, 1986; Sarig, 1987; Barnett, 1988; Carrell, 1989a; Anderson, 1991; Block, 1992; Raymond, 1993; Sheorey et al., 2001; Sariçoban, 2002; Mokhtari and Reichard, 2004; Ahmad and Asraf, 2004; Yigiter et al., 2005; Schellings, et al., 2006; Yang and Zhang, 2002; Meng, 2004; Liu, 2004; and Kong, 2006).

Regarding the present research context, six variables (see Figure 3.2), i.e. students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading have been investigated in order to examine whether any of these variables are related to the choices of reading strategy use by Chinese university students when reading English texts. This may be because, even using the same variable to investigate the same thing, it may get different results if in different contexts of investigation, as Intaraprasert (2000) states that the variables which have been reported as positive relationship, or negative or no relationship with learners' use of strategies, depend on the investigation contexts.

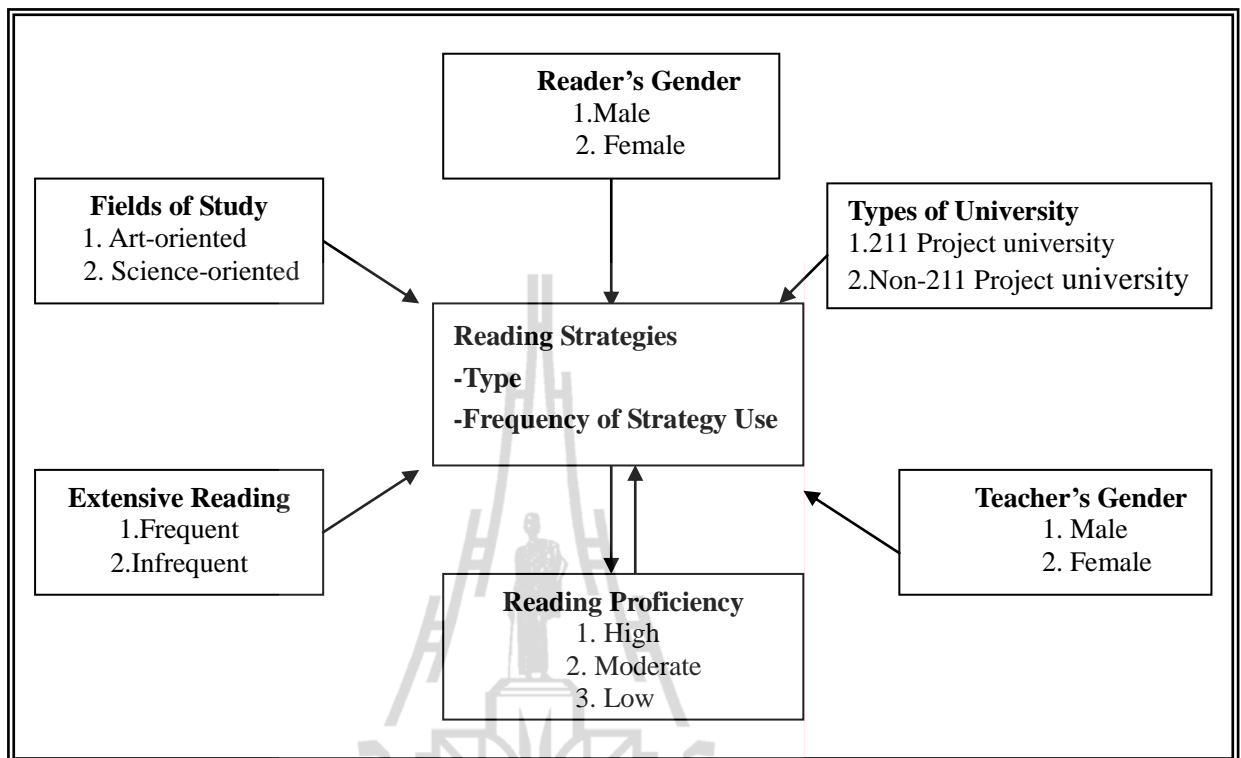


Figure 3.2 Theoretical Framework for the Present Study

The theoretical framework for the present research is based on the theoretical framework in Figure 3.1. The present theoretical framework has been presented to give a clear picture about types of reading strategies and readers' frequent use of reading strategies, which were predictably hypothesized to have a relationship with the six variables, i.e. students' gender (male and female), fields of study (art-oriented and science-oriented), levels of reading proficiency (low, moderate, and high), teachers' gender (male and female), types of university (211 Project university and non-211 Project university), and students' extensive reading (frequent and infrequent).

With regard to the reading proficiency, the relationship between learners' reading strategy use and reading proficiency is bi-directional. This can be described

as learners' reading strategy use (both type and frequency use) is resulted from learners' reading proficiency (high, moderate, and low); or learners' reading proficiency can be a result of reading strategy use. To be brief, six independent variables have been taken into consideration, including students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university and students' extensive reading. Reading strategy use is considered as a dependent variable in the present study.

Following is a discussion of basic assumptions about the relationship between readers' reading strategy use and the six investigated variables based upon the literature review and other researchers' opinions.

3.3.1 Students' Use of Reading Strategies and Students' Gender

Males and females have their own ways of using strategies to learn a foreign or second language (Intaraprasert, 2000). According to Ellis (1994), learner's gender is one of the factors which may influence their choices of strategy use to learn a foreign or second language. Based on the available previous research works on language learning, we could find that gender has a prominent impact on how students learn a language. The research works (Oxford, 1993; Oxford, 1995; Young and Oxford, 1997) reveal that females use certain strategies more often than males.

In the past research works on language reading strategy use, gender of subjects has also been taken into consideration (Sheorey and Mokhtari, 2001). The result revealed that females reported significantly higher frequency of strategy use than males. Though gender is an important factor which influence language

learning, Poole (2005) mentions that little research exists on whether or not males and females have similar or different strategic reading habits. Consequently, for the present research, it was worth investigating the relationship between gender and the use of foreign language reading strategies.

3.3.2 Students' Use of Reading Strategies and Fields of Study

Fields of study are classified into two main types in the present study: art-oriented and science-oriented. According to Ellis (1994), the fields of study is another factor which has an impact on the choices of language learning strategy use. Nevertheless, through the extensive research review on reading strategy works, many of them focus on the relationship between reading strategy use and language reading proficiency, a few focus on the relationship between reading strategy use and gender or L1 learning strategy transfer, but very few research works have been conducted to investigate the relationship between reading strategy use and the fields of study of students. Therefore, the present study has been intended to explore the actual relationship between fields of study and the choices of reading strategy use.

3.3.3 Students' Use of Reading Strategies and Reading Proficiency

Many researchers (Hosenfeld, 1977; Block, 1986, 1992; Sarig, 1987; Barnett, 1988; Carrell, 1989a; Anderson, 1991; Raymond, 1993; Sheorey and Mokhtari, 2001; Sariçoban, 2002; Ahmad and Asraf, 2004; Yigister et al., 2005; Schellings et al., 2006; Yang and Zhang, 2002; Meng, 2004; Liu, 2004; and Kong, 2006) conducted research studies to reveal the relationship between reading proficiency level and the choices of reading strategy use. Some research works

(Hosenfeld, 1977; Block, 1986; Barnett, 1988; Sheorey and Mokhtari, 2001) reveal that subjects of a higher level of reading proficiency tend to report using a greater range of language learning strategies than those with a lower level of reading proficiency. To put it simply, the research works have indicated that the readers who have a higher level of reading proficiency tend to report using a great range of reading strategies and more appropriate strategies than those who have a lower level of reading proficiency.

But differences in strategy use have also been examined by other past researchers. Anderson (1991), for example, finds that both high and low scoring readers appeared to be using the same kinds of strategies while answering the comprehension questions on both measures; however, high scoring students seemed to be applying strategies more effectively and appropriately. Anderson's study indicated that strategic reading is not only a matter of knowing which strategies to use, but also, the reader must know how to apply strategies successfully.

However, as Intaraprasert (2000) states that, with the same variable to investigate the relationship and strategy use may have different results due to the various contexts of the investigation. Therefore, it was worth investigating the relationship between reading proficiency levels and reading strategy employment in an EFL Chinese context instead of ESL context. In the previous research works, reading strategy proficiency level was normally classified as successful and unsuccessful, good and poor, or high and low, but in the present study, the researcher

classified the reading proficiency level as high, moderate, and low to see whether or not this difference has an effect on students' use of reading strategies.

3.3.4 Students' Use of Reading Strategies and Teachers' Gender

According to Ellis (1994), teacher's gender is also a factor which has an impact on the choices of language learning strategy use. Nevertheless, through the extensive research review on reading strategy works, the researcher did not find any empirical study conducting to investigate the relationship between reading strategy use and the teacher's gender. The present study, therefore, has been intended to explore the actual relationship between the teacher's gender and the choices of reading strategy use.

3.3.5 Students' Use of Reading Strategies and Types of University

The types of university in the present research are classified into two types: 211 Project university and non-211 Project university. According to Intaraprasert (2000), the type of institution is a factor which has an impact on the choices of language learning strategy use. Nevertheless, through the extensive research review on reading strategy works, there is not a particular research work has been conducted to investigate the relationship between reading strategy use and types of university. Therefore, the present study has been intended to explore the actual relationship between types of university and the choices of students' reading strategy use.

3.3.6 Students' Use of Reading Strategies and Extensive Reading

Grabe (1995) states that extensive reading not only has demonstrated positive influence on language skills, but also it may be the only genuine way for students to develop and maintain reading strategies, and become more strategic readers. However, through the extensive reading, the researcher has found that many studies focus on the relationship between reading proficiency and extensive reading, but very few research has been conducted to examine the impact of students' extensive reading on their reading strategy choice. The available research has been found conducted by Hayashi (1999).

The available research work, which is conducted by Hayashi (1999) quantitatively and qualitatively in Japanese context, aims to explore whether extensive reading can influence reader's reading strategy use. Her research findings reveal that extensive reading gives learners a rich background knowledge, vocabulary recognition, a high motivation for more reading, and becomes the basic skill of rapid reading, discovery of reading strategies by learners themselves, and increase guessing ability in context. Her results indicate that reading extensively in both L1 and L2/FL becomes basically the most factor which can influence readers' employment of reading strategy and for improving reading skills.

Therefore, in order to explore whether or not extensive reading has an impact on readers' choices of reading strategy use, the present study has been intended to explore the actual relationship between extensive reading and the choices of reading strategy use.

In summary, based on the present research objectives, theoretical framework for the present study, and extensive literature review, six independent variables have been taken into consideration in the present study, i.e. students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading.

3.4 Research Questions

The present investigation attempts to describe the reading strategies employed by university students reading English texts in Southwest China. According to the proposed relationship between learners' reading strategy use and each of the six selected independent variables, and the review of the past research works, as well as based on the research objectives, the questions of present research can be formulated. The investigation was designed to answer the following research questions:

- 1) How frequently are the different reading strategies reported being used by Chinese university students?
- 2) Do students' choices of reading strategies vary significantly with their gender? If they do, what are the main patterns of variation?
- 3) Do students' choices of reading strategies vary significantly with their fields of study? If they do, what are the main patterns of variation?
- 4) Do students' choices of reading strategies vary significantly with their reading proficiency levels? If they do, what are the main patterns of variation?

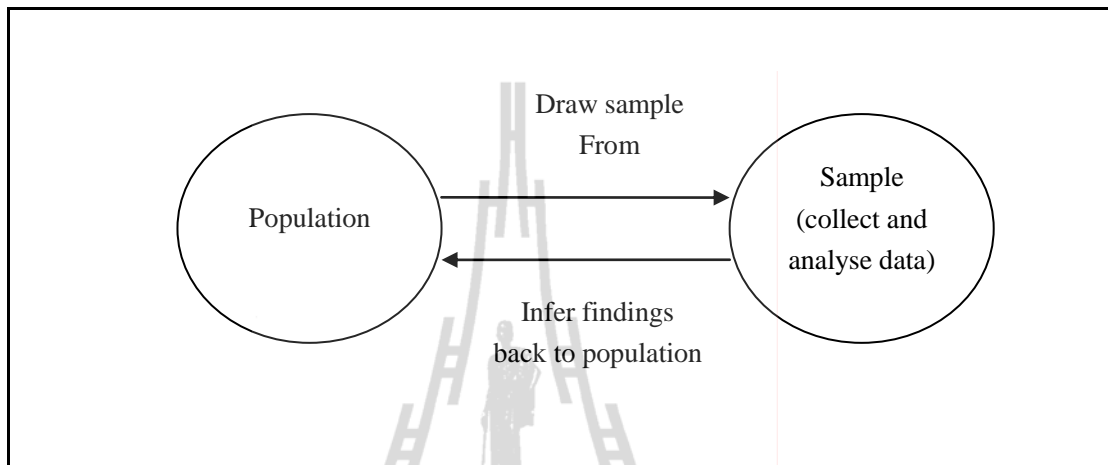
- 5) Do students' choices of reading strategies vary significantly with their teachers' gender? If they do, what are the main patterns of variation?
- 6) Do students' choices of reading strategies vary significantly according to the types of university at which they are studying? If they do, what are the main patterns of variation?
- 7) Do students' choices of reading strategies vary significantly according to the students' extensive reading? If they do, what are the main patterns of variation?
- 8) Why do students report employing certain strategies frequently and certain strategies infrequently?

3.5 Participants for the Present Investigation

3.5.1 Sampling and Rationales for Choice of Subjects

All research, including qualitative research, involves sampling, because no study, whether quantitative, qualitative or both, can include everything. As Miles and Huberman (1994: 27) state that, "You cannot study everyone everywhere doing everything". Punch (2005) points out that a sampling plan is not independent of the other elements in a research project, particularly its research purposes and questions. Robson (2002) and Dörnyei (2003) state that a sample is a subset of the population selected according to the needs and purposes of the study to which the researcher intends to generalize the results. In order to generalize from the findings of a survey,

the sample must not only be carefully selected to be representative of the population, it also needs to include a sufficient number (Denscombe, 2003).



(Source: Punch 2005: 102)

Figure 3.3 Relationship of Populations and Samples

According to Punch (2005), the logic of sampling (shown in Figure 3.3) is that the researcher analyses data collected from the sample, but wishes in the end to make statements about the whole target population from which the sample is drawn. The data are collected from the sample, and analysed to produce the study's findings. But the findings are still about the sample, so the next step is generalizing the findings from the sample to the population.

Bell (1999) points out that the number of subjects in an investigation necessarily depends on the amount of time of a researcher has. Additionally, Robson (2002), Cohen, Manion and Morrison (2000) indicate that there is not a straightforward answer to the sample size as it depends on many factors, such as the research purpose, objectives, research time constraints, the nature of the population

as well as the style of the research. For example, a survey style usually requires a large sample, particularly if inferential statistics are to be calculated.

Furthermore, according to Miles and Huberman (1994) and Cohen et al. (2000), it is impossible for a researcher to study the whole population. The common ways are to select a sample from the whole population to study, hoping the findings achieved from the sample can be applied to the whole, and a research should use an adequate sample size to serve the objective while it should not be too big to manage or too small to be appropriate (Denscombe, 2003; Dörnyei, 2003). More importantly, sampling is definitely necessary to cover the key aspects of the investigated variables (Intaraprasert, 2000).

3.5.2 Characteristics of the Participants

The main study was conducted in seven universities located in Guizhou Province, Yunnan Province and Sichuan Province. The participants in this study were 1,368 undergraduate students studying in the universities of Southwest China. The students were admitted to the universities for full-time academic study, ranged from year 2006 to 2007 and were enrolled in the majors of Maths, Physics, Chemistry, Chinese Literature, Politics, English, etc. In the sample (see Table 3.1), there were 488 males and 880 females, 860 art-oriented students and 508 science-oriented students, 191 low-, 705 moderate-, and 472 high-level reading proficiency students, 232 students reported studying with male teachers and 1,136 students reported studying with female teachers, 469 211-Project University students and 899

non-211-Project University students, 369 students reported reading extensively outside the classroom setting and 999 students reported not reading extensively outside the classroom setting.

Table 3.1 Numbers of Participants in Relation to Each Variable

| Variables | | Number | Overall Number |
|----------------------------------|----------------------|--------|----------------|
| Students' gender | Male | 488 | 1,368 |
| | Female | 880 | |
| Fields of study | Art-oriented | 860 | 1,368 |
| | Science-oriented | 508 | |
| Reading Proficiency Level | Low-level | 191 | 1,368 |
| | Moderate-Level | 705 | |
| | High-level | 472 | |
| Teachers' Gender | Male | 232 | 1,368 |
| | Female | 1136 | |
| Variables | | Number | Overall Number |
| Types of University | 211 Project Uni. | 469 | 1,368 |
| | Non-211 Project Uni. | 899 | |
| Extensive Reading | Frequent | 369 | 1,368 |
| | Infrequent | 999 | |

As the main purpose of this research question is to find out why the students reported employing certain strategies frequently and infrequently, instead of comparing students' answers according to the six variables. Therefore, the interviewees were selected according to their gender, major, and their universities. The other variables, i.e. levels of students' reading proficiency, students' extensive reading, and teachers' gender were not taken into consideration when the researcher selected the interview subjects. The interviewees' information is shown in Table 3.2 below.

Table 3.2 Information of Interview Participants (n=40)

| Gender | | Major | | Types of University | |
|--------|--------|---------------|---------------|---------------------|----------------------|
| Male | Female | Art-oriented. | Sci-oriented. | 211 Project Uni. | Non-211 Project Uni. |
| 17 | 23 | 22 | 18 | 20 | 20 |

3.6 Data Collection Instruments for the Present Investigation

When conducting a research, research method is a crucial part to control the whole research process. Based on Robson (1993), the general principle is that the research strategies, and the methods or techniques employed, must be appropriate for the questions a researcher wants to answer. According to Chaudron (1998), methodological approaches to the study of language learning are extremely varied, reflecting both a great diversity of research questions and purposes, and a range of theoretical perspectives on the conduct of research. As Cohen and Scott (1996) state that no single method in the field has been reported as the perfect method. That means each research method has both advantages and disadvantages. Creswell (2003: 12) provides implication to choose data collection methods for a researcher by stating that “Individual researchers have a freedom of choice. They are ‘free’ to choose the methods, techniques, and procedures of research that best meet their needs and purposes.”

Reviewing the recent used research methods in the field of reading strategies, it is found that the researchers in the previous studies normally use questionnaires, think-aloud protocols and interviews for collecting data. Since each

method has its own notable advantages and disadvantages, a researcher has to consider the crucial aspects of method of data collection to best suit his/her study purpose (Creswell, 2003).

Based on the research objectives (see Section 1.3), the researcher decided to employ a mixed data collection method and analysis in accordance with the research questions. Peng, Peterson and Yuh-Ping (1991: 105) state that, "...with the use of a combined quantitative-qualitative approach, we shall improve our capacity in revealing the holistic, naturalistic, and inductive aspects of the phenomena under investigation." Therefore, for the data collection of the present study, the written reading strategy questionnaire and the interview were used as the main instruments to elicit information about strategy use of the subjects to answer the proposed research questions. These two types of data collection methods were conducted with the university students in Southwest China.

3.6.1 Written Reading Strategy Questionnaire

In the present study, reading strategy questionnaire was employed as a main instrument for data collection at the first stage. This type of instrument is advantageous as suggested by Bialystok (1981) that a questionnaire can be easily administered to a large group of respondents and easily scored. Furthermore, Dörnyei (2003) indicates that by administering a questionnaire can collect a huge amount of information in a short time, especially, the researcher could interview the same subjects. In addition, if a questionnaire is well constructed, processing data can also be fast and relatively straightforward, especially by using some modern

computer software. Besides, Denscombe (2003: 144) suggests that “to qualify as a research questionnaire, it should be designed to collect information which can be used subsequently as data for analysis; consist of a written list of questions; and gather information by asking people directly about the points concerned with the research.” With the advantages and qualification of this kind of instrument, the researcher used it as the main research instrument in the first phase of the present investigation.

3.6.1.1 Constructing Reading Strategy Questionnaire

The written reading strategy questionnaire items for the present investigation have been developed mainly on the basis of Saengpakdeejit’s (2009) questionnaire. Other researcher’s questionnaire, for example, Oxford’s (1989) has also been taken consideration in order to construct a comprehensive questionnaire for the present investigation. The questionnaire for the present investigation was a 4-point rating scale. The scale has been valued as 1, 2, 3 and 4.

| |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 = never or almost never true of me 2 = somewhat true of me 3 = often true of me 4 = always or almost always true of me</p> |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Category 1: Adopted Items

The original strategy questionnaire for English reading (SQER) was designed by Saengpakdeejit (2009) which was employed to investigate the Thai university students’ employment of reading strategies in English learning. The

validity and reliability of the questionnaire have already been cross-checked and proved. Therefore, in total, 25 items with no change were adopted for constructing the questionnaire for the present study. These items were:

- searching for the meanings of new vocabulary items before reading the text;
- reading the title of the text before doing the actual reading;
- going through the text quickly before reading the text;
- reading the first and the last paragraphs before reading the text;
- looking at pictures/charts/tables/ figures in the text (if any) before reading the text;
- looking at questions about the text (if any) before reading the text ;
- scanning for main ideas before reading the text;
- thinking of one's background knowledge about the text before reading the text;
- reading the abstract or an introductory part before reading the text;
- predicting what might happen in the text before reading the text;
- searching for the meanings of new vocabulary items while reading the text;
- appealing for assistance from other people about the meaning of a new vocabulary item while reading the text;
- analysing a sentence structure while reading the text;
- taking notes the important information while reading the text;
- guessing the meaning of the text from context while reading the text;
- rereading certain part(s) of the text while reading the text;
- reading certain part(s) of the text slowly while reading the text;
- avoiding difficult parts while reading the text;
- highlighting important information or difficult vocabulary items by underlining while reading the text;
- highlighting important information or difficult vocabulary items by making symbol(s) while reading the text;
- searching for the meanings of new vocabulary items after reading the text;
- discussing the reading text with classmate(s) or friend(s) after reading the text;
- making a summary of the whole reading text after reading the text;
- retelling oneself or other people about what has been read after reading the text;
- reviewing one's own notes after reading the text.

Category 2: Slightly Changed Items

As the original SQER was designed for the Thai university students, therefore, four items with regard to the Thai context were changed into the Chinese context. These items were:

- Before changed: looking for the parallel article(s) in **Thai** (if any) before reading the text;
After changed: looking for the parallel article(s) in **Chinese** (if any) before reading the text.
- Before changed: thinking about the meaning of the reading text in **Thai** while reading the text;
After changed: thinking about the meaning of the reading text in **Chinese** while reading the text.
- Before changed: making a summary of certain part(s) of the reading text in either **Thai** or English, or both after reading the text.
After changed: making a summary of certain part(s) of the reading text in either **Chinese** or English, or both after reading the text.
- Before changed: translating the reading text into **Thai** using **Thai** script after reading the text.
After changed: translating the reading text into **Chinese** using **Chinese** script after reading the text.

Category 3: Deleted Items

The purpose of the present research was to investigate the frequency of reading strategy employment by university student in Southwest China, as well as to explore the relationship of reading strategy use and the selected variables, which are students' gender (male and female), fields of study (art-oriented and science-oriented), levels of reading proficiency (high, moderate, and low), teachers' gender (male and female), types of university (211 Project university and non-211 Project university) and students' extensive reading (frequent and infrequent). According to

Cohen and Scott (1996), written questionnaires are used to elicit learner responses to a set of questions, and they require the researchers to make choices regarding research questions and research purposes. Bearing this in mind, the researcher deleted the items which were repetitive or not concerning with the research purposes and research questions. The deleted items were:

- looking at the root of a new vocabulary;
- looking up the meaning of a new vocabulary item from electronics resources e.g. Talking dictionary, dictionary program in a computer, and the Internet;
- looking up the meaning of a new vocabulary item in a dictionary either Thai – English or English – Thai;
- using new vocabulary items to converse with classmates and friends;
- memorising new words with or without a list;
- reciting vocabulary items in rhymes;
- associating real objects with vocabulary items;
- associating the sound of a Thai word with that of a new English vocabulary item;
- tutoring one's classmate(s) or friend(s) about what was learnt in the reading class.

Category 4: Additional Items

According to Oxford (1989), affective strategies are factors influencing English learning, therefore, in while-reading stage, two items in relation to affective strategy have been taken into consideration and added. They were:

- trying to relax when one feels nervous when reading;
- encouraging oneself to keep on reading when encountering any difficulties.

Furthermore, at the after-reading stage, four items from Oxford (1989) have been taken into consideration and added. They were:

- reflecting one's performance;
- evaluating one's performance;
- giving oneself a reward or treat when one does well in reading;

- encouraging oneself to do better in the next time if one does not perform well in a particular reading.

Category 5: Opening Greeting and Additional Information

It is very important to ensure the respondents answer the questionnaire with knowing the purpose of investigation and answer the questionnaire with less fear and honesty (Intaraprasert, 2000). Dörnyei (2003: 26) states that the general instruction (or ‘opening greeting’) should cover the following points, which are the purpose and importance of the study; the organization responsible for conducting the study; requesting honest answers; promising confidentiality and appreciate. Therefore, the researcher bears the principles mentioned by Intaraprasert (2000) and Dörnyei (2003) in mind clarifying the purpose of the SQER and ensuring the confidentiality of the information provided by the subject at the beginning of it. The particular additional opening greeting is:

“I would like to ask you to help me by answering the following questions concerning reading strategy use by Chinese university students learning English as a foreign language. This survey is conducted to investigate the employment of English reading strategy by Chinese university students. This is not a test so there are no ‘right’ or ‘wrong’ answers. I am interested in your personal opinions. Please give your answer sincerely. Your answers will be only used in this research and will be treated with the utmost confidentiality. I appreciate your contribution to answer the questionnaire.”

Dörnyei (2003) further indicates that depending on circumstances, the questionnaire may contain, usually at the end, a short additional information section in which the author can address the respondent concerning a number of issues, for example, the researcher’s contact name with a telephone number to get in touch if there are any questions, a nice gesture, or sometimes with an invitation to volunteer

for a follow-up interview and a final ‘thank you’. In relation to the research questions, a follow-up interview was necessary for the present investigation. Therefore, the researcher’s contact information was given at the end of the SQER. Based on the modified items above, a summary of the questionnaire items is shown in Figure 3.4.

| | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| <p>Strategies for the before-reading stage:</p> <ol style="list-style-type: none"> 1) searching for the meanings of new vocabulary items; 2) reading the title of the text; 3) going through the text quickly; 4) reading the first and the last paragraphs; 5) looking at pictures/charts/tables/ figures in the text (if any); 6) looking at questions about the text (if any); 7) scanning for main ideas; 8) thinking of one’s background knowledge about the text; 9) reading the abstract or an introductory part; 10) looking for the parallel article(s) in Chinese (if any); 11) predicting what might happen in the text; <p>Strategies for the while-reading stage:</p> <ol style="list-style-type: none"> 12) searching for the meanings of new vocabulary items; 13) appealing for assistance from other people about the meaning of a new vocabulary item; 14) analysing a sentence structure; 15) taking notes the important information; 16) guessing the meaning of the text from context; 17) rereading certain part(s) of the text; 18) reading certain part(s) of the text slowly; 19) avoiding difficult parts; 20) highlighting important information or difficult vocabulary items by underlining; 21) highlighting important information or difficult vocabulary items by making symbol(s); 22) thinking about the meaning of the reading text in Chinese; 23) making a summary of certain part(s) of the reading text in either Chinese or English, or both; 24) trying to relax when one feels nervous when reading; 25) encouraging oneself to keep on reading when encountering any difficulties; <p>Strategies for the after-reading stage:</p> <ol style="list-style-type: none"> 26) searching for the meanings of new vocabulary items; 27) discussing the reading text with classmate(s) or friend(s); 28) making a summary of the whole reading text; 29) retelling oneself or other people about what has been read; 30) reviewing one’s own notes; 31) translating the reading text into Chinese using Chinese script; 32) reflecting one’s performance; 33) evaluating one’s performance; 34) giving oneself a reward or treat when one does well in reading; 35) encouraging oneself to do better in the next time if one does not perform well in a particular reading. | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|

Figure 3.4 A Summary of the Items in the English Reading Strategy Questionnaire (Contd.)

3.6.1.2 Piloting the Questionnaire

The reading strategy questionnaire was designed with main purpose of eliciting the frequency of students' reading strategy use. There were two main parts in the questionnaire: 1) the demographic information of the respondents; and 2) the question items for the reading strategy use. It was necessary to determine the students' demographic information in the questionnaire because it involved the main variables being investigated in the present study and the relationship between the reading strategy use of the respondents and the variables, i.e. students' gender, fields of study, teachers' gender, types of university and students' extensive reading.

The second part of the reading strategy questionnaire included three sections according to the three stages of reading, namely, the before-reading stage, the while-reading stage and the after-reading stage. The researcher did not expect that every respondent would employ every reading strategy listed in the questionnaire. Respondents had the freedom to indicate whether or not they actually employed some of these strategies to comprehend the reading texts.

It was possible that some respondents never employed any of these strategies at all. Therefore, each section of the questionnaire started with an introduction question asking whether or not the respondent tried to use techniques in order to understand what they have read. If the response was 'no', the respondent was asked to skip the following section. On the contrary, if the response was 'yes', the respondent was requested to look at the strategies which were employed while

he or she was reading; and then to choose the appropriate frequency of strategy use from the range ‘never or almost never true of me’, ‘somewhat true of me’, ‘often true of me’, or ‘always or almost always true of me’. Figure 3.5 shows a sample of the questionnaire used as the main instrument for the first phase of data collection in order to elicit the students’ frequency of reading strategy use.

1. Before reading English texts, do you look for any techniques to help you understand what you are going to read?

Yes No

If ‘No’, please stop here. If ‘Yes’, how often do you.....?

| Reading Strategy | Frequency of Your Own Reading Strategy Use | | | |
|-------------------------------------------------------|--------------------------------------------|------------------|---------------------|-----------------------|
| | Always or almost always | Often true of me | Somewhat true of me | Never or almost never |
| 0) searching for the meanings of new vocabulary items | ✓ | | | |

Figure 3.5 A Sample of the Reading Strategy Questionnaire

Fraenkel and Wallen (2000: 169) state that, “The quality of the instruments used in research is very important, for the conclusions researchers draw are based on the information they obtain using these instruments.” They indicate that validity of an instrument means the appropriateness, meaningfulness, and usefulness in relation to the purpose of the study; whereas, reliability means the consistency of responses from one administration of an instrument to another and from one set of items to another, for each individual.

Therefore, conducting a pilot study with the present questionnaire was extremely necessary in order to collect effective data from respondents and lead to efficient analysis in relation to the purpose of this study. This trial allowed the researcher to collect feedback about how the questionnaire worked and whether it performed the job it had been designed for (Dörnyei, 2003). Regarding piloting a questionnaire, the pilot study has several functions, principally to increase the reliability, validity and practicability of the questionnaire (Oppenheim, 1992). Dörnyei (2003) also mentions that a questionnaire that has appropriate and well-documented reliability in at least one aspect: internal consistency should be striven for.

In addition, piloting the questionnaire would highlight ambiguities and anomalies in the questioning, reveal irrelevances (Seliger and Shohamy, 1989); it would identify which closed questions were of most use (Dillon, 1990); it would test the analytical procedures to be used on the final data (Youngman, 1984). Intaraparasert (2000) mentions that piloting can help the researcher not only with wording of questions but also with procedural matters such as the ordering of question sequences and the reduction of non-response rates.

Having taken the theories into consideration, the researcher conducted a pilot study before the main study. Cross-check was conducted via experts and the supervisor to ensure the validity and reliability of the questionnaire. Further, to ensure greater accuracy of research results, as well as to help maximize ease of administration, the present questionnaire was translated into Chinese. The main

purpose of the Chinese version was to avoid the misunderstanding by the research respondents to the questions. It was also used to ensure greater accuracy of results especially with the students with low proficiency in English academic reading (Siriwan, 2007).

The Chinese version was checked for the correct language usage by the researcher and three Chinese colleagues teaching English for many years in Tongren University. This process is very important as suggested by Denscombe (2003) that the wording of the questions is very important to get right. It was found that some question items were not very clear and needed refinements accordingly. After the refinement of the question items, the questionnaire was ready to be administered in the pilot study.

The pilot study was carried out at Tongren University from April to May, 2010. In the piloting stage, 192 students studying in Chinese Literature, Politics, Chemistry and Maths participated in the pilot study. These students, who were from the research population, were selected by the researcher on the basis of convenience and availability.

In the present investigation, to check the internal consistency of the reliability of the reading strategy questionnaire, Alpha Coefficient (α) or Cronbach Alpha was used. The internal consistency referring to the homogeneity of the items making up the various multi-item scales with the questionnaire is a figure ranging between zero and +1, with a higher value of .70 or greater indicating a scale with

satisfactory degree of reliability. The reliability estimate based on 192 students in the piloting stage was .91, which was high when compared with the acceptable reliability coefficient of .70, which is the rule of thumb for research purposes (Fraenkel & Wallen, 2000). The reliability estimate based on 1,368 students in the main study was .94 (See Table 3.3).

Table 3.3 Reliability Estimate of the Reading Strategy Questionnaires as a Whole and in the Three Main Categories (SBS, SWS, and SAS)

| Reading Strategy Category | Strategy Questionnaire as a Whole | Strategies Before-reading Stage (SBS) | Strategies While-reading Stage (SWS) | Strategies After-reading Stage (SAS) |
|----------------------------------------------------|-----------------------------------|---------------------------------------|--------------------------------------|--------------------------------------|
| Reliability Estimate (Alpha Coefficient α) | .94 | .88 | .92 | .88 |

3.6.2 Semi-structured Interview

Though questionnaires carry many merits, some serious limitations are avoidable in research (Dörnyei, 2003), particularly by administering questionnaires, it is difficult for a researcher to gather information that is rich in-depth and detail (Nunan, 1992; Richards and Renanadya, 2002). However, Gillham (2000: 1, cf Dörnyei, 2003) points out that in research methodology “no single method has been so much abused.” With regard to the present investigation, in terms of gathering rich and in-depth information from the subjects to answer the research questions, the face-to-face interview was employed for the present investigation. According to Punch (2005: 242), “Qualitative research may facilitate the interpretation of relationships between variables”. He also indicates that quantitative research allows a researcher to establish relationships among variables, but is often weak when it

comes to explore the reasons for those relationships; however, a qualitative study can be used to help explain the factors underlying the broad relationships that are established. As mentioned in Section 3.2.3, interview is regarded as one of the widely used research tools that researchers employ to understand others (Nunan, 1992). Among unstructured interview, semi-structured interview and structured interview, the semi-structured interview has been favoured by many researchers for its great flexibility in data collection (Nunan, 1992; Punch, 2005).

3.6.2.1 Constructing Semi-structured Interview Questions

Cohen et al. (2000) point out that the strengths of interview guide approach or semi-structured interview includes: 1) the outline increases the comprehensiveness of the data and makes data collection somewhat systematic for each respondent; 2) logical gaps in data can be anticipated and closed; and 3) interviews remain fairly conversational and situational. In addition, Punch (2005) indicates that different types of interview have different strengths and weaknesses, and different purposes in research, therefore, the type of interview selected should be aligned with the research purposes and research questions. Bearing these in mind, the researcher has decided to take semi-structured interview into consideration as data collection method in the present investigation.

The purpose of the interview was to elicit in-depth information on the subjects' reading strategy use. The semi-structured interviews were conducted in the second phase of data collection after the questionnaires have been administered. The interviews were used to triangulate the data and to provide further

insights into the subjects' reading strategy employment. They were interviewed to obtain more detailed data to answer the Research Question 8, namely, 'Why do students report employing certain strategies frequently and certain strategies infrequently?' The questions of the semi-structured interviews were designed based on the research purposes and research questions, which were checked by the supervisor and other experts for ensuring its validity and reliability.

The followings were the examples of the interview questions used in the second phase for data collection. In order to build the good relationship between the interviewer and the interviewees, and also reduce the interviewees' embarrassment in the interview environment (Measor, 1985, cf Intaraprasert, 2000), questions at the beginning of interview which were about the respondents' background information will be presented, e.g. What is your name? What is your major? etc. The majority of the interview questions were designed on the bases of research purposes and research questions, which focused on the students' reading strategy use when they read English texts, e.g. Why do you use certain strategies frequently and certain strategies infrequently before reading English texts? What follow were the guide questions for the semi-structured interview:

1. What is your name and major?
2. Do you think that English reading is important in your present study?
Why or why not?
3. Do you encounter any problems when reading English texts? If you do,
what problems to you have?

4. Why do you use certain strategies frequently and certain strategies infrequently before reading English texts?
5. Why do you use certain strategies frequently and certain strategies infrequently while reading English texts?
6. Why do you use certain strategies frequently and certain strategies infrequently after reading English texts?
7. Do you have any suggestions for the teaching or learning English reading in the future?

3.6.2.2 Piloting the Semi-structured Interview

According to Intaraprasert (2000), the purposes of piloting an interview are: 1) to see if the questions work properly. That is, whether the subjects who are interviewed provide information which the researcher can make use of for serving the research purposes and questions; 2) to see if there is anything wrong with the question items, question sequences, way of interview including other factors like timing, recording, or other technical problems that may occur in the actual data collection scheme.

Cross-check was conducted via experts and the supervisor to ensure the validity and reliability of the interview questions. Additionally, to ensure greater accuracy of research results, especially for the convenience of student participants, the present interview questions was translated into Chinese. The researcher's colleagues who were experts in university ELT and research design were invited to discuss the Chinese wording of the translation and cross-check for the validity of the interview questions in order to avoid any ambiguity.

After the interview questions were ready to be used for investigation, the questions were piloted with eight students in order to see all questions were made clear for the interviewees. The students for piloting the interview were selected from the questionnaire respondents, but not participated for the main study, of which four were art-oriented students, including two girls and two boys; four were science-oriented students, including two girls and two boys.

The researcher started the interviews by having a meeting with all eight students and informing them of the purpose of the interviews, making an appointment with each student. The actual interviews took place at the researcher's office on campus of Tongren University. Every interviewee was very co-operative and agreed that the tape-recording could be made. Each interview lasted between ten to twenty minutes.

Then the interviews were transcribed and analysed. The researcher looked through the transcriptions in order to get the overall picture of the students' answers from the interviews and each transcription was looked through in details in order to look for similarities. Then the answers that were similar were grouped together. With the comments from those who participated in the pilot interview and a discussion with the supervisor, the interview questions were refined for the use of the main study.

3.6.3 Reading Comprehension Test

The purpose of this section is to provide the theoretical background for the test construction as well as to present the process of constructing the test used to

determine students' reading proficiency. The test is referred to as 'Reading Comprehension Test in English' or RCTE (see Appendix I).

Tests are capable of eliciting the specific kinds of behaviour that the test user can interpret as evidence of the attributes or abilities which are of interest (Bachman, 1990). As Intaraprasert (2000) states that there may be more than one way to determine students' levels of reading proficiency or ability for a researcher, for example, making use of students' previous records or basing his/her determination on students' own perception. However, according to Hill (1995), teacher's estimates of students' abilities based on face-to-face interaction may not be reliable. By comparison, the test scores may be a more reliable reflection of students' abilities (Intaraprasert, 2000).

3.6.3.1 Theoretical Framework for Constructing Reading Comprehension Test

The primary purpose of this test was to measure the levels of reading proficiency of the Chinese university students who were the subjects for the present investigation. The theoretical foundations on which RCTE were based were those of Clapham (1993), Faust (2002) and other researchers. The foundations which the researcher considers as a guide in RCTE constructing include:

- 1) Coleman (1991) suggests that the tasks should be as authentic as possible and the making of the test items should be reasonably straightforward. Gower, Roger, Philips, Diane, and

Walters (1995) indicate that authenticity refers to the degree to which materials have the qualities of natural speech and writing. The reading passages should be taken from authentic sources, for example, magazines, books, newspaper articles, etc., but they could be modified to remove ambiguities or grammatical errors.

2) Clapham (1993) and Faust (2002) propose that, to demonstrate students' level of reading comprehension, students should be able to perform tasks which include:

- Identifying content
- Identifying a sequence of events and procedures
- Finding main ideas
- Identifying ideas in the text, and relationships between them e.g. probability, solution, cause, effect
- Identifying relationships
- Reaching a conclusion by relating supporting evidence to the main idea
- Exploring ideas
- Drawing logical inferences
- Drawing conclusion

3) The reading comprehension test should contain enough items to allow students to demonstrate their reading proficiency within a limited time and it must be reliable (Bensoussan, 1984).

4) Reliability of the test alone does not create sufficient grounds for confidence in using it as an indicator of reading ability, validity of the test should also be taken into consideration (Vincent, 1985).

- 5) As important as reliability and validity of the test, level of difficulty and power of discrimination of the test must be taken into consideration as the basis of test item selection (Mehrens and Lehmann, 1978, cf. Intaraprasert, 2000).

According to Intaraprasert (2000), it is also very important for the researcher to take the testing method into consideration in order to get the most valid and reliable results of the test scores of the students. Different methods have different effects on how knowledge is measured and consequently on the scores that students obtain as a result of the test. Alderson (2000) points out that there is no one 'best method' in testing reading, but the safest way to measure the reader's ability is to use multiple approaches for testing reading comprehension and not to rely solely on one method.

Due to some constraints such as time, or the number of test items, it is impossible for the researcher to measure every aspect proposed by Clapham (1993) and Faust (2002) in Section 3.3.4.3 (2). Bearing the theoretical foundations for reading test construction in mind, the researcher has decided to construct RCTE for the present investigation with the following types of tasks.

- Choosing appropriate words, phrases, etc. from the text
- Completing sentences, up to three words only
- Multiple choice
- Matching
- Rearranging
- True or false
- Filling the blanks
- Cloze

When choosing reading passages, the researcher made rough estimates of length and level of difficulty based largely on her own experience as a teacher. In the present RCTE, Reading Passages 1, 4 and 5 were originally selected from CET-4 Bank, Reading Passage 2 was selected from Faust (2002) and Reading Passage 3 was from BBC website.

The reason why the researcher selects a majority of the reading passages from CET-4 relies on that CET-4 is a national standardized English proficiency test sponsored by Higher Education Department of the Ministry of Education in China and the National College English Testing Committee. It is a criterion-related norm-referenced test aims to evaluate university students' English proficiency in China (Yang and Weir, 1999). To check the validity of CET, the National College English Test Committee conducted a 3-year project (from 1995 to 1998) with the British Council, in which the construct validity, content validity, concurrent validity and face validity of CET were studied through comparison tests and large-scale surveys. It is concluded that CET is of high reliability (0.90) (Yang and Weir, 1999). The reliability and validity are believed to have far lived up to the requirement (Dai, 2009) and the difficulty level of CET reading passages is not too difficult or too easy, of which the topics are from authentic materials (Yang and Weir, 1999).

As a result, the present RCTE included five reading passages, in which altogether 71 question items were provided, including Item13 which was

given as an example. Table 3.4 shows the components of RCTE for the present study. The types of tasks, numbers of items, and time allocation for each component are presented in the table (see Table 3.4).

Table 3.4 Components of Reading Comprehension Test for the Present Study

| Components | Types of Tasks | No. of Items | Total Numbers of Items | Time Allocation |
|------------|-------------------------------------|--------------|------------------------|-----------------|
| Passage 1 | Multiple choice | 1-7 | 10 | 13 minutes |
| | Completion | 8-10 | | |
| Passage 2 | Rearranging | 11-22 | 16 | 20 minutes |
| | Multiple choice | 23-26 | | |
| Passage 3 | True or False | 27-31 | 17 | 20 minutes |
| | Matching | 32-37 | | |
| | Completion | 38-43 | | |
| Passage 4 | Filling the blanks with given words | 44-53 | 10 | 12 minutes |
| Passage 5 | Cloze | 54-71 | 18 | 15 minutes |

- **Reading Passage 1: How Do You See Diversity?**

This reading passage includes 10 items (Numbers 1-10). Students were required to complete reading and multiple choice as well as blank-filling tasks within 13 minutes. To demonstrate their reading proficiency, students were expected to perform the following types of task for this passage:

- Numbers 1-7: Four-option multiple choice for testing students' identifying definition ability, identifying inference ability, drawing conclusion ability, exploring idea ability, etc.
- Numbers 8-10: Completing the sentences with the information given in the passage. This task was designed to test whether students can identify inferences, find main ideas.

- **Reading Passage 2: The Story of Harvey the Pigeon**

This reading passage includes 16 items (Numbers 11-26). Students were required to complete reading and multiple choice as well as blank-filling tasks within 20 minutes. To demonstrate their reading proficiency, students were expected to perform the following types of task for this passage:

- Numbers 11-22: Rearranging aimed to test students' identifying sequence ability.
- Numbers 23-26: Four-option multiple choice task was designed to test whether students' can make inferences.
- Numbers 27-28: Four-option multiple choice task was designed to test whether students' can find main ideas from the text.

- **Reading Passage 3: What's a Healthy Weight?**

This reading passage includes 17 items (Numbers 27-41). Students were required to complete reading and multiple choice as well as blank-filling tasks within 20 minutes. To demonstrate their reading proficiency, students were expected to perform the following types of task for this passage:

- Numbers 29-34: True or False task was designed to test whether students can draw conclusions from the text.
- Numbers 35-39: Matching aimed to test students' identifying cause and effect ability, and find relationship between main ideas in the text.
- Numbers 40-43: Completion was designed to test students' making inference ability, identifying content ability.

- **Reading Passage 4**

This reading passage includes 10 items (Numbers 42-52). Students were required to complete reading and multiple choice as well as blank-filling tasks

within 12 minutes. To demonstrate their reading proficiency, students were expected to perform the following types of task for this passage:

- Numbers 44-53: Filling the blanks with selected words given in a word list. This task was designed to test whether students can compare facts, identifying content, draw solution, etc.
- **Reading Passage 5**

This reading passage includes 18 items (Numbers 53-71). Students were required to complete reading and multiple choice as well as blank-filling tasks within 15 minutes. To demonstrate their reading proficiency, students were expected to perform the following types of task for this passage:

- Numbers 44-53: Cloze was designed to test students' comprehensive ability in many aspects, for example, comprehending the text, identifying cause, effect, probability.

To sum up, the RCTE comprised 71 question items (including Item 13 which was given an example), and types of task vary for each part. The total suggested time for students to complete RCTE was 80 minutes. In conducting the present research, for the sake of a direct view of the students' scores, each item was assigned a score of one, thus, the total score for 70 items (excluding Item 13) was 70. Based on the students' test performance, the participants were classified into the high level proficiency group with the top scoring third, ranging from 48 to 70; the moderate level proficiency group with the middle scoring third, ranging from 24 to 47; and the low level proficiency group with the bottom scoring third, ranging from 0 to 23.

3.6.3.2 Item Analysis

As mentioned earlier, the primary purpose of this reading comprehension test was to measure the levels of reading proficiency of the Chinese university students who were the subjects for the present investigation. In marking the test items, the correct answer was given '1' and the incorrect or unanswered item was given '0'.

The students' test scores obtained through the piloting stage were used for item analysis in order to see the quality of each item, and whether it could be changed or improved. Item analysis is a process which examines student responses to individual test items (questions) in order to assess the quality of those items and of the test as a whole. Item analysis is especially valuable in improving items which will be used again in later tests, but it can also be used to eliminate ambiguous or misleading items in a single test administration.

According to Mehrens and Lehmann (1978), item analysis is the process of examining the students' responses to each test item to judge the quality of the item. Additionally, Hughes (1989: 160) makes a comment about the importance of an 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."

Traditionally, there two measures which are calculated for each objective test item, i.e. the facility value (the percentage of students to answer an

item correctly), and the discrimination index, that is, how well an item distinguishes between student at different level of ability (Anderson et al, 1995). The former measures the level of difficulty of an item, and the latter measures the extent to which the results of an individual item correlate with results from the whole test. There are a variety of different item-analysis procedures. For the present investigation, the ‘third technique’ was employed in carrying out the item analysis. With this technique, the students’ scores were grouped into the top scoring third, middle third and the bottom third. For each item, a table was constructed showing how many students in the top and bottom scoring thirds got the answer correct. These top and bottom scoring thirds were chosen to be used with the statistical method in order to calculate the level of difficulty and power of discrimination of each test item. Mehrens and Lehmann (1978) suggest that this technique is suitable when the number of subjects taking the test is over one hundred (in this case one hundred and ninety-two).

For each item, the researcher computed the item Facility Value or level of difficulty by using the following formula:

$$\text{Difficulty} = \frac{R}{T} \times 100$$

where **R**= number of students who answered item correctly

T= total number of student in the two groups (high and low)

(Mehrens and Lehmann, 1978: 326)

For the item discrimination index or power of discrimination for each item, it is performed by subtracting the number of students in the low group who answered item correctly (R_L) from the number in the high group who got the item right (R_H), and dividing by the number of students in either group. This can be represented thus:

$$\text{Discrimination} = \frac{R_H - R_L}{(1/2)T}$$

Meherens and Lehmann (1978) state that the higher the power discrimination, the better, and that the level of difficulty is dependent upon many factors, the most important ones being the purpose of the text and the type of objective items used. Ideally, for the present investigation, any test items with the value .20-.80 for the level of difficulty and .20-1.00 for the power of discrimination are considered acceptable and no change or improvement is needed as suggested in Garrett (1966, cf. Castillo, 1990). As the test for the present investigation is examined as a whole rather than as individual parts, it should also comprise both very easy and very difficult items for motivational purposes. The results of the item analysis provided the researcher with many valuable insights for the test evaluation, for example, they helped the researcher judge the worth or quality of the test; they were of help in subsequent test revision; and they provided a basis for discussing test results.

Initially, in selecting acceptable or good test items, the researcher took into consideration the level of difficulty and power of discrimination as a result of item analysis. For those items which did not meet the set acceptable criteria as previously mentioned, it is important that the researcher recognize that careful inspection of the item itself was needed before making any changes (Mehrens and Lehmann, 1978). What follow are the results of the item analysis of the five reading passages (Tables 3.5-3.9). The number of students in high and low groups who got the item correct are shown, as well as the values of level of difficulty and power of discrimination of each item. The remark is given to indicate any test item which was acceptable and discarded.

Table 3.5 Results of Item Analysis of Reading Passage 1 (Items 1-10)

| Item Number | | High (n=61) | Low (n=62) | Level of Difficulty | Power of Discrimination | Remark |
|-------------|-------|----------------|---------------|------------------------|----------------------------|-------------------|
| Pilot | Final | | | | | |
| 1 | 1 | 49 | 30 | .64 | .31 | Acceptable |
| 2 | - | 14 | 5 | .15 | .15 | *Discarded |
| 3 | 2 | 44 | 27 | .58 | .28 | Acceptable |
| 4 | - | 7 | 6 | .11 | .02 | *Discarded |
| 5 | 3 | 53 | 28 | .66 | .41 | Acceptable |
| 6 | 4 | 47 | 19 | .54 | .46 | Acceptable |
| 7 | 5 | 42 | 28 | .57 | .23 | Acceptable |
| 8 | 6 | 52 | 26 | .63 | .42 | Acceptable |
| 9 | 7 | 27 | 11 | .31 | .26 | Acceptable |
| 10 | 8 | 27 | 12 | .32 | .24 | Acceptable |

Table 3.5 reveals that eight items were acceptable as good test items because they met the acceptable criteria for both the level of difficulty and the power of discrimination (numbers 1, 3, 5, 6, 7, 8, 9 and 10). Two items

(numbers 2 and 4) were discarded as they were extremely difficult and the power of discrimination was extremely low.

Table 3.6 Results of Item Analysis of Reading Passage 2 (Items 11-26)

| Item Number | | High (n=61) | Low (n=62) | Level of Difficulty | Power of Discrimination | Remark |
|-------------|-------|------------------------------------------------|---------------|------------------------|----------------------------|-------------------|
| Pilot | Final | | | | | |
| 11 | 9 | 43 | 11 | .44 | .52 | Acceptable |
| 12 | 10 | 45 | 16 | .50 | .47 | Acceptable |
| 13 | 11 | This item was given as an example in the test. | | | | |
| 14 | 12 | 42 | 8 | .41 | .55 | Acceptable |
| 15 | 13 | 51 | 28 | .64 | .37 | Acceptable |
| 16 | 14 | 45 | 11 | .46 | .55 | Acceptable |
| 17 | 15 | 47 | 11 | .47 | .59 | Acceptable |
| 18 | 16 | 40 | 14 | .44 | .42 | Acceptable |
| 19 | 17 | 44 | 8 | .42 | .59 | Acceptable |
| 20 | 18 | 48 | 11 | .48 | .60 | Acceptable |
| 21 | 19 | 38 | 22 | .49 | .26 | Acceptable |
| 22 | 20 | 45 | 28 | .59 | .28 | Acceptable |
| 23 | - | 9 | 6 | .12 | .05 | *Discarded |
| 24 | 21 | 30 | 17 | .38 | .21 | Acceptable |
| 25 | 22 | 47 | 33 | .65 | .23 | Acceptable |
| 26 | 23 | 29 | 13 | .34 | .26 | Acceptable |

Table 3.6 demonstrates that fourteen items were acceptable as good test items because they met the acceptable criteria for both the level of difficulty and the power of discrimination (numbers 11, 12, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25 and 26). One item (number 23) was discarded as it was extremely difficult and the power of discrimination was extremely low.

Table 3.7 Results of Item Analysis of Reading Passage 3 (Items 27-41)

| Item Number | | High (n=61) | Low (n=62) | Level of Difficulty | Power of Discrimination | Remark |
|-------------|-------|----------------|---------------|------------------------|----------------------------|-------------------|
| Pilot | Final | | | | | |
| 27 | 24 | 55 | 35 | .73 | .33 | Acceptable |
| 28 | 25 | 52 | 30 | .67 | .36 | Acceptable |
| 29 | 26 | 56 | 30 | .70 | .42 | Acceptable |
| 30 | - | 54 | 53 | .87 | .05 | *Discarded |
| 31 | 27 | 50 | 35 | .69 | .24 | Acceptable |
| 32 | - | 53 | 51 | .85 | .03 | *Discarded |
| 33 | 28 | 59 | 32 | .74 | .44 | Acceptable |
| 34 | 29 | 49 | 26 | .61 | .37 | Acceptable |
| 35 | 30 | 53 | 31 | .68 | .36 | Acceptable |
| 36 | 31 | 55 | 33 | .72 | .36 | Acceptable |
| 37 | 32 | 51 | 21 | .59 | .49 | Acceptable |
| 38 | 33 | 50 | 29 | .64 | .34 | Acceptable |
| 39 | 34 | 52 | 29 | .67 | .37 | Acceptable |
| 40 | 35 | 50 | 26 | .62 | .39 | Acceptable |
| 41 | 36 | 67 | 30 | .77 | .60 | Acceptable |

Table 3.7 demonstrates that thirteen items were acceptable as good test items because they met the acceptable criteria for both the level of difficulty and the power of discrimination (numbers 27, 28, 29, 31, 33, 34, 35, 36, 37, 38, 39, 40, and 41). Two items (numbers 30 and 32) were discarded as they were extremely easy and the power of discrimination was extremely low.

Table 3.8 Results of Item Analysis of Reading Passage 4 (Items 42-52)

| Item Number | | High (n=61) | Low (n=62) | Level of Difficulty | Power of Discrimination | Remark |
|-------------|-------|----------------|---------------|------------------------|----------------------------|------------|
| Pilot | Final | | | | | |
| 42 | 37 | 49 | 28 | .63 | .34 | Acceptable |
| 43 | 38 | 49 | 20 | .56 | .47 | Acceptable |
| 44 | 39 | 30 | 9 | .32 | .34 | Acceptable |
| 45 | 40 | 44 | 16 | .49 | .46 | Acceptable |
| 46 | 41 | 25 | 8 | .27 | .28 | Acceptable |
| 47 | 42 | 38 | 9 | .38 | .47 | Acceptable |

Table 3.8 Results of Item Analysis of Reading Passage 4 (Items 42-52) (Contd.)

| Item Number | | High (n=61) | Low (n=62) | Level of Difficulty | Power of Discrimination | Remark |
|-------------|-------|----------------|---------------|------------------------|----------------------------|-------------------|
| Pilot | Final | | | | | |
| 48 | 43 | 36 | 18 | .44 | .29 | Acceptable |
| 49 | 44 | 27 | 8 | .29 | .31 | Acceptable |
| 50 | - | 12 | 3 | .12 | .14 | *Discarded |
| 51 | 45 | 34 | 9 | .35 | .41 | Acceptable |
| 52 | - | 10 | 2 | .10 | .13 | *Discarded |

Table 3.8 demonstrates that nine items were acceptable as good test items because they met the acceptable criteria for both the level of difficulty and the power of discrimination (numbers 42, 43, 44, 45, 46, 47, 48, 49, and 51). Two items (numbers 50 and 52) were discarded as they were extremely difficult and the power of discrimination was extremely low.

Table 3.9 Results of Item Analysis of Reading Passage 5 (Items 53-71)

| Item Number | | High (n=61) | Low (n=62) | Level of Difficulty | Power of Discrimination | Remark |
|-------------|-------|----------------|---------------|------------------------|----------------------------|-------------------|
| Pilot | Final | | | | | |
| 53 | 46 | 41 | 22 | .51 | .31 | Acceptable |
| 54 | 47 | 29 | 15 | .44 | .23 | Acceptable |
| 55 | 48 | 41 | 21 | .50 | .33 | Acceptable |
| 56 | 49 | 36 | 19 | .45 | .28 | Acceptable |
| 57 | 50 | 41 | 23 | .52 | .29 | Acceptable |
| 58 | 51 | 37 | 17 | .44 | .33 | Acceptable |
| 59 | 52 | 32 | 15 | .38 | .28 | Acceptable |
| 60 | 53 | 28 | 13 | .33 | .24 | Acceptable |
| 61 | - | 6 | 2 | .07 | .06 | *Discarded |
| 62 | - | 9 | 6 | .12 | .05 | *Discarded |
| 63 | 54 | 46 | 13 | .48 | .54 | Acceptable |
| 64 | 55 | 35 | 15 | .41 | .33 | Acceptable |
| 65 | 56 | 31 | 17 | .39 | .23 | Acceptable |
| 66 | 57 | 30 | 14 | .36 | .26 | Acceptable |
| 67 | - | 7 | 2 | .07 | .08 | *Discarded |
| 68 | 58 | 40 | 17 | .46 | .37 | Acceptable |

Table 3.9 Results of Item Analysis of Reading Passage 5 (Items 53-71) (Contd.)

| Item Number | | High (n=61) | Low (n=62) | Level of Difficulty | Power of Discrimination | Remark |
|-------------|-------|----------------|---------------|------------------------|----------------------------|------------|
| Pilot | Final | | | | | |
| 69 | 59 | 39 | 19 | .47 | .33 | Acceptable |
| 70 | 60 | 37 | 23 | .49 | .23 | Acceptable |
| 71 | 61 | 49 | 20 | .56 | .47 | Acceptable |

Table 3.9 demonstrates that sixteen items were acceptable as good test items because they met the acceptable criteria for both the level of difficulty and the power of discrimination (numbers 53, 54, 55, 56, 57, 58, 59, 60, 63, 64, 65, 66, 68, 69, 70 and 71). Three items (numbers 61, 62 and 67) were discarded as they were extremely difficult and the power of discrimination was extremely low.

In conclusion, the results of the item analysis reveal that out of 70 test items (excluding Item 13 which was given as an example), 60 items were good items, 10 items were discarded. Besides the power of discrimination, and level of difficulty of test items, test reliability and validity must be taken into consideration so that the scores of the test takers are sufficiently reliable for the researcher to determine their levels of proficiency. What follow are how the reliability and validity of the test for the present investigation were carried out.

3.6.3.3 Test Reliability

The reliability of the test is defined by Brown (1988) as the extent to which the results can be considered consistent or stable. A reliable test produces essentially the same results consistently on different occasions when the conditions of the test remain the same (Madsen, 1983). There are two ways of estimating test

reliability: equivalent forms method, and internal-consistency methods (Fraenkel and Wallen, 2000). The equivalent-forms methods needs two different but equivalent forms of the test administered to the same group of individuals during the same time period. Alternatively, the same test can be administered to the same group of subjects on two occasions (test-retest). The time between administration is normally limited to no more than two weeks in order to minimize the effect of learning upon subjects' true scores (Davies et al, 1999). On the other hand, the internal-consistency method or the split-half method, where reliability is established by comparing scores on the component part of the test, requires only a single administration of an instrument. The method provides a measure of adequacy of item sampling. Davies et al (1999) note that it is important that the two halves are comparable with regards to equivalent difficulty. It is a widespread approach to the assessment of reliability (Phillips, 1971)

The researcher adopted the inter-consistency methods of estimating reliability of the test. This method was found appropriate since the test was administered to the subjects only once. For the present investigation, the split-half procedure was employed with the assistance of the SPSS programme. The reliability of this test was .83 which was considered acceptable and was above the acceptable criterion of .70 as suggested in Fraenkel and Wallen (2000).

3.6.3.4 Test Validity

Validity has been defined as referring to the appropriateness, meaningfulness, and usefulness of the specific inferences researchers make based on

the data they collect. Fraenkel and Wallen (2000: 139) define that validity of an instrument is “the process of collecting evidence to support such inference.” Further, validity is the most important idea to consider when preparing or selecting an instrument for use. Castillo (1990) points out that usually the first approach to establish the validity of a test is through getting ‘experts’, in this case language teachers and subject specialists, to judge whether the test consists of questions covering the areas being measured, and whether the test appears to measure what it tends to measure.

For the present investigation, the researcher validated the test by administering questionnaires to seven language teachers as subject specialists. According to Intaraprasert (2000), the texts should be validated in terms of appropriacy, familiarity, and the level of difficulty. The data obtained from the questionnaire should answer the following questions:

- 1) Whether or not the texts used in the test are appropriate for undergraduate students;
- 2) Whether or not students would be familiar with the texts used in the test;
- 3) Whether or not the level of difficulty is appropriate.

The results revealed that all of the five reading passages used in the test were found to be suitable for the students who were the subjects of the present investigation. All of the respondents found that the tasks used in the test were the

types of task their students had to do in their subject area. The researcher believed that the five reading passages were considered to be appropriate to determine the levels of reading proficiency since they had been validated by the subjects' specialists.

3.7 Data Collection Procedure

As mentioned earlier, there were two main phases for data collection in the present investigation: Phase 1) conducting the reading comprehension test and administering questionnaires; Phase 2) conducting semi-structured interview. To be more specific, after conducting the reading comprehension test and administering questionnaires, a follow-up semi-structured interview was employed for gathering information about reading strategies employed by Chinese university students in Southwest China.

In total, there were altogether seven universities in different geographical regions obtained through purposive sampling and stratified sampling methods. One thousand three hundred and sixty-eight students sampled from the seven universities involved in responding to the written reading questionnaire. The semi-structured interview was used as the main instrument in the second phase. There were 40 undergraduate students took part in the semi-structured interviews.

When collecting the data in the first phase, a number of English teachers teaching in the seven universities were trained to assist to administer the

questionnaires and conduct the comprehension test. Each student was given two sets of paper at the same time: 1) the Reading Comprehension Test in English (RCTE); and 2) the Strategy Questionnaire for English Reading (SQER). Before delivering the questionnaire, the assistant teachers were trained to explain the nature and the aim of the study to the subjects. Students were also told that there was no right or wrong answers on the questionnaires and since the teachers know nothing about their personal information, their responses would not affect their course grades, so they were urged to answer forthright (Dörnyei, 2003).

The test in the main stage was conducted in 80 minutes. When the students finished the test, they were required to proceed to the questionnaire for another 10 to 15 minutes. So the whole process in each class was taken around 90 to 95 minutes in total. Soon afterwards, purposive and convenience sampling method were employed to select interview subjects in terms of conducting semi-structured interview in relation to the research objects and research questions. The interviews were conducted in the universities where the investigation was conducted. The interviews were tape-recorded for further analysis in relation to Research Question 8.

In conclusion, the framework of data collection process was summarized as following in Figure 3.6:

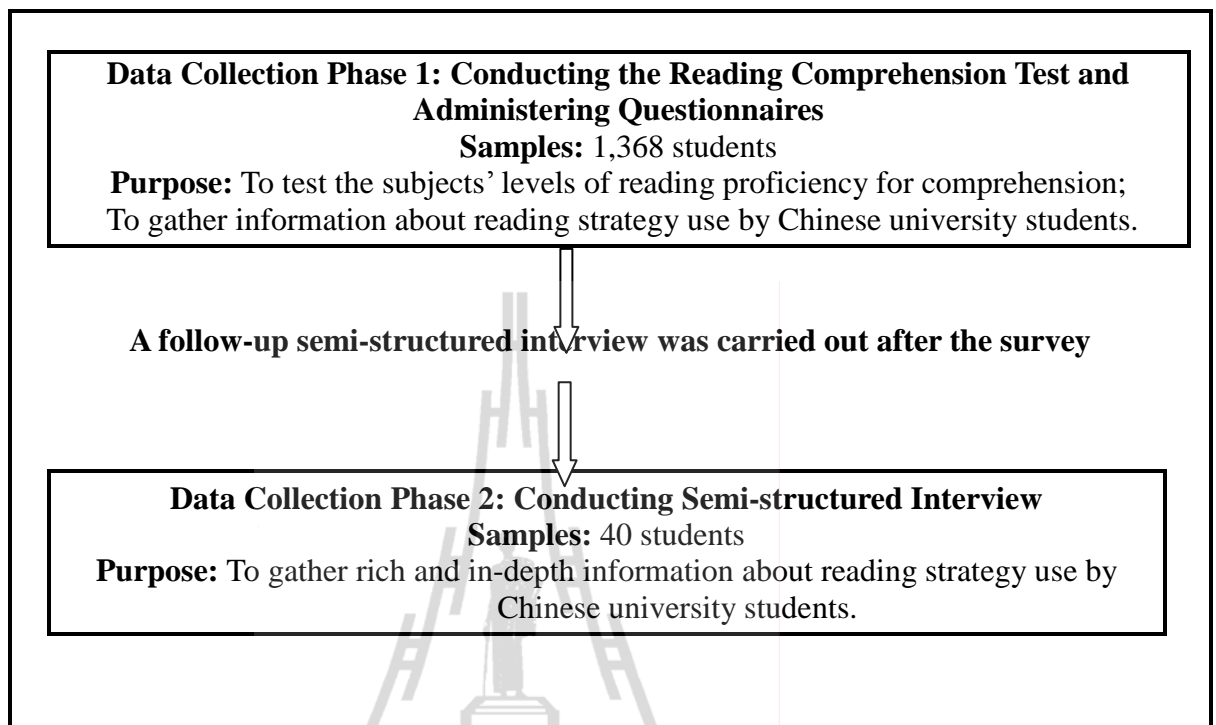


Figure 3.6 Framework of Data Collection Process

3.8 Analysing, Interpreting and Reporting Data

The following section will introduce ways to analyse the research data obtained from the reading strategy questionnaires and semi-structured interviews. To put it simply, data obtained from reading strategy questionnaires were analysed quantitatively, while data obtained from the semi-structured interviews were analysed qualitatively.

3.8.1 Analysis of Data Obtained through Reading Strategy Questionnaire

The purpose of the questionnaire analysis was to help answer the Research Questions 1-7 (see Section 3.4) in relation to use of reading strategies of university students in Southwest China. The data obtained through the reading strategy questionnaires were analysed and interpreted with the assistance of the

SPSS programme. This was done in order to examine the relationship between the students' reading strategies and the variables in the present investigation, namely, students' gender (male and female), fields of study (art-oriented and science-oriented), levels of reading proficiency (high, moderate, and low), teachers' gender (male and female), types of university (211 Project university and non-211 Project university), and students' extensive reading (frequent and infrequent). More detailed information about data analysis could be seen as following:

- **Frequency of Strategy Use (Descriptive Statistics)**

This method was used to compare the degree to which strategies were reported to be used frequently or infrequently by students in general. There were three levels of strategy use, which were 'high use (3.0-3.99)', 'moderate use (2.0-2.99)', and 'low use (1.0-1.99)' based on the holistic mean scores of frequency of strategy use by the subjects (Intaraprasert, 2000, 2004; Oxford, 1990).

- **Analysis of Variance (ANOVA)**

The Analysis of Variance is a method of statistical analysis broadly applicable to a number of research designs, and used to test the significance of differences among the mean of two or more groups of a variables (Nunan, 1989). For the present investigation, the Analysis of Variance or ANOVA was used to determine whether there was a significance between reading strategies according to each variable. This method was used to determine the relationship between learners' overall reported strategy use and 1) students' gender (male and female); 2) fields of

study (art-oriented and science-oriented); 3) levels of English reading proficiency (high, moderate, and low); 4) types of university (211 Project university and non-211 Project university); 5) teachers' gender (male and female); and 6) students' extensive reading (frequent and infrequent).

- **Post Hoc Scheffé Test**

The post hoc Scheffé test was used to determine the significant differences between group means in an analysis of variance setting, which was used after ANOVA in order to examine the significant differences as the result of ANOVA where the variable has more than two groups. In the present investigation, this test was used to indicate which pair of the groups under the students' levels of reading proficiency contributes to the overall differences.

- **Chi-square Tests**

This method was used to determine the significant variation patterns in the students' reported strategy use at the individual item level. The Chi-square tests were employed to check all the strategy items for the significant variations by: 1) students' gender; 2) fields of study; 3) levels of reading proficiency; 4) types of university; 5) teachers' gender; and 6) students' extensive reading. This method compares 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 item. For the Chi-square tests, responses of 1 and 2 ('Never' and 'Sometimes') were consolidated into a single 'low strategy use' category and 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 of strategy use is to obtain cell sizes with expected values high enough to ensure a valid analysis (Green and Oxford, 1995, cf Intaraprasert, 2000)

3.8.2 Analysis of Data Obtained through Semi-structured Interview

The transcribed interview data were analysed qualitatively with 'open and axial coding' techniques proposed by Punch (2005) and Strauss and Corbin (1998). Strauss and Corbin (1998: 61-62) define the term 'open coding' as the process of breaking down, examining, comparing, conceptualizing and categorizing data. The aim of 'open coding' is to discover, name and categorise phenomena and to develop categories in terms of their properties and dimensions. While 'open coding' is used to break down the data and to identify first level concepts and categories, '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: 96) also point out that the data will be put back together in new ways by making connections between category (open coding) and its sub-category (axial coding). The results of interviews answered Research Question 8, i.e. 'Why do students report employing certain strategies frequently and certain strategies infrequently?' In order to increase the reliability and validity of the interview transcripts, the researcher used two strategies: 1) repeatedly listening and transcribing the interview data; 2) equating the literal meanings of

transcripts through back-translations by asking for assistance from colleagues.

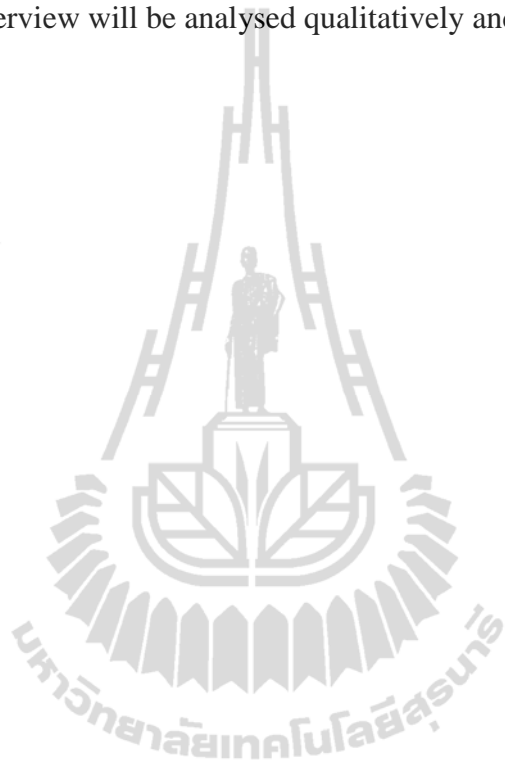
As mentioned in Section 3.6.2.1, the name of each interviewee is included in the interview for the purpose of creating trust and friendliness between the interviewer and the interviewees. However, for the sake of anonymity, each student as an informant in the present investigation was labeled as a code according to the interview sequence. For example, S 35 means that the interviewee was the thirty-fifth student who was interviewed.

3.9 Summary

In this chapter, three main parts are presented: 1) a background of research methodology which includes related research methods employment into reading strategies; namely, questionnaires, think-aloud protocols and interviews; 2) methodology for the present investigation, of which theoretical framework and variables to be investigated, data collection instruments, data collection procedure, characteristics of participants, as well as analysis and interpreting data were looked into in terms of providing a clear picture to conduct the research precisely and logically; and 3) the research questions for the present study. In addition, the pilot studies of questionnaire, semi-structured interview and the Reading Comprehension Test, which has proved that the instruments for the present investigation were reliable and acceptable, have also been presented.

As mentioned earlier in Section 3.6, the research methods were different in both phases in accordance with the research purposes of each phase. Questionnaires

and semi-structured interviews were used as the main instruments for data collection at each phase respectively. The data obtained through the questionnaire will be analysed quantitatively and reported in Chapters 4, and the data obtained through the semi-structured interview will be analysed qualitatively and reported in Chapter 5.



CHAPTER 4

DATA ANALYSIS FOR READING STRATEGY USE I

The primary purpose of this chapter is to describe the research results of the present study at the three different levels of data analysis, which are: 1) overall use of reading strategies; 2) use of reading strategies in the strategies for the before-reading stage (SBS), strategies for the while-reading stage (SWS), and strategies for the after-reading stage (SAS) categories; and 3) use of individual reading strategies. Additionally, this chapter aims at examining the relationship between the reading strategy use of 1,368 undergraduates and the six variables, i.e. students' gender, fields of study, levels of students' reading proficiency, teachers' gender, types of university and students' extensive reading. The comparisons of the frequency of reading strategy use reported by 1,368 undergraduate students studying English at universities of Southwest China based on the holistic mean scores obtained through the reading strategy questionnaires are determined. Finally, the significant variations in frequency of students' reported use of reading strategies in relation to the six independent variables are also taken into consideration.

4.1 Introduction

Reading strategies for the present study have been defined as “the methods, skills or behaviors that the university students employ for the textual comprehension or to solve the reading problems when reading English texts either inside or outside

the classroom settings.” As evidenced in Chapter 2, there are many variables affecting the language learners’ choices of reading strategy use. These variables include learners’ reading proficiency, gender, and L1 proficiency etc. Examples are the research works conducted by Hosenfeld (1977), Sheorey and Mokhtari (2001), Sariçoban (2002), Anderson (2003), Mokhtari and Reichard (2004), Yigister, Sariçoban and Gürses (2005). However, it is impossible for the researcher to examine all the variables. In relation to the research purposes and research questions, the present study is to focus on examining the relationship between students’ use of reading strategies and students’ gender, fields of study, levels of reading proficiency, teachers’ gender, types of university, and students’ extensive reading.

As mentioned earlier, different levels of reading strategy use reported by 1,368 university students in Southwest China have been taken into consideration in order to examine the respondents’ strategy use, and then we will look at the variation in frequency of students’ reported strategy use at the three different levels of reading strategy use.

4.2 Reading Strategy Use Reported by 1,368 University Students in Southwest China

In this section, simple statistical methods have been employed to analyse the data obtained from 1,368 undergraduate students through the reading strategy questionnaires, while the significant variation patterns of students’ choices of reading strategies are not discussed at this stage. However, the comparisons of students’ reported frequency of strategy use in different layers are the focal point of discussion.

As determined by students’ responses to the reading strategy questionnaires, the frequency of students’ reading strategy use was categorized as ‘high’, ‘moderate’

and 'low'. The frequency of strategy use was indicated on a four-point rating scale, ranging from 1 to 4, i.e. 'Never or almost never true of me' valued as 1, 'Somewhat true of me' valued as 2, 'Often true of me' valued as 3, 'Always or almost always true of me' valued as 4. Consequently, the possible average values of frequency of strategy use can be from 1.00 to 4.00. The mid-point of the minimum and the maximum values was 2.00. The mean frequency score of strategy use of any categories or items was valued from 1.00 to 1.99 as 'low use', from 2.00 to 2.99 as 'moderate use', and from 3.00 to 4.00 as 'high use'. Figure 4.1 below presents the applied measure.

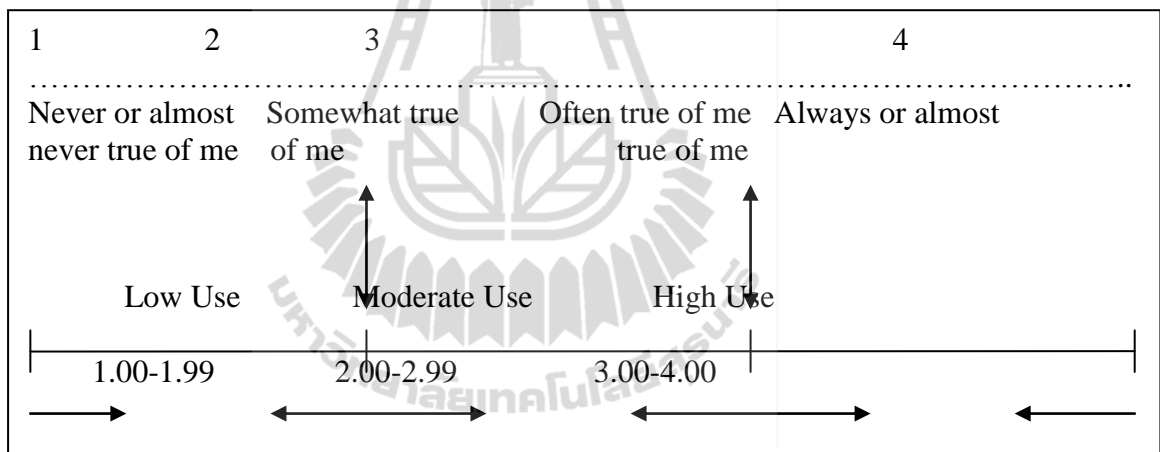


Figure 4.1 The Measure of Low, Moderate and High Use Level of Strategy Use

4.2.1 Frequency of Students' Overall Strategy Use

The results of the holistic mean frequency score across the reading strategy questionnaire responded to by 1,368 Chinese undergraduate students are shown in Table 4.1 below.

Table 4.1 Frequency of Students' Reported Overall Strategy Use (n=1,368)

| Strategy Use | Mean Score (\bar{X}) | Standard Deviation (S.D.) | Frequency Category |
|--------------|--------------------------|---------------------------|--------------------|
| Overall | 2.23 | .57 | Moderate Use |

As shown in Table 4.1, the mean frequency score of 2.23 indicates that as a whole, these students reported employing reading strategies at the moderate frequency level when reading English texts for comprehension.

4.2.2 Frequency of Strategy Use in the SBS, SWS, SAS Categories

As mentioned earlier, reading strategies under the present study have been grouped into three main categories, i.e. 1) strategies for the before-reading stage (SBS); 2) strategies for the while-reading stage (SWS); and 3) strategies for the after-reading stage (SAS). Table 4.2 below demonstrates the frequency of strategy use in the three categories, together with the standard deviation and frequency category.

Table 4.2 Frequency of Strategy Use in SBS, SWS and SAS Categories (n=1,368)

| Strategy Categories | Mean Score (\bar{X}) | Standard Deviation (S.D.) | Frequency Category |
|---------------------|--------------------------|---------------------------|--------------------|
| SBS Category | 2.39 | .70 | Moderate Use |
| SWS Category | 2.28 | .69 | Moderate Use |
| SAS Category | 1.95 | .63 | Low Use |

Table 4.2 above demonstrates that 1,368 Chinese university students reported the moderate frequency of reading strategy use in the SBS and SWS categories, with the mean scores of 2.39 and 2.28 respectively. They reported the low frequency of reading strategy use in the SAS category, with the mean score of 1.95. These mean frequency scores indicate that Chinese students reported slightly more frequent strategy use at the before- and while-reading stages than they reported employing the strategies at the after-reading stage.

Section 4.2.1 demonstrated the frequency of students' overall reading strategy use. Section 4.2.2 presented an overall picture of students' strategy use in the SBS, SWS and SAS categories in succession. The next section (Section 4.2.3) is to

present more information on students' reported strategy use in a more detailed manner, which is based on the frequency of individual reading strategy use.

4.2.3 Frequency of Students' Reported Individual Reading Strategy Use

The frequency of individual strategy use, together with the mean scores and standard deviations are demonstrated in Table 4.3. In order to make it easier to see the whole picture of students' reported frequency of each individual reading strategy use, these strategies are presented in order of their mean frequency scores based on the categories, ranging from the highest to the lowest. This enables the reader to see a clearer picture of the strategies which have been reported being used the most and least frequently. The high mean frequency score of a strategy use implies that students claimed to employ that strategy frequently and vice versa.

Table 4.3 Frequency of Students' Reported Individual Reading Strategy Use

| Individual Strategy Use | Mean Score (\bar{X}) | Standard Deviation (S.D.) | Frequency Category |
|--------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|-----------------------|
| Strategies for before-reading stage (SBS Category) | | | |
| 1: SBS 2 Reading the title of the text before doing the actual reading | 3.00 | 1.14 | High Use |
| 2: SBS 3 Going through the text quickly before reading the text | 2.41 | 1.01 | Moderate Use |
| 3: SBS 5 Looking at pictures/charts/tables/figures in the text before reading the text (if any) | 2.39 | 1.08 | Moderate Use |
| 4: SBS 6 Looking at questions about the text (if any) before reading the text | 2.36 | 1.11 | Moderate Use |
| 5: SBS 7 Scanning for main ideas before reading the text | 2.31 | 1.01 | Moderate Use |
| 6: SBS 9 Reading the abstract or an introductory part before reading the text | 2.31 | 1.07 | Moderate Use |
| 7: SBS 1 Searching for the meanings of new vocabulary items before reading the text | 2.27 | .97 | Moderate Use |
| 8: SBS 4 Reading the first and the last paragraphs before reading the text | 2.21 | 1.02 | Moderate Use |

**Table 4.3 Frequency of Students' Reported Individual Reading Strategy Use
(Contd.)**

| Individual Strategy Use | | Mean Score (\bar{X}) | Standard Deviation (S.D.) | Frequency Category |
|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|-----------------------|
| Strategies for before-reading stage (SBS Category) | | | | |
| 9: SBS 11 | Predicting what might happen in the text before reading the text | 2.18 | 1.09 | Moderate Use |
| 10: SBS 8 | Thinking of one's background knowledge about the text before reading the text | 1.93 | .90 | Low Use |
| 11: SBS 10 | Looking for the parallel article(s) in Chinese (if any) before reading the text | 1.70 | .89 | Low Use |
| Strategies for while-reading stage (SWS Category) | | | | |
| 1: SWS 20 | Highlighting important information or difficult vocabulary items by underlining while reading the text | 2.70 | 1.08 | Moderate Use |
| 2: SWS 15 | Taking notes of the important information while reading the text | 2.68 | 1.05 | Moderate Use |
| 3: SWS 16 | Guessing the meaning of the text from context while reading the text | 2.62 | 1.00 | Moderate Use |
| 4: SWS 17 | Rereading certain part(s) of the text while reading the text | 2.58 | 1.00 | Moderate Use |
| 5: SWS 21 | Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text | 2.56 | 1.08 | Moderate Use |
| 6: SWS 18 | Reading certain part(s) of the text slowly while reading the text | 2.51 | .99 | Moderate Use |
| 7: SWS 22 | Thinking about the meaning of the reading text in Chinese while reading the text | 2.49 | 1.01 | Moderate Use |
| 8: SWS 12 | Searching for the meanings of new vocabulary items while reading the text | 2.36 | 1.00 | Moderate Use |
| 9: SWS 25 | Encouraging oneself to keep on reading when encountering any difficulties while reading the text | 2.36 | .97 | Moderate Use |
| 10: SWS 24 | Trying to relax when one feels nervous while reading the text | 2.32 | 1.00 | Moderate Use |
| 11: SWS 19 | Avoiding difficult parts while reading the text | 2.21 | .90 | Moderate Use |
| 12: SWS 23 | Making a summary of certain part(s) of the reading text in either Chinese or English, or both while reading the text | 2.09 | .98 | Moderate Use |

Table 4.3 Frequency of Students' Reported Individual Reading Strategy Use (Contd.)

| Individual Strategy Use | | Mean Score (\bar{X}) | Standard Deviation (S.D.) | Frequency Category |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------------------|-----------------------|
| Strategies for before-reading stage (SBS Category) | | | | |
| 13: SWS 13 | Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text | 2.06 | .85 | Moderate Use |
| 14: SWS 14 | Analysing a sentence structure while reading the text | 1.92 | .86 | Low Use |
| Strategies for after-reading stage (SAS Category) | | | | |
| 1: SAS 26 | Searching for the meanings of new vocabulary items after reading the text | 2.45 | 1.05 | Moderate Use |
| 2: SAS 35 | Encouraging oneself to do better in the next time if oneself does not perform well in a particular reading after reading the text | 2.29 | 1.00 | Moderate Use |
| 3: SAS 32 | Reflecting one's performance after reading the text | 1.94 | .91 | Low Use |
| 4: SAS 34 | Giving oneself a reward or treat when one does well in reading after reading the text | 1.94 | .97 | Low Use |
| 5: SAS 30 | Reviewing one's own notes after reading the text | 1.92 | .89 | Low Use |
| 6: SAS 28 | Making a summary of the whole reading text after reading the text | 1.91 | .90 | Low Use |
| 7: SAS 33 | Evaluating one's performance after reading the text | 1.88 | .91 | Low Use |
| 8: SAS 27 | Discussing the reading text with classmate(s) or friend(s) after reading the text | 1.78 | .77 | Low Use |
| 9: SAS 31 | Translating the reading text into Chinese using Chinese script after reading the text | 1.75 | .88 | Low Use |
| 10: SAS 29 | Retelling oneself or other people about what has been read after reading the text | 1.62 | .76 | Low Use |

Table 4.3 reveals that, as a whole, 1 strategy was reported being used at the high level; 23 strategies were reported being used at the moderate level; and 11 strategies were reported being used at the low level respectively. Reading the title of the text before doing the actual reading (SBS 2) was the strategy that students

reported employing the most frequently, with the mean score (\bar{X}) of 3.00. On the contrary, retelling oneself or other people about what has been read after reading the text (SAS 29) was the least frequently used strategy, with the mean score of 1.62.

The strategies in the categories which appear to be reported 'moderate use' are mainly those employed to comprehend the text before doing the actual reading (SBS), and while doing the actual reading (SWS), whereas the strategies in the SAS category were mainly reported 'low use'. To be more specific, 8 SBS strategies and 13 SWS strategies fall into the moderate level, while 8 SAS strategies fall into the low level.

To summarize, this section presents the frequency of reading strategy use at the different levels reported by 1,368 Chinese undergraduate students. The description of this reported frequency of students' reading strategy use provided an overall picture of reading strategy use by Chinese undergraduate students. Regarding the frequency level of overall strategy use, the frequency level of strategy use in the three categories, and the frequency of levels of the individual strategy, the mean frequency scores ranging from the highest to the lowest are presented. The next section will present the variations for reading strategy use in relation to the six independent variables, i.e. students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading.

4.3 Variation in Frequency of Students' Reported Strategy Use

In this section, the results were obtained through the Analysis of Variance (ANOVA) and the Chi-square tests with regard to the research questions. As mentioned in Section 3.8.1, the ANOVA was used to determine the patterns of

variation in students' overall reported strategy use, and the use of strategies in the SBS, SWS, SAS categories according to the six variables. The post hoc Scheffé test was used to help pinpoint which of the differences between particular pairs of means have contributed to the overall significant difference of students' reading proficiency levels. Furthermore, the Chi-square tests were used to determine the significant variations in frequency of students' reported use of the 35 individual strategies.

The researcher adopted the level of significance of alpha (α) smaller than .05 to present the research results. This means that the chances are 5 in 100 or less, that an observed difference could result when a variable is actually having no effect (Ferguson, 1976). A top-down manner was adopted to present the results of the data analysis in this chapter. That is, at first, variation in frequency of students' overall reported strategy use according to the six variables as mentioned above will be explored. Secondly, variation in frequency of students' strategy use in the SBS, SWS, and SAS categories will be presented. Finally, the use of individual strategy according to the six variables will be presented. The main levels of the data analysis for students' reported reading strategy use are illustrated in Figure 4.2.

Level 1: Overall Reported Strategy Use

Level 2: Use of Strategies in the SBS, SWS, SAS Categories

Level 3: Use of Individual Reading Strategies

Figure 4.2 Analysis of Variation in Frequency of Different Levels of Reading Strategy Use

4.3.1 Variation in Frequency of Students' Overall Reported Strategy Use

This section involves variations in the frequency of students' reported reading strategy use as a whole based on the ANOVA. This statistical method demonstrates the significant variations were found according to four variables, i.e. students' gender, fields of study, levels of reading proficiency, and extensive reading, and no significant variations were found according to the teachers' gender and types of university. The results of the first level from the ANOVA are summarized in Table 4.4 below. This table contains the independent variables hypothesized to influence students' reading strategy use, followed by mean frequency score of strategy use, standard deviation, level of significance, and the pattern of variation in frequency of students' strategy use, if a significant variation exists.

Table 4.4 A Summary of Variation in Frequency of Students' Overall Reported Strategy Use

| | Variables | Mean | S.D. | Sig. Level | Variation Pattern |
|----------------------------------|----------------------|------|------|------------|---------------------|
| Students' Gender | Male | 2.12 | .59 | P<.001 | Female>Male |
| | Female | 2.29 | .55 | | |
| Fields of Study | Art-oriented | 2.26 | .56 | P<.05 | Art>Sci. |
| | Sci.-oriented | 2.18 | .57 | | |
| Reading Proficiency Level | Low-level | 2.11 | .63 | P<.05 | Higher>Lower |
| | Moderate-Level | 2.23 | .56 | | |
| | High-level | 2.34 | .51 | | |
| Teachers' Gender | Male | 2.21 | .60 | N.S. | - |
| | Female | 2.23 | .57 | | |
| Types of University | 211 Project Uni. | 2.21 | .55 | N.S. | - |
| | Non-211 Project Uni. | 2.24 | .57 | | |
| Extensive Reading | Frequent | 2.41 | .54 | P<.001 | Frequent>Infrequent |
| | Infrequent | 2.16 | .56 | | |

Note: 'N.S.' stands for not significant.

According to Table 4.4, the results from the ANOVA reveal that the frequency of students' overall strategy use varied significantly according to four

variables, i.e. students' gender, fields of study, students' reading proficiency levels and students' extensive reading.

In terms of the students' gender, the result from the ANOVA shows significant differences between the male and female students. The mean frequency scores of the female and male students were 2.29 and 2.12 respectively. This means that in the overall use of reading strategies, the female students reported employing reading strategies significantly more frequently than did their male counterparts.

With regard to the students' fields of study, the result from the ANOVA shows significant differences between the art-oriented and science-oriented students. The mean frequency scores of the reported strategy use by the art-oriented and science-oriented students were 2.26 and 2.18 respectively. The results indicate that the art-oriented students generally reported employing reading strategies significantly more frequently than did the science-oriented students.

With respect to levels of reading proficiency, as mentioned in Chapter 3, students' levels of reading proficiency were determined based on their scores obtained through the Reading Comprehension Test in English (see Appendix I). By comparing the mean frequency scores of students' levels of reading proficiency, the post hoc Scheffé test shows the significant variations in the overall strategy use among students with the high-, moderate-, and low-level of reading proficiency. The mean frequency scores were 2.34, 2.23 and 2.11 respectively. The significant variations were found in students' overall reading strategy use between the high- and moderate-proficiency students, the high- and low-proficiency students, as well as between the moderate- and low-proficiency students. The results indicate that the higher proficiency students reported employing significantly greater overall strategy use than did the lower proficiency students.

In terms of the students' extensive reading, the results from the ANOVA show significant differences between the students who read extensively and those who did not read extensively outside classroom setting. The mean frequency scores of each of which were 2.41 and 2.16 respectively. This means that in the overall use of reading strategies, the students who read extensively reported employing a wider range of reading strategies than did the students who did not read extensively outside the classroom setting.

As shown in Table 4.4, the frequency of students' overall strategy use did not vary according to teachers' gender and types of university. The next section will demonstrate the results from the ANOVA for the frequency of the use of strategies in the SBS, SWS, SAS categories.

4.3.2 Variation in Frequency of Students' Use of Strategies in the SBS, SWS and SAS Categories

As mentioned earlier, the reading strategies for the present study have been classified into three main categories: 1) strategies for the before-reading stage (SBS); 2) strategies for the while-reading stage (SWS); and 3) strategies for the after-reading stage (SAS). The results (Tables 4.5-4.10) from the ANOVA demonstrate that the significant variations were found in the frequency of students' use of reading strategies in the SBS, SWS and SAS categories according to the four variables, i.e. students' gender, field study, levels of reading proficiency, and students' extensive reading. The significant variations were not found in the frequency of students' use of reading strategies in the SBS, SWS and SAS categories according to types of university and teachers' gender.

4.3.2.1 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Students' Gender

As shown in Table 4.5 below, the significant differences were found in the frequency of the use of reading strategies in the SBS, SWS, SAS categories according to the gender of students, with the female students reporting employing the strategies significantly more frequently than the male students.

Table 4.5 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Students' Gender

| Strategy Category | Male (n=488) | | Female (n=880) | | Sig. Level | Variation Pattern |
|-------------------|--------------|------|----------------|------|------------|-------------------|
| | Mean | S.D. | Mean | S.D. | | |
| SBS Category | 2.21 | .73 | 2.31 | .67 | P<.05 | F>M |
| SWS Category | 2.26 | .73 | 2.47 | .67 | P<.001 | F>M |
| SAS Category | 1.84 | .65 | 2.01 | .61 | P<.001 | F>M |

4.3.2.2 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Fields of study

Based on the results from the ANOVA, Table 4.6 demonstrates that the significant difference was found in the use of strategies in the SWS category with the art-oriented students reporting employing the strategies significantly more frequently than the science-oriented students. The results did not significantly in the SBS category or the SAS category.

Table 4.6 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Fields of study

| Strategy Category | Art Ori. (n=860) | | Sci.Ori. (n=508) | | Sig. Level | Variation Pattern |
|---------------------|------------------|------|------------------|------|------------|-------------------|
| | Mean | S.D. | Mean | S.D. | | |
| SBS Category | 2.30 | .68 | 2.23 | .71 | N.S. | – |
| SWS Category | 2.42 | .69 | 2.34 | .71 | P<.05 | Art>Sci. |
| SAS Category | 1.97 | .61 | 1.91 | .65 | N.S. | – |

4.3.2.3 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Levels of Reading Proficiency

The results from the ANOVA shown in Table 4.7 demonstrate that the significant variations in use of the strategies in the SBS and SWS categories have been found according to the levels of students' reading proficiency, with the high-proficiency students reporting more frequent use of these strategies than those who with the lower language proficiency levels. However, in terms of students' employment of reading strategies in the SAS category, no significant variation was found according to this variable. As will be discovered later (Section 4.3.3.3), in the use of individual reading strategies, the high-proficiency students reported more frequent use than did either the moderate- or low-proficiency students. We can also see that the high-, moderate- or low-proficiency students reported employing the SBS, SWS strategies more frequently at the before-, while-reading stages than they did at the after-reading stage.

Table 4.7 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Levels of Reading Proficiency

| Strategy Category | Low (n=191) | | Moderate (n=705) | | High (n=472) | | Sig. Level | Variation Pattern |
|-------------------|-------------|------|------------------|------|--------------|------|------------|-------------------|
| | Mean | S.D. | Mean | S.D. | Mean | S.D. | | |
| SBS Category | 2.20 | .72 | 2.30 | .69 | 2.41 | .63 | P<.05 | Higher>Lower |
| SWS Category | 2.32 | .69 | 2.39 | .70 | 2.53 | .66 | P<.05 | Higher>Lower |
| SAS Category | 1.94 | .65 | 1.96 | .60 | 2.00 | .54 | N.S. | - |

4.3.2.4 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Teachers' Gender

The results from the ANOVA in Table 4.8 show that no significant variations were found in frequency of students' use of strategies in the SAS, SWS and SAS categories in relation to teachers' gender. Though the use of strategies in these categories did not vary significantly according to this variable, students who studied with female teachers happened to report slightly greater use of the SWS and SAS strategy categories than did those who studied with male teachers. To be more specific, the mean frequency scores, for the frequency of strategy use of students studying with female teachers, in the SWS and the SAS categories were 2.40 and 1.96, while those for the students studying with male teachers were 2.35 and 1.88 respectively.

Table 4.8 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Teachers' Gender

| Strategy Category | Studying with male teachers (n=232) | | Studying with female teachers (n=1,136) | | Sig. Level | Variation pattern |
|---------------------|-------------------------------------|------|-----------------------------------------|------|------------|-------------------|
| | Mean | S.D. | Mean | S.D. | | |
| SBS Category | 2.33 | .75 | 2.27 | .68 | N.S. | – |
| SWS Category | 2.35 | .75 | 2.40 | .69 | N.S. | – |
| SAS Category | 1.88 | .68 | 1.96 | .61 | N.S. | – |

4.3.2.5 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Types of University

The results in Table 4.9 show that students studying at the universities in both types did not differ in terms of their employment of strategies in the SBS, SWS and SAS categories. When determining the level of frequency of strategy use, we found that students studying at the 211 Project universities and the non-211 Project universities reported the moderate frequency of use of strategies in the SBS and the SWS categories, and the low frequency of strategy use in the SAS category.

Table 4.9 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Types of University

| Strategy Category | 211 Uni. (n=469) | | Non-211 Uni. (n=899) | | Sig. Level | Variation Pattern |
|---------------------|------------------|------|----------------------|------|------------|-------------------|
| | Mean | S.D. | Mean | S.D. | | |
| SBS Category | 2.26 | .68 | 2.29 | .70 | N.S. | – |
| SWS Category | 2.39 | .70 | 2.39 | .70 | N.S. | – |
| SAS Category | 1.90 | .63 | 1.98 | .62 | N.S. | – |

4.3.2.6 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Students' Extensive Reading

In respect of students' extensive reading, the results from the ANOVA (Table 4.10) show that: 1) students who read extensively reported employing strategies in the SBS, SWS and SAS categories at the moderate level; 2) the students who did not read extensively reported employing strategies in the SBS, SWS at the moderate level; 3) the students who did not read extensively reported employing strategies in the SAS categories at the low level. However, the significant variations were found in reading strategy employment between the two types of students in the SBS, SWS and SAS categories, with the mean scores of 2.49, 2.55 and 2.14 respectively for the students who read extensively, and 2.20, 2.33 and 1.88 respectively for the students who did not read extensively. Table 4.10 below demonstrates that students who read extensively reported employing strategies significantly frequently than did the students who did not read extensively outside the classroom setting.

Table 4.10 Variation in Frequency of Students' Use of Reading Strategies in the SBS, SWS, SAS Categories According to Students' Extensive Reading

| Strategy Category | Frequent (n=369) | | Infrequent (n=999) | | Sig. Level | Variation Pattern |
|---------------------|------------------|------|--------------------|------|------------|---------------------|
| | Mean | S.D. | Mean | S.D. | | |
| SBS Category | 2.49 | .62 | 2.20 | .70 | p<.001 | Frequent>Infrequent |
| SWS Category | 2.55 | .68 | 2.33 | .70 | p<.001 | Frequent>Infrequent |
| SAS Category | 2.14 | .63 | 1.88 | .61 | p<.001 | Frequent>Infrequent |

In summary, when we take a closer look at the use of strategies in the SBS, SWS and SAS categories based on the results from the ANOVA, a clearer picture of students' strategy use in this level has been formed. That is, the significant variations were found between the female students and male students in the strategy use regarding the SBS, SWS and SAS categories, with female students reporting employing reading strategies frequently more than their male counterparts; the significant variation was found between the art-oriented and science-oriented students, with the art-oriented students reporting employing the strategies in the SWS category frequently more than the science-oriented students, though the significant variations were not found in the SBS and SAS categories regarding this variable; the significant variations were found between the high- and moderate-proficiency students, as well as between the moderate- and low-proficiency students, with the higher-proficiency students reporting employing strategies more frequently than the lower-proficiency students; the significant variations were not found in the SBS, SWS, and SAS categories with regard to the teachers' gender; the significant variations were not found in the SBS, SWS, and SAS categories with regard to the types of university. at last, the significant variations were found in the SBS, SWS and SAS strategy categories regarding students' extensive reading, with the students who read extensively reporting employing strategies more frequently than those who did not read extensively outside the classroom setting.

Table 4.11 below shows the summary of the significant variations in frequency of reading strategy use in the SBS, SWS and SAS categories according to the six variables.

Table 4.11 Summary of the Significant Variations in Frequency of Reading Strategy Use in the SBS, SWS, SAS Categories According to the Six Variables

| Strategy Category | Students' Gender | Fields of Study | Reading Proficiency | Teachers' Gender | Types of University | Extensive Reading |
|-------------------|------------------|-----------------|---------------------|------------------|---------------------|-------------------|
| SBS Category | YES | N.S. | YES | N.S. | N.S. | YES |
| SWS Category | YES | YES | YES | N.S. | N.S. | YES |
| SAS Category | YES | N.S. | N.S. | N.S. | N.S. | YES |

Note: 'YES' means a significant variation exists whereas 'N.S.' stands for not significant.

4.3.3 Variation in Frequency of Students' Use of Individual Reading Strategies

Sections 4.3.1-4.3.2 discussed the significant variations in the frequency of students' overall strategy use, and the significant variations in frequency of students' strategy use in the SBS, SWS, SAS categories. This section is to present the results of the Chi-square tests which were employed to determine the patterns of the significant variations in students' reported strategy use at the individual strategy item level. The Chi-square tests were used to check all of the individual strategy items for the significant variations by the six independent variables. To demonstrate the significant variation, the percentage of students in terms of each variable reported the high strategy use (3 and 4 in the strategy questionnaire), and the observed Chi-square value (χ^2) which shows the strength of variation in use of each individual strategy were identified. The individual strategies are presented in order of the percentage of students reporting the high use (3 and 4 in the strategy questionnaire), ranking from the highest to the lowest. This makes it easier to see an overall picture of the reading strategies which are reported to be frequently used, analysed in terms of each of the

six variables. The pattern(s) of the significant variations of the particular strategy items are included in a brief discussion of each variable.

4.3.3.1 Variation in Frequency of Students' Use of Individual Reading Strategies According to Students' gender

As mentioned earlier, the results of the ANOVA reported in the previous sections show the significant variations in frequency of students' overall strategy use, use of strategies in the SBS, SWS, SAS categories according to the gender of students. In this section, the results from the Chi-square tests reveal that more than half of the individual reading strategies, 18 out of 35, varied significantly according to this variable.

Table 4.12 Variation in Frequency of Students' Use of Individual Reading Strategies According to Students' Gender

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 P<.05 |
|--------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------|--------|----------------------------|
| | | Male | Female | |
| Used more by female students-18 strategies | | | | |
| SBS 2 | Reading the title of the text before doing the actual reading | 67.8 | 74.7 | $\chi^2 = 7.30$ P<.05 |
| SWS 20 | Highlighting important information or difficult vocabulary items by underlining while reading the text | 50.6 | 68.6 | $\chi^2 = 43.37$ P<.001 |
| SWS 15 | Taking notes of the important information while reading the text | 53.1 | 64.7 | $\chi^2 = 17.64$ P<.001 |
| SWS 16 | Guessing the meaning of the text from context while reading the text | 53.1 | 61.8 | $\chi^2 = 9.90$ P<.05 |
| SWS 17 | Rereading certain part(s) of the text while reading the text | 51.6 | 61.1 | $\chi^2 = 11.60$ P<.05 |
| SWS 21 | Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text | 46.5 | 60.5 | $\chi^2 = 24.69$ P<.001 |
| SWS 18 | Reading certain part(s) of the text slowly while reading the text | 41.2 | 59.8 | $\chi^2 = 43.54$ P<.001 |
| SWS 22 | Thinking about the meaning of the reading text in Chinese while reading the text | 48.4 | 55.9 | $\chi^2 = 7.18$ P<.05 |

Table 4.12 Variation in Frequency of Students' Use of Individual Reading Strategies According to Students' Gender (Contd.)

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 P<.05 |
|-------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------|----------------------------|
| | | Male | Female | |
| SAS 26 | Searching for the meanings of new vocabulary items after reading the text | 40.4 | 51.6 | $\chi^2 = 15.85$ P<.001 |
| SBS 6 | Looking at questions about the text (if any) before reading the text | 38.5 | 48.8 | $\chi^2 = 13.26$ P<.001 |
| SAS 35 | Encouraging oneself to do better in the next time if one does not perform well in a particular reading after reading the text | 33.2 | 46.1 | $\chi^2 = 21.65$ P<.001 |
| SWS 24 | Trying to relax when one feels nervous while reading the text | 39.1 | 45.2 | $\chi^2 = 4.75$ P<.05 |
| SWS 25 | Encouraging oneself to keep on reading when encountering any difficulties while reading the text | 38.5 | 45.2 | $\chi^2 = 5.76$ P<.05 |
| SBS 1 | Searching for the meaning of new vocabulary before reading the text | 33.6 | 39.2 | $\chi^2 = 4.21$ P<.05 |
| SWS 23 | Making a summary of certain part(s) of the reading text in either Chinese or English, or both while reading the text | 28.1 | 35.0 | $\chi^2 = 6.86$ P<.05 |
| SAS 34 | Giving oneself a reward or treat when one does well in reading after reading the text | 21.9 | 30.7 | $\chi^2 = 12.05$ P<.05 |
| SAS 30 | Reviewing one's own notes after reading the text | 19.3 | 25.5 | $\chi^2 = 6.75$ P<.05 |
| SAS 27 | Discussing the reading text with classmate(s) or friend(s) after reading the text | 11.5 | 16.8 | $\chi^2 = 7.06$ P<.05 |

The results from the Chi-square tests (Table 4.12) show that the female students reported significantly higher use of 18 strategies than did their male counterparts. It is obvious that a significantly greater percentage of the female students reported employing more strategies than did the male students. Examples are, 'SBS 2 Reading the title of the text before doing the actual reading' (74.7 % females and 67.8% males), 'SWS 20 Highlighting important information or difficult

vocabulary items by underlying while reading the text' (68.6 % females and 50.6 % males), 'SWS 15 Taking notes of the important information while reading the text' (64.7 % females and 53.1 % males), and 'SWS 16 Guessing the meaning of the text from context while reading the text ' (61.8 % females and 53.1 % males).

Taking a closer look at Table 4.12, we found that the top nine individual strategies were reported being employed by more than half of the female students, while only top five individual strategies were reported being employed by more than half of the male students.

4.3.3.2 Variation in Frequency of Students' Use of Individual Reading Strategies According to Fields of study

The results from the ANOVA reveal that there were significant variations in students' overall reported strategy use and the SWS category between the art-oriented students and the science-oriented students. No significant differences were found in the SBS or the SAS category. However, the results from the Chi-square tests (Table 4.13) reveal that three individual SWS strategies, two individual SBS strategies and two individual SAS strategies varied significantly according to this variable, with a significantly greater percentage of the art-oriented students reporting employing strategies more frequently than the science-oriented students.

Table 4.13 Variation in Frequency of Students' Use of Individual Reading Strategies According to Fields of study

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 |
|---------------------------------------------|--------------------------------------------------------------------------------------------------------|-------------------------|-----------|---------------------------|
| | | Art-ori. | Sci.-ori. | |
| Used more by art-ori. students-7 strategies | | | | P<.05 |
| SWS 20 | Highlighting important information or difficult vocabulary items by underlining while reading the text | 65.5 | 56.7 | $\chi^2 = 10.53$ P<.05 |
| SWS 18 | Reading certain part(s) of the text slowly while reading the text | 55.2 | 49.6 | $\chi^2 = 4.06$ P<.05 |

Table 4.13 Variation in Frequency of Students' Use of Individual Reading Strategies According to Fields of study (Contd.)

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 |
|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------|-------------------------|
| Used more by art-ori. students-7 strategies | | Art-ori. | Sci-ori. | P<.05 |
| SAS 26 | Searching for the meanings of new vocabulary items after reading the text | 50.5 | 42.7 | $\chi^2=7.67$ P<.05 |
| SWS 12 | Searching for the meanings of new vocabulary items while reading the text | 45.3 | 37.8 | $\chi^2=7.45$ P<.05 |
| SBS 7 | Scanning for main ideas before reading the text | 46.2 | 38.0 | $\chi^2=8.69$ P<.05 |
| SAS 35 | Encouraging oneself to do better in the next time if one does not perform well in a particular reading after reading the text | 44.4 | 36.6 | $\chi^2=8.01$ P<.05 |
| SBS 1 | Searching for the meaning of new vocabulary before reading the text | 40.5 | 31.7 | $\chi^2=10.52$ P<.05 |

Table 4.13 demonstrates that a significantly greater percentage of the art-oriented students (65.5%) than did the science-oriented students (56.7%) reported highlighting important information or difficult vocabulary items by underlining while reading the text (SWS 20). Slightly more than half of the art-oriented students reported reading certain part(s) of the text slowly while reading the text (SWS 18), while 49.6 percent of the science-oriented students reported employing this strategy. In terms of searching for the meanings of new vocabulary items after reading the text (SAS 26), 50.5 percent of the art-oriented students, while less than half of the science-oriented students (42.7%) reported employing this strategy.

4.3.3.3 Variation in Frequency of Students' Use of Individual Reading Strategies According to Levels of Reading Proficiency

Regarding students' reading proficiency, as mentioned in Sections 4.3.1 and 4.3.2.3, significant differences were found in frequency in students'

overall strategy use, as well as in the use of strategies in the SBS and SWS categories respectively, with the high proficiency level students reporting employing strategies more than the moderate- and low proficiency level students. The Chi-square tests reveal that the significant variations were found in 18 individual strategies according to this variable, of which 13 strategies were reported being employed by the higher proficiency level students more frequently than did the lower proficiency level students (see Table 4.14), and 5 strategies were reported being employed more frequently by the lower proficiency level students than did the higher proficiency level students (see Table 4.15).

As suggested by Oxford and Green (1995), the pattern of variation can be classified as positive (high>moderate>low), in which strategies were used more by the higher proficiency level students than the lower proficiency students, or negative (low>moderate>high), in which strategies were used more by the lower proficiency level students than the higher proficiency students, or mixed (e.g. moderate>low>high). Examples of stacked bar graphs illustrating the classification by stair-step patterns are provided later to give a clearer picture of these patterns of variation. Taking a closer look at Table 4.14, we found that the higher proficiency level students used more strategies than did the lower proficiency level students, which shows a positive pattern of variation (high>moderate>low).

Table 4.14 Variation in Frequency of Students' Use of Individual Reading Strategies According to Reading Proficiency Classified as 'Positive'

| Individual Reading Strategies | | % of high use (3 and 4) | | | Observed χ^2 P<.05 |
|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------|------|----------------------------|
| | | High | Moderate | Low | |
| Used more by high > moderate > low proficiency students- 13 Positive strategies | | | | | |
| SBS 2 | Reading the title of the text before doing the actual reading | 77.9 | 73.1 | 68.6 | $\chi^2 = 6.70$ P<.05 |
| SWS | Rereading certain part(s) of the text while reading the text | 70.8 | 58.5 | 49.4 | $\chi^2 = 15.61$ P<.001 |
| SWS | Guessing the meaning of the text from context while reading the text | 68.3 | 58.0 | 51.0 | $\chi^2 = 10.11$ P<.05 |
| SWS | Thinking about the meaning of the reading text in Chinese while reading the text | 67.5 | 50.2 | 49.9 | $\chi^2 = 12.33$ P<.05 |
| SWS | Reading certain part(s) of the text slowly while reading the text | 64.2 | 56.6 | 40.2 | $\chi^2 = 24.03$ P<.001 |
| SWS | Encouraging oneself to keep on reading when encountering any difficulties while reading the text | 58.3 | 42.3 | 37.1 | $\chi^2 = 15.19$ P<.001 |
| SAS 35 | Encouraging oneself to do better in the next time if one does not perform well in a particular reading after reading the text | 55.0 | 41.2 | 34.3 | $\chi^2 = 14.43$ P<.05 |
| SBS 9 | Reading the abstract or an introductory part before reading the text | 53.3 | 45.7 | 34.7 | $\chi^2 = 13.37$ P<.05 |
| SBS 5 | Looking at pictures /charts/tables/ figures in the text (if any) before reading the text | 52.5 | 49.0 | 38.2 | $\chi^2 = 9.43$ P<.05 |
| SBS 6 | Looking at questions about the text (if any) before reading the text | 52.5 | 44.3 | 39.0 | $\chi^2 = 6.03$ P<.05 |
| SBS 3 | Going through the text quickly before reading the text | 50.8 | 48.7 | 39.0 | $\chi^2 = 7.08$ P<.05 |
| SBS 7 | Scanning for main ideas before reading the text | 50.8 | 45.4 | 37.5 | $\chi^2 = 6.87$ P<.05 |
| SWS | Trying to relax when one feels nervous while reading the text | 50.0 | 43.5 | 39.5 | $\chi^2 = 6.54$ P<.05 |

Table 4.14 shows that 13 individual strategies were reported being employed more frequently by the higher proficiency students than did the lower

proficiency students. We can see that a significantly greater percentage of the higher proficiency students reported employing more strategies than did the lower proficiency students. Examples are, ‘SBS 2 Reading the title of the text before doing the actual reading’ (77.9% high proficiency level students, 73.1% moderate proficiency level students and 68.6% low proficiency level students), ‘SWS 17 Rereading certain part(s) of the text while reading the text’ (70.8% high proficiency level students, 58.5% moderate proficiency level students and 49.4% low proficiency level students), and ‘SWS 16 Guessing the meaning of the text from context while reading the text’ (68.30% high proficiency level students, 58.0% moderate proficiency level students and 51.0% low proficiency level students). The stacked bar graph in Figure 4.3 demonstrates an example of a positive pattern of variation.

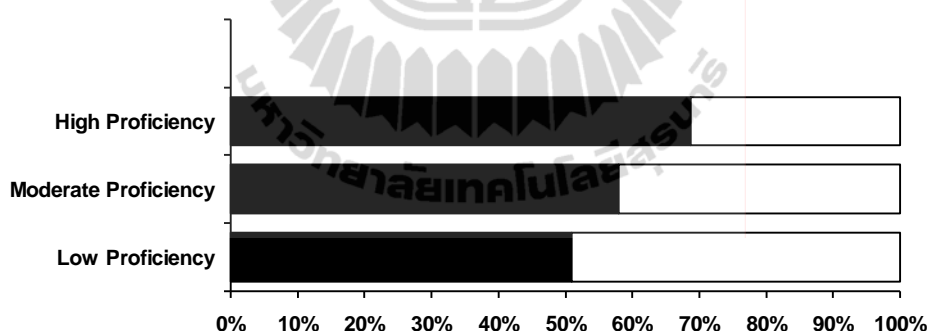


Figure 4.3 Example of Variation Pattern Classified as ‘Positive’

(High > Moderate > Low)

SWS 16 Guessing the meaning of the text from context while reading the text

| | | (Darker areas) ‘Often’ or ‘Always or almost always’ | | (White areas) ‘Never’ or ‘Sometimes’ | |
|-----------------------------|-----|-----------------------------------------------------------|------|--------------------------------------------|------|
| | n | Response | (%) | Response | (%) |
| High Proficiency | 472 | 322 | 68.3 | 150 | 31.7 |
| Moderate Proficiency | 705 | 409 | 58.0 | 296 | 42.0 |
| Low Proficiency | 191 | 98 | 51.1 | 93 | 48.9 |

Note: $\chi^2 = 10.11$ (df = 2), $p < .05$

In Figure 4.3 above, 68.3 percent of the high proficiency students reported the high frequency of use of guessing the meaning of the text from context while reading the text (SWS 16), whereas, 58 percent and 51.1 percent of the moderate- and low-proficiency students reported the high frequency of use of this reading strategy.

Taking a closer look at Table 4.15, we found that the lower proficiency level students used more strategies than did the higher proficiency level students, which shows a negative pattern of variation (low > moderate > high).

Table 4.15 Variation in Frequency of Students' Use of Individual Reading Strategies According to Reading Proficiency Classified as 'Negative'

| Individual Reading Strategies | | % of high use (3 and 4) | | | Observed χ^2 |
|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------|----------|------|------------------------------|
| | | Low | Moderate | High | |
| Used more by low > moderate > high proficiency students- Negative 5 strategies | | | | | P < .05 |
| SWS 1 | Searching for the meanings of new vocabulary items while reading the text | 46.2 | 42.0 | 35.8 | $\chi^2 = 6.45$ P < .05 |
| SWS 3 | Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text | 33.0 | 28.3 | 21.6 | $\chi^2 = 15.07$ P < .001 |
| SAS 31 | Translating the reading text into Chinese using Chinese script after reading the text | 22.7 | 19.6 | 9.3 | $\chi^2 = 16.67$ P < .001 |
| SAS 27 | Discussing the reading text with classmate(s) or friend(s) after reading the text | 16.3 | 13.7 | 6.7 | $\chi^2 = 6.56$ P < .05 |
| SAS 29 | Retelling oneself or other people about what has been read after reading the text | 16.0 | 10.2 | 6.9 | $\chi^2 = 14.96$ P < .05 |

Table 4.15 shows that a significantly greater percentage of the lower proficiency level students tended to use certain strategies more frequently than did the higher proficiency level students. Examples are, 'SWS 12 Searching for the meanings of new vocabulary items while reading the text' (46.2% low proficiency level students, 42.0% moderate proficiency level students and 35.8% high proficiency level

students), and ‘SWS 13 Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text’ (33.0% low proficiency level students, 28.3% moderate proficiency level students and 21.6% high proficiency level students). Figure 4.4 below demonstrates a negative pattern of variation in frequency of students’ use of individual reading strategies according to students’ reading proficiency.

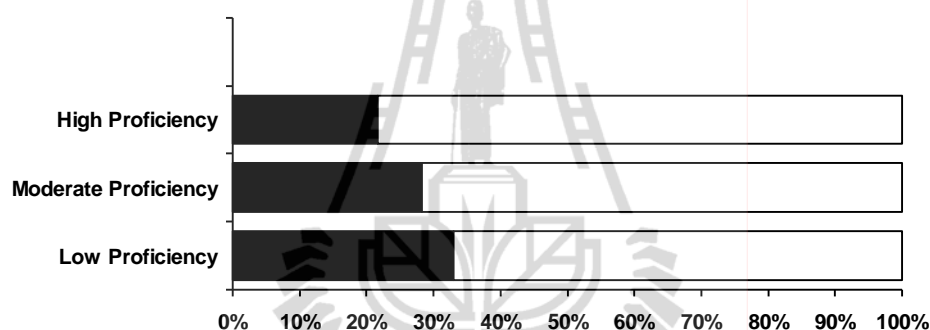


Figure 4.4 Example of Variation Pattern Classified as ‘Negative’

(Low > Moderate > High)

SWS 13 Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text

| | n | (Darker areas) ‘Often’ or ‘Always or almost always’ | | (White areas) ‘Never’ or ‘Sometimes’ | |
|-----------------------------|-----|-----------------------------------------------------------|------|--------------------------------------------|------|
| | | Response | (%) | Response | (%) |
| High Proficiency | 472 | 102 | 21.6 | 370 | 78.4 |
| Moderate Proficiency | 705 | 200 | 28.3 | 505 | 71.8 |
| Low Proficiency | 191 | 63 | 33.0 | 128 | 67.0 |

Note: $\chi^2 = 15.07$ (df = 2), $p < .001$

In Figure 4.4 above, 21.6 percent of the high-proficiency students reported the high frequency of use of appealing for assistance from other people about the meaning of a new vocabulary item while reading the text (SWS 13), whereas, 28.3

percent and 33.0 percent of the moderate- and low-proficiency students reported the high frequency of use of this reading strategy.

4.3.3.4 Variation in Frequency of Students' Use of Individual Reading Strategies According to Teachers' Gender

With regard to teachers' gender, the results from the ANOVA show no significant variations in the students' overall reported strategy use and the use of strategies in the SBS, SWS, SAS categories. However, the results from the Chi-square tests reveal that seven individual strategies varied significantly according to this variable.

Table 4.16 Variation in Frequency of Students' Use of Individual Reading Strategies According to Teachers' Gender

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 P<.05 |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-------------------------|--------|----------------------------|
| | | Male | Female | |
| Used more by students studying with female teachers-3 strategies | | | | |
| SWS | Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text | 48.7 | 56.9 | $\chi^2 = 5.193$ P<.05 |
| SAS 26 | Searching for the meanings of new vocabulary items after reading the text | 37.1 | 49.7 | $\chi^2 = 12.39$ P<.001 |
| SWS | Avoiding difficult parts while reading the text | 29.7 | 37.0 | $\chi^2 = 4.39$ P<.05 |
| SBS 11 | Predicting what might happen in the text before reading the text | 41.4 | 34.2 | $\chi^2 = 4.40$ P<.05 |
| SWS 13 | Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text | 35.3 | 25.9 | $\chi^2 = 8.66$ P<.05 |
| SBS 8 | Thinking of one's background knowledge about the text before reading the text | 34.5 | 21.1 | $\chi^2 = 19.18$ P<.001 |
| SWS 14 | Analysing a sentence structure while reading the text | 28.0 | 21.6 | $\chi^2 = 4.57$ P<.05 |

Table 4.16 demonstrates that a significantly greater percentage of the students studying with female teachers reported employing three individual strategies more frequently than did those who studied with male teachers, i.e. 'SWS 21

Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text', 'SAS 26 Searching for the meanings of new vocabulary items after reading the text', and 'SWS 19 Avoiding difficult parts while reading the text'.

A significantly greater percentage of the students studying with male teachers reported employing four individual strategies more frequently than did the students studying with female teachers, i.e. 'SBS 11 Predicting what might happen in the text before reading the text', 'SWS 13 Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text', 'SBS 8 Thinking of one's background knowledge about the text before reading the text', and 'SWS 14 Analysing a sentence structure while reading the text'.

4.3.3.5 Variation in Frequency of Students' Use of Individual Reading Strategies According to Types of University

With regard to types of university, the results from the ANOVA show no significant variations in the students' overall reported strategy use and the SBS, SWS and SAS categories. However, the results from the Chi-square tests reveal that two individual strategies varied significantly according to this variable. A significantly higher percentage of the non-211 Project university students reported employing the strategies more frequently than did the 211 Project university students.

Table 4.17 Variation in Frequency of Students' Use of Individual Reading Strategies According to Types of University

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 |
|--------------------------------------------------------------|---------------------------------------------------------------------------------------|-------------------------|--------------------|--------------------------|
| | | 211 University | Non-211 University | |
| Used more by non-211 university students-2 strategies | | | | |
| SAS 34 | Giving oneself a reward or treat when one does well in reading after reading the text | 23.2 | 29.8 | $\chi^2 = 6.66$ P<.05 |
| SAS 30 | Reviewing one's own notes after reading the text | 18.6 | 25.7 | $\chi^2 = 8.82$ P<.05 |

The Chi-square tests results (see Table 4.17) reveal that two individual strategies in the SAS category varied significantly according to this variable.

4.3.3.6 Variation in Frequency of Students' Use of Individual Reading Strategies According to Students' Extensive Reading

In terms of students' extensive reading, the results from the ANOVA show that significant variations were found in the students' overall strategy use and the use of strategies in the SBS, SWS and SAS categories. Further, the significant variations were found in 29 individual strategies by the Chi-square tests according to this variable, with the students who read extensively reporting employing strategies more frequently than students who did not read extensively outside the classroom setting. Among the 29 individual strategies, 9 individual strategies fall into the SBS category, 12 individual strategies fall into the SWS category, and 8 individual strategies fall into the SAS category.

Table 4.18 Variation in Frequency of Students' Use of Individual Reading Strategies According to Student s' Extensive Reading

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 |
|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|-------------------------|------------|----------------------------|
| | | Frequent | Infrequent | |
| Used more by students who read extensively-29 strategies | | | | |
| SBS 2 | Reading the title of the text before doing the actual reading | 83.9 | 67.9 | $\chi^2 = 34.23$ P<.001 |
| SWS | Highlighting important information or difficult vocabulary items by underlining while reading the text | 73.3 | 58.1 | $\chi^2 = 26.24$ P<.001 |
| SWS | Taking notes of the important information while reading the text | 70.6 | 56.8 | $\chi^2 = 21.19$ P<.001 |
| SWS | Guessing the meaning of the text from context while reading the text | 69.8 | 54.6 | $\chi^2 = 25.29$ P<.001 |
| SWS | Rereading certain part(s) of the text while reading the text | 64.3 | 55.3 | $\chi^2 = 8.84$ P<.05 |
| SWS | Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text | 64.3 | 54.2 | $\chi^2 = 15.81$ P<.001 |
| SWS | Thinking about the meaning of the reading text in Chinese while reading the text | 60.8 | 50.4 | $\chi^2 = 11.43$ P<.001 |
| SWS | Reading certain part(s) of the text slowly while reading the text | 57.8 | 51.4 | $\chi^2 = 4.30$ P<.05 |
| SWS | Encouraging oneself to keep on reading when encountering any difficulties while reading the text | 57.5 | 37.5 | $\chi^2 = 44.00$ P<.001 |
| SBS 9 | Reading the abstract or an introductory part before reading the text | 56.1 | 37.4 | $\chi^2 = 37.88$ P<.001 |
| SBS 5 | Looking at pictures/charts/tables/figures in the text (if any) before reading the text | 55.3 | 43.4 | $\chi^2 = 15.43$ P<.001 |
| SAS 26 | Searching for the meanings of new vocabulary items after reading the text | 55.0 | 44.9 | $\chi^2 = 11.17$ P<.05 |
| SBS 3 | Going through the text quickly before reading the text | 54.8 | 43.7 | $\chi^2 = 13.32$ P<.001 |
| SAS 35 | Encouraging oneself to do better in the next time if one does not perform well in a particular reading the text | 53.7 | 37.1 | $\chi^2 = 30.53$ P<.001 |

Table 4.18 Variation in Frequency of Students' Use of Individual Reading Strategies According to Student s' Extensive Reading (Contd.)

| Individual Reading Strategies | | % of high use (3 and 4) | | Observed χ^2 P<.05 |
|-------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------|------------|----------------------------|
| | | Frequent | Infrequent | |
| Used more by students who read extensively - 29 strategies | | | | |
| SBS 7 | Scanning for main ideas before reading the text | 53.4 | 39.4 | $\chi^2=21.60$ P<.001 |
| SBS 6 | Looking at questions about the text (if any) before reading the text | 52.0 | 42.6 | $\chi^2=9.76$ P<.05 |
| SWS | Trying to relax when one feels nervous when reading the text | 49.3 | 40.8 | $\chi^2=8.03$ P<.05 |
| SWS | Searching for the meanings of new vocabulary items while reading the text | 47.7 | 40.7 | $\chi^2=5.42$ P<.05 |
| SBS 11 | Predicting what might happen in the text before reading the text | 46.0 | 31.5 | $\chi^2=24.97$ P<.001 |
| SBS 1 | Searching for the meaning of new vocabulary before reading the text | 42.2 | 35.4 | $\chi^2=5.42$ P<.05 |
| SAS 34 | Giving oneself a reward or treat when one does well in reading the text | 37.6 | 23.9 | $\chi^2=25.34$ P<.001 |
| SWS | Making a summary of certain part(s) of the reading text in either Chinese or English, or both while reading the text | 36.8 | 31.0 | $\chi^2=4.14$ P<.05 |
| SAS 30 | Reviewing one's own notes after reading the text | 34.1 | 19.3 | $\chi^2=32.88$ P<.001 |
| SAS 33 | Evaluating one's performance after reading the text | 32.7 | 20.8 | $\chi^2=20.93$ P<.001 |
| SAS 28 | Making a summary of the whole reading text after reading the text | 31.1 | 20.5 | $\chi^2=16.82$ P<.001 |
| SBS 8 | Thinking of your background knowledge about the text before reading the text | 30.8 | 20.7 | $\chi^2=15.32$ P<.001 |
| SWS | Analysing a sentence structure while reading the text | 28.9 | 20.4 | $\chi^2=11.08$ P<.05 |
| SAS 27 | Discussing the reading text with classmate(s) or friend(s) after reading the text | 20.2 | 13.0 | $\chi^2=10.90$ P<.05 |
| SAS 29 | Retelling oneself or other people about what has been read after reading the text | 16.1 | 10.2 | $\chi^2=8.96$ P<.05 |

Table 4.18 indicates that students who read extensively differed from students who did not read extensively outside the classroom setting in the ways that they read English texts. From the results, we found that a greater percentage of students who read extensively reported employing the strategies more frequently than did the students who did not read extensively. Examples are, ‘SBS 2 Reading the title of the text before doing the actual reading’ (83.9% frequent and 67.9% infrequent), ‘SWS 20 Highlighting important information or difficult vocabulary items by underlining while reading the text’ (73.3% frequent and 58.1% infrequent), and ‘SWS 15 Taking notes of the important information while reading the text’ (70.6% frequent and 56.8% infrequent). The results imply that students who read extensively outside the classroom setting reported employing strategies significantly more frequently than students who did not read English texts extensively outside the classroom setting.

4.4 Summary

In sum, this chapter focused on two aspects. One is on presenting the frequency of reading strategy use at three different levels reported by 1,368 Chinese undergraduate students, and the other is on the data analysis for reading strategy use with the significant variations. The description of the report frequency of students’ reading strategy use provided an overall picture of reading strategy use by 1,368 Chinese undergraduate students, in the mean time, the ANOVA and the Chi-square tests have provided more detailed information in different manners.

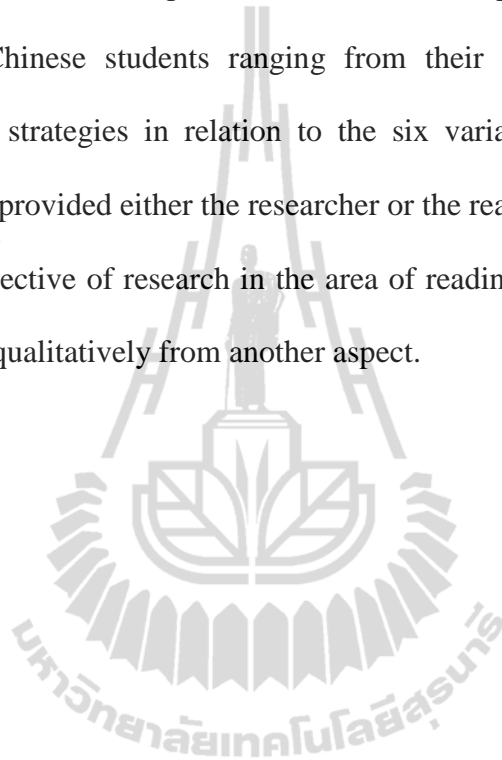
To be more specific, the variations in frequency of students’ reported reading strategy use in relation to students’ gender, fields of study, levels of reading proficiency, teachers’ gender, types of university, and students’ extensive reading have

been systematically examined. The research results presented in this chapter have demonstrated a number of points. The summary of each focal point is as follows:

- 1) Regarding the frequency of the overall strategy use, 1,368 Chinese undergraduate students reported employing reading strategies at the moderate level.
- 2) In terms of the frequency of use of reading strategies in the SBS, SWS categories, 1,368 Chinese students reported employing strategies at the moderate level in each of the two categories, while the frequency of use of reading strategies in the SAS category was reported being used the least frequently among the three categories.
- 3) In terms of the frequency of use of the individual reading strategies for comprehending reading texts, the students reported employing 23 strategies at the moderate level, while 11 strategies at the low level, and 1 strategy at the high level.
- 4) According to the results from the ANOVA, the significant variations in frequency of students' overall strategy use were found in relation to four investigated variables, i.e. students' gender, fields of study, levels of students' reading proficiency, and students' extensive reading. On the other hand, the significant variations were not found in relation to teachers' gender and types of university.
- 5) Based on the results of the Chi-square tests, the significant variations in students' use of individual reading strategies were found in relation to all the six variables.
- 6) Based on the results from the ANOVA tests, strong relationship between

students' strategy employment and two independent variables were found, i.e. students' gender and students' extensive reading.

To sum up, the results provide us with a clear picture in the frequency of strategy use by Chinese students ranging from their overall use to the use of individual reading strategies in relation to the six variables. The findings for the present study have provided either the researcher or the reader with useful information from another perspective of research in the area of reading strategies. Chapter 5 will present the results qualitatively from another aspect.



CHAPTER 5

DATA ANALYSIS FOR READING STRATEGY USE II

The purposes of this chapter were 1) to report the results of the qualitative data from students' semi-structured interviews which were conducted with 40 Chinese university students in Southwest China; and 2) to explore why students report employing certain strategies frequently and certain strategies infrequently.

5.1 Introduction

As mentioned earlier, the quantitative data were collected to answer Research Questions 1-7, which aimed to investigate the frequency of students' reading strategy use and the variations in frequency of students' use of reading strategies according to the six variables, i.e. students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading. However, the qualitative data were collected mainly to answer Research Question 8, i.e. 'Why do students report employing certain strategies frequently and certain strategies infrequently?', which is to elicit in-depth information and to triangulate the data in order to provide further insights into the subjects' reading strategy employment.

The semi-structured interviews were conducted in the second phase of data collection with 40 university students shortly after students' reading strategy questionnaires and reading comprehension test were administered to the students at the participating universities. As mentioned in Chapter 3, the interviews were

conducted in Chinese to ensure greater accuracy of research results, especially for the convenience of the interview participants. All the interview data were tape-recorded with students' permission. The data were transcribed and translated into English for the purpose of analyzing. The interview data were analysed qualitatively with 'open and axial coding' techniques (Punch, 2005). The results of students' semi-structured interviews are presented in detail below.

5.2 Results from Students' Semi-structured Interviews

5.2.1 Students' Opinions about the Importance of the Reading of English

When asked 'Do you think that English reading is important in your present study? Why or why not?', all participants agreed that English reading was important in their present study. However, their opinions varied from one another based on their responses. The students' opinions for the importance of English were grouped based on the similarities. With regard to students' opinions of the importance of English reading, four main categories emerged based on the interview data. They are 1) English reading helps them obtain information and knowledge; 2) English reading plays an important role in the exams; 3) English reading is important for a successful English communication; and 4) English reading helps to improve one's overall English proficiency level.

1) English reading helps them obtain information and knowledge

Regarding this aspect, the majority of the students agreed that English reading is important because they believed that English reading was an effective way for them to obtain information and knowledge outside classroom setting. Meanwhile, they could accumulate background knowledge, cultivate their logical and critical

thinking ability, learn about western cultures and read original works in English.

Examples are:

- *S 17: It's [English reading] very important. We can get a lot of information and cultivate our logical and critical ability in the process of reading.*
- *S 26: Personally speaking, English reading is the most important part in my process of study, because reading not only enables me to acquire the knowledge of the language, but also helps me obtain cultural background knowledge.*
- *S 27: Yes, I think English reading is very important, because I can not only know the cultural differences between China and western countries, but also can broaden my horizon through reading.*
- *S 40: I think English reading is very important, because reading is the major way for us to learn about the western cultures. If we don't read sufficiently, we cannot understand the written works and obtain knowledge from them.*

2) English reading plays an important role in the exams

Some students reported that English reading was important, because they thought that reading comprehension occupied a large proportion in their English exams. Furthermore, English reading ability was a major measurement to evaluate one's English proficiency. Examples are:

- *S 12: ...reading occupies a large proportion in the exams, so I think reading is very important both in our study.*
- *S 23: It depends on personal preference. I personally think it's important, because the exam system of our country decides its important position, you know, in every English exam, if you can't do well in the reading comprehension part, you'll lose a lot of marks and, definitely, you will lag behind other students....*
- *S 35: According to my ten-year's experience of learning English, I think English reading is very important, especially for the exam's sake. In addition, it's a major aspect to measure our English proficiency.*
- *S 37: I think it's very important, ..., reading comprehension occupies a large proportion in these exams.*

3) English reading is important for a successful English communication

Some students reported that English reading was important because they considered it a need for a successful English communication. Examples are:

- *S 11: It is an age of opening. The opening reform policy has been carried out for more than 30 years in our country. Besides, we entered World Trade Organization in 2001 and successfully held Olympic Games in 2008. We have more and more communication with other countries. However, English reading is one of the ways for us to know about the world outside China, through which we can learn more about the world and communicate with the other countries.*
- *S 12: ...The first reason is that language is used to communicate with others. Reading provides us with an important platform for our communication. If we can do well in reading, we can communicate with others better. So I think reading is very important both in our daily life and study.*
- *S 19: Someone once told me that it's very important to remember words. But I feel reading is more important, as the purpose of remembering words is to comprehend the texts. In addition, our mutual communication is based on the reading. If we can read the texts, we can read what others want to express.*

4) English reading helps to improve one's overall English proficiency level

Some students mentioned that English reading could improve their overall English proficiency level, as well as other aspects of English, such as listening, speaking and writing. Examples are:

- *S 22: I think reading is the most important part in English, because it reflects our reading level and we can improve our English by reading various kinds of articles.*
- *S 23: ...If we want to study abroad, we must be good at oral English which can be improved by reading.*
- *S 25: I think it's [English reading] very important, because English reading is based on basic knowledge, vocabulary, and grammar, which can show your comprehensive capability.*
- *S 26: ...That is to say, one can improve one's ability of listening, speaking and writing by reading.*

- *S 32: Yes, I do. Because I think English reading can improve our English level and broaden our horizons, and we can acquire cultures of different countries, especially English-speaking countries.*

5.2.2 Problems Students Encountered in the Reading of English

When asked if they encountered any problems when reading English texts, the majority of the students answered that they encountered various problems in the reading of English. With regard to the interview questions, four main problem categories were generated from the data obtained through the interviews. The problems mentioned by the students' were grouped based on the similarities, which include: 1) Unknown words/terms; 2) Poor grammar; 3) Insufficient background knowledge; and 4) Long reading passages.

1) Unknown words/terms

A number of students reported that many unknown words in reading were the big obstacles for them to comprehend the texts. Examples are:

- *S 1: ... I find my vocabulary is not enough to deal with the difficult texts, and I always lose patience to those long texts with many unknown words.*
- *S 2: Well, I find that even though I know all the meanings of the words, it is still hard for me to comprehend the texts if a new word appears. As a result, I normally stop reading....*
- *S 5: I often come across a lot of new words which make me feel confused about the texts.*
- *S 26: I think that some terms are the biggest problems for me when reading English texts. For example, when reading the economic section in China Daily, there are a lot of economic terms, which make it difficult for me to comprehend the texts.*
- *S 30: ...It's difficult for me to comprehend some texts which contain many new words or technical terms, such as texts on science and technology.*

2) Poor grammar

Many students also mentioned that their grammar was not good enough to

analyze the difficult sentences. As a result, they were unable to comprehend to texts.

Examples are:

- *S 9: My grammar is not good. As a result, I have difficulties in analyzing the complicated sentence structures and understanding the texts....*
- *S 28: My grammar is not good. I have difficulty in analyzing sentence structures, or I'm not able to translate a sentence into Chinese, which in turn makes me fail to understand the text.*
- *S 35: When I reading English texts, I may fail to understand the text. Because my grammar is not good, as a result, the grammatical structures of some sentences don't make sense to me.*
- *S 37: ...And sometimes, when encountering a difficult text or some complicated sentences, I can't analyze them because I am not good at grammar. As a result, I find it hard to go over the text smoothly and my mind is rigid.*

3) Insufficient background knowledge

Lack of background knowledge was another problem mentioned by some of the students. Examples are:

- *S 17: Too many new words and lacking cultural background knowledge are big problems for me to understand the text.*
- *S 25: I have difficulty to comprehend the reading texts as I don't have cultural background knowledge about the texts.*
- *S 30: ...Some sorts of texts are strange to me. It's difficult for me to understand them because I have little relevant background knowledge about them.*
- *S 32: ... and I'm lack of background knowledge. As a result, I have difficulties in reading texts on science and technology.*

4) Long reading passages

Many students also mentioned that the length of reading passages would affect their emotion to read. In another word, long reading passages made them lose interests in reading. Examples are:

- *S 14: I will lose interests to read long reading texts, especially the articles with more than one thousand words. I even don't know what the particular article is talking about after reading. I think I could do better*

and have interests to read it if the length of the article is within one thousand words.

- *S 17: The biggest problem for me is that our teacher requires us to read some passages which contain more than two thousand words. Because they are too long for me. It's really difficult for me to concentrate on reading them. I always lose interest and patience to read them after I start to read for a short while.*

5.2.3 Reasons for Students Using Certain Strategies Frequently and Certain Strategies Infrequently before Reading English Texts

When students were asked why they used certain strategies frequently and certain strategies infrequently before reading English texts, they provided a wide range of reasons for using the strategies frequently or infrequently. Based on the interview data, the results show that the majority of the students reported employing 9 SBS strategies frequently, and 2 SBS strategies infrequently. All the strategies were specified with reasons which emerged from the interview data. The results are demonstrated in two main categories, i.e.1) Reasons for using certain strategies frequently before reading the texts; and 2) Reasons for using certain strategies infrequently before reading the texts.

5.2.3.1 Reasons for Using Certain Strategies Frequently before Reading English Texts

Among the 11 strategies, 9 strategies were reported being used infrequently by students. These strategies are:

SBS 1 Searching for the meaning of new vocabulary before reading the text

Regarding 'SBS 1 Searching for the meaning of new vocabulary before reading the text', the students explained why they employed it frequently. The reasons were mainly categorized into two categories based on the purposes of using this

strategy: 1) to remember new words; and 2) to help them comprehend the texts better.

1) To remember new words

Some students reported that searching the meaning of new vocabulary before reading the texts could help them remember words, so as to increase their vocabulary size. Examples are:

- *S 5: Because I think efficiencies must be made in reading. It is easy for me to remember words through looking up the new words in the dictionary.*
- *S 15: Because we do reading exercises mainly for the purpose of passing the examinations. 'Looking up new words in the dictionary' can help me remember more words.*
- *S 28: Before reading, I usually search for the meaning of new vocabulary, because new words are generally very important and I can remember them if I know their meaning.*
- *S 36: I would, for example, search for the meaning of new vocabulary because it helps me increase my vocabulary size.*

2) To help them comprehend the texts better

Many students reported using this strategy frequently because it could help them get general understanding and understand the particular texts better. Examples are:

- *S 4: ...Searching for the meanings of the new words could help me get a general understanding of a text....*
- *S 12: ...We can understand each sentence and text better if we know the meaning of every new word by searching the meaning of the new vocabulary before reading the text.*
- *S 14: Ok, I like searching the meaning of the new vocabulary before reading the text. I think it is very essential to catch the meaning of words, which in turn would help me understand the reading text.*
- *S 29: First, I would search for the meaning of new words, because vocabulary is the basic elements of the text. If words cannot be understood, the whole text cannot be understood as well.*

SBS 2 Reading the title of the text before doing the actual reading

Regarding ‘SBS 2 Reading the title of the text before doing the actual reading’, the majority of the students reported employing this strategy frequently in order to get an idea and information of the text, because the title was normally informative and convey the author’s perception. Examples are:

- *S 12: ... as for ‘reading the title of the text’, I think the whole text is developed around the title, through which I can generally know about what the text is going to tell us.*
- *S 14: ... ‘Reading the title of the text’ is also critical for me to comprehend the text, for the title is the core of a passage. It is very informative and could provide me with a lot of information actually.*
- *S 30: ...I would read the title of the text before doing the actual reading, because I can get a rough idea about the content of the text and it [reading the title] let me to recall the related background knowledge, which makes it easy to comprehend the text....*
- *S 33: First, what I usually do is to read the title of the text, because I can roughly predict what the text is talking about, and it helps me understand the text better and read the text easily.*

SBS 3 Going through the text quickly before reading the text

Regarding ‘SBS 3 Going through the text quickly before reading the text’, the majority of the students reported employing this strategy frequently because it could help them get an idea and information of the text. Examples are:

- *S 27: I usually go over a long text quickly and try to get a rough idea of the text.*
- *S 28: [Before reading] I like to go through the text quickly, because it can help me get the rough idea of the text, therefore, help me understand the text better.*
- *S 31: It [Going through the text quickly before reading] is also an important method, because it can improve my reading speed and help me catch the main idea of the text.*
- *S 36: You can identify the important parts through going over the text quickly. It [Going through the text quickly before reading the text] helps you get the important information. As a result, you can get twice result with half of the effort.*

SBS 4 Reading the first and the last paragraphs before reading the text

With regard to ‘SBS 4 Reading the first and the last paragraphs before reading the text’, the majority of the students reported employing this strategy frequently because it could help them to get an idea and information of the text in a short time. But a few students explained they were trained by their English teachers to use it frequently. Examples are:

1) To get an idea and information in a short time

- *S 15: ...Reading the first and the last paragraphs of the text can help me get a rough idea of the text in a short time.*
- *S 20: ... I think it is a good way to improve the efficiency and accuracy of English reading.*
- *S 27: I would always read the first and the last paragraphs of the text, as the first paragraph usually accounts for the cause of the story and the last concludes the text, for example, texts of philosophy sort would tell a principle of the nature, so do English texts.*
- *S 32: I like reading the first and the last paragraphs of the text, as they are the key paragraphs and surely most informative, in which there are important information about the questions.*

2) Trained by teachers to use this strategy

- *S 1: ...Our teacher has told us the first paragraph and last paragraphs normally contain the gist of the text, so I usually try to read the two paragraphs first.*
- *S 2: I always read the first and the last paragraphs, because our teacher has taught us to do so. As she said, reading the first and the last paragraphs is helpful for us to comprehend the texts, especially reading argumentative, narrative, exposition articles.*
- *S 10: Because our teacher has told us the first paragraph is the core of the text and the last is the conclusion. Reading them first and then going over other parts of the texts rapidly can help understand the texts quickly.*
- *S 31: It [Reading the first and the last paragraphs before reading] is a method our teacher always stressed in class....*

SBS 5 Looking at pictures/charts/tables/ figures in the text (if any) before reading the text

With regard to ‘SBS 5 Looking at pictures/charts/tables/ figures in the text (if any) before reading the text’, the students reported employing this strategy frequently because it helped them get information and clues of the text from the pictures, charts, tables, and figures. Examples are:

- *S 29: ...And I would look at pictures, charts, tables and figures that appear in the text, which contains much intuitionistic information.*
- *S 31: And looking at pictures, charts, tables, and figures that appear in the text, because those pictures work as illustrations, they can help us understand the text.*
- *S 32: ... They [pictures, charts, etc] can give us much information about the text....*
- *S 38: ...That is to say, pictures and charts, etc. may provide me with important information about the text.*
- *S 40: Yes. And the pictures and figures can help me understand the text better.*

SBS 6 Looking at questions about the text (if any) before reading the text

With regard to ‘SBS 6 Looking at questions about the text (if any) before reading the text’, the students reported employing it frequently because it helped them find answers easily and get information about the text from the questions. Examples are:

- *S 12: ...I like reading the questions behind the text before reading because it provides me with important information of the text. It also helps me understand the text better.*
- *S 19: ... I can get a general idea about the text through looking at questions about the text before reading the text....*
- *S 38: ...Questions are always informative. I could get a clear goal for reading by knowing about questions in the first place.*

- *S 32: First, I would look at questions about the text, because they can give me a general idea of the text as they are designed on the base of the text.*
- *S 40: Reading the questions attached to the texts first could help me comprehend the texts, because I would read the texts with purposes.*

SBS 7 Scanning for main ideas before reading the text

With regard to ‘SBS 7 Scanning for main ideas before reading the text’, the students reported employing this strategy frequently because it could help them get the main idea of the text. Examples are:

- *S 6: It is helpful to get ideas of the text through scanning the text before reading it.*
- *S 19: ...such as ‘scanning the main idea of the text’, I think it’s not necessary to use in order to get the main idea of the text, especially in exams.*
- *S 29: I can get useful information, or, maybe main ideas of the text through scanning the text before reading it....*
- *S 31: Scanning for main ideas is very practical to catch the main idea.*
- *S 38: ...I would scan the whole text first to grasp the main ideas of the text. In my opinion, it is helpful and useful.*

SBS 9 Reading the abstract or an introductory part before reading the text

With regard to ‘SBS 9 Reading the abstract or an introductory part before reading the text’, the majority of the students reported employing it frequently because they could get an idea and information of the text in a short time and to understand the text better. Examples are:

- *S 27: I would read the abstract or an introductory part. They may conclude the main idea of the text and contain some important information.*
- *S 30: ...In addition, I would read abstract and introduction parts of a text, because I can get a general idea of the whole text, which in turn makes reading become easier....*

- *S 34: ...Besides, I would read the abstract or an introductory part, because they are the summary of the text. They can help you understand the text.*
- *S 40: Abstract or an introductory usually introduce the background of the author or the text which can help me to understand the text better.*

SBS 11 Predicting what might happen in the text before reading the text

With regard to ‘SBS 11 Predicting what might happen in the text before reading the text’, some students reported employing this strategy frequently because it was helpful or useful for them to get better understanding of the text so as to improve their reading efficiency. Examples are:

- *S 27:I also frequently predict what might happen in the text, because the previous parts usually carry a foreshadowing of what is to follow later on. If you can make a right predication, you can understand the text better.*
- *S 28: Predicting what might happen in the text [before reading] enables me to understand the text better.*
- *S 31: ...I think that it [predicting what might happen in the text before reading the text] can improve my reading efficiency.*
- *S 37: ...In addition, I would predict what might happen in the text before reading the text, because it is helpful for me to comprehend the text...*

5.2.3.2 Reasons for Using Certain Strategies Infrequently before Reading English Texts

Among the 11 strategies, 2 strategies were reported being used infrequently by students. These strategies are:

SBS 8 Thinking of one’s background knowledge about the text before reading the text

With regard to ‘SBS 8 Thinking of one’s background knowledge about the text before reading the text’, the majority of the students reported employing this

strategy infrequently because, for most of the time, they did not have background knowledge about the reading texts. Examples are:

- *S 14: I don't use it often, because I haven't accumulated enough background knowledge about the reading texts.*
- *S 10: It's probably because I know little about the culture background and have a small accumulation of knowledge. I'm not able to think of it.*
- *S 14: But I do not like to use background knowledge, because I know little about the culture of the Europe and the United States when reading English articles which are related to western culture background.*
- *S 25: I don't read a lot, so I have little background knowledge in my mind.*

SBS 10 Looking for the parallel article(s) in Chinese (if any) before reading the text

With regard to 'SBS 10 Looking for the parallel article(s) in Chinese (if any) before reading the text', some students reported employing this strategy infrequently because it was not easy for them to find a parallel article, or some students thought it was unnecessary to do so as they believed that parallel articles in Chinese might not be useful or helpful. Examples are:

- *S 14: I don't like looking for the parallel articles in Chinese, because I can't find them.*
- *S 25: I think it's a trouble [to look for the parallel article(s) in Chinese]. It's not an easy job to find relative Chinese articles as many references may not be available in the library.*
- *S 12: I don't like looking for the parallel articles(s) in Chinese (if any). I don't think it's necessary to do so, since each text has its own theme. I don't think related Chinese articles would be useful and helpful for us to comprehend English reading texts.*
- *S 24: Because it [looking for parallel Chinese articles] can only provide me with some background knowledge. Mastering English sentences and*

increasing vocabulary are more important than accumulating background knowledge in learning English. So I think it's unnecessary to read the related Chinese materials.

5.2.4 Reasons for Students Using Certain Strategies Frequently and Certain Strategies Infrequently while Reading English Texts

When students were asked why they used certain strategies frequently and certain strategies infrequently while reading English texts, they provided a wide range of reasons for using the strategies frequently or infrequently. Based on the interview data, the results show that the majority of the students reported employing 12 SWS strategies frequently, and 2 SWS strategies infrequently. All the strategies were specified with reasons which emerged from the interview data. The results are demonstrated in two main categories, i.e.1) Reasons for using certain strategies frequently while reading the texts; and 2) Reasons for using certain strategies infrequently while reading the texts.

5.2.4.1 Reasons for Using Certain Strategies Frequently while Reading English Texts

Among the 14 strategies in while-reading stage, 12 strategies were reported being used frequently. These strategies are:

SWS 12 Searching for the meanings of new vocabulary items while reading the text

Regarding 'SWS 12 Searching for the meanings of new vocabulary items while reading the text', the students explained employing this strategy frequently because it could help them remember more new words, increase their vocabulary size, and comprehend the texts better. Examples are:

- *S 25: Because I can increase my vocabulary by looking up words in the dictionary*
- *S 26: ...Looking up new words can help you remember them and you can increase your vocabulary size.*
- *S 29: First, I would search for the meaning of new words, because it help me understand the text correctly.*
- *S 36: ...Search for the meanings of new vocabulary items, as I mentioned just now, it not only helps you understand the text, but also helps you expand your vocabulary.*

SWS 13 Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text

Regarding ‘SWS 13 Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text’, a number of students reported employing this strategy frequently because it was easy and convenient for them to get help quickly. Examples are:

- *S 2: I think it is easy and save time to enquire about the meaning of the new words from others....*
- *S 5: It can save time to appeal for assistance from other people about the meaning of a new vocabulary items....*
- *S 29: ... Secondly, I would appeal for assistance from other people about the meaning of new words, because it save time and is convenient for me to consult other people....*
- *S 36: ...I would appeal for assistance from other people about the meaning of a new vocabulary item because it's easy to get a reply.*
- *S 37: I would appeal for assistance from other people about the meaning of a new vocabulary item for saving time.*

SWS 15 Taking notes the important information while reading the text

Regarding ‘SWS 15 Taking notes the important information while reading the text’, many students reported employing this strategy frequently because it could

help them recall the important parts of the text and understand the text better.

Examples are:

- *S 28: I think that it [taking notes the important information while reading the text] is very important, because it makes easier to recall the important parts and main content of the text, which in turn helps me understand the whole text better. That's why I use this technique very often.*
- *S 31: ...For most of the time, it [taking notes the important information while reading the text] helps me find important information of the text easily....*
- *S 36: ...I like taking notes the important information, because it helps me answer the questions and understand the text.*
- *S 40: While reading, I would take notes the important information because it is convenient for me to find important parts of the text. As a result, I can quickly find out the answers.*

SWS 16 Guessing the meaning of the text from context while reading text

With regard to 'SWS 16 Guessing the meaning of the text from context while reading the text', some students reported employing this strategy frequently because they believed that it was useful or helpful for them to comprehend the text deeper and to get a main idea quickly. Examples are:

- *S 31: It [Guessing the meaning of the text from context while reading the text] is very helpful to comprehend the text.*
- *S 37: It [Guessing the meaning of the text from context while reading the text] is quick for me to get main ideas of the text.*
- *S 38: I like guessing the meaning of the text from context, because it's useful to get a general idea of the text in a short time.*
- *S 40: ...Meanwhile, I would guess the meaning of the text from context because this method helps me to save time when I read some difficult articles.*

SWS 17 Rereading certain part(s) of the text while reading the text

With regard to ‘SWS 17 Rereading certain part(s) of the text while reading the text’, the majority of the students reported employing this strategy frequently because they thought the particular part was informative and helpful for them to answer the questions, and it could help them comprehend the text better. Examples are:

- *S 2: Well, I reread certain parts in terms of finding the answer to the questions attached to the texts, especially, I think that the particular part is informative and helpful for me to answer the questions.*
- *S 27: I frequently reread certain parts of the text. I think it's very important, because you can get a further understanding of the text by rereading certain parts....*
- *S 28: ...In addition, I frequently reread certain parts of the text slowly because rereading can deepen my understanding of the text and help me understand the text better.*
- *S 36: ... I like rereading certain parts of the text, because these important parts can help me understand the text better.*
- *S 40: ...I often reread certain parts of the text to deepen my understanding of the articles and difficult sentence structures....*

SWS 18 Reading certain part(s) of the text slowly while reading the text

Regarding ‘SWS 18 Reading certain part(s) of the text slowly while reading the text’, some students reported employing this strategy frequently because it helped them get detailed and important information of the texts which in turn helped them comprehend the text better. Examples are:

- *S 24: I can get detailed information by reading slowly....*
- *S 25: ...Because reading certain parts slowly can improve my understanding of the texts.*
- *S 29: ... I like reading certain parts of the text slowly, because reading them slowly can help me understand the text thoroughly and make clear the author's thoughts in these parts.*

- *S 30: Generally I like reading certain parts of the text slowly, because these parts contain very important information for me to understand the text....*
- *S 37: ...I like reading certain parts of the text slowly, because it helps me understand the text deeper.*

SWS 19 Avoiding difficult parts while reading the text

Regarding ‘SWS 19 Avoiding difficult parts while reading the text’, the majority of the students reported employing this strategy frequently because some students believed that it was unnecessary to understand every sentence in a text, some students thought that being stuck into the difficult parts would affect their reading patience and mood, besides, avoiding difficult parts would save time to read other parts of the texts. Examples are:

- *S 22: I usually avoid some difficult parts of the text because I don't think I have to know every bit in the text.*
- *S 23: As for the difficult words, I usually avoid them. Otherwise they will affect my mood.*
- *S 30: ...When I come across the difficult parts, I would skip them and never waste time on them, because I have to save time to read the other parts of the text, in the mean time, I don't want to be affected by the difficult parts.*
- *S 35: I always avoid difficult parts, because being stuck in these difficult parts affects my patience and mood to read....*
- *S 36: ...I avoid reading difficult parts in the text in order to save time to read the other parts.*
- *S 38: ...I think that I will lose patience and mood to keep on reading if I am stuck into some difficult parts. So, if a sentence or a paragraph is too difficult, I would avoid them.*

SWS 20 Highlighting important information or difficult vocabulary items by underlining while reading the text

In terms of ‘SWS 20 Highlighting important information or difficult vocabulary items by underlining while reading the text’, the majority of the students reported employing this strategy frequently because they believed these underlined items contained informative and important contents for them to pay attention to. Examples are:

- *S 17: Underlining important information and difficult words can remind me of those important information, and can help me remember words.*
- *S 24: I frequently underline the important information and difficult words, because I think I can get the main idea of the text from the highlighting parts.*
- *S 28: I like highlighting important information or difficult vocabulary items by underlining, through which I can roughly know the content of the text, important information, or what the author wants to express....*
- *S 30: I like highlighting important information or difficult vocabulary items by underlining, Because I can find the important and informative parts quickly when rereading the text, which in turn reminds me of the main idea of the text.*
- *S 31: I use it [highlighting important information or difficult vocabulary items by underlining] very often because it could remind me of important parts in the texts which should be paid attention to.*

SWS 21 Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text

Regarding ‘SWS 21 Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text’, the majority of the students reported employing this strategy frequently because they believed these underlined items could help them find the important information easily and quickly, as well as these items should be paid attention to. Examples are:

- *S 6: As time is tight in doing reading comprehension with exercises, I would mark the important information so that I could find them easily and quickly.*
- *S 23: I think that 'marking the important information in the text' is a useful method for me to find out the right answer, so I use it frequently.*
- *S 27: I would highlight important information or difficult vocabulary items by making symbols while reading, because I want to know their meaning and remember them. Highlighting could give me a hint, so I can look them up in the dictionary after reading.*
- *S 28: ... I would highlight difficult vocabulary items by making symbols, for these difficult words can not only increase my vocabulary size but also deepen my understanding of the text.*

SWS 22 Thinking about the meaning of the reading text in Chinese while reading the text

Regarding 'SWS 22 Thinking about the meaning of the reading text in Chinese while reading the text', a number of students reported employing this strategy frequently because they believed that thinking in Chinese could help them remember the meaning of the text and the words in the texts. Consequently, they could understand the text better. Examples are:

- *S 27: I think that thinking about the meaning of the reading text in Chinese is also very important because I can get the main idea of the text and remember it soon if I am able to think it in Chinese...*
- *S 29: ...I like thinking about the meaning of the text in Chinese. I personally feel it may be a bit easier for me to remember the meaning of the text and the new words in the text....*
- *S 30: ... While reading, I would think about the meaning of the text in Chinese or translate the text in Chinese in mind, because it helps me understand the text and remember some words.*
- *S 38: ...I like thinking about the meaning of the reading text in Chinese because thinking in Chinese helps me understand the text better.*
- *S 40: When reading, I cannot help myself thinking about the meaning of the reading text in Chinese. Because I think that it helps me have a better understanding of the text.*

SWS 24 Trying to relax when one feels nervous when reading the text

Regarding ‘SWS 24 Trying to relax when one feels nervous while reading the text’, some students reported employing this strategy frequently because they believed that reading in a pressured and nervous state would affect their reading efficiency. In other words, they would try to relax when feeling nervous by stopping reading for a while, drinking a glass of water, looking out of the window etc, in order to achieve efficient reading. Examples are:

- *S 10: ... I would stop reading to relax myself when I feel nervous while reading and adjust myself by doing something else in order to reading efficiently.*
- *S 23: I would try to relax myself while reading. Actually, I'm very emotional when I meet difficulties. If I do well at the beginning, I will gain confidence to go on reading. On the contrary, I will give up and stop to do the other parts....*
- *S 27: I would try to relax when I feel nervous when reading, because I think I should enjoy reading instead of reading it nervously.*
- *S 29: ...I would try to relax myself when I feel nervous in reading, because when I am in a relaxing mood, I can do it well....*
- *S 33: When I feel nervous, I would take a deep breath to relax myself. If I continue reading in a muddled state without considering efficiency, I may still know nothing about the text even after reading two to three times.*
- *S 40: ...When I feel nervous, I would try to relax myself. Because I may miss some important information and not understand those words which I should have known if reading nervously.*

SWS 25 Encouraging oneself to keep on reading when encountering any difficulties while reading the text

With regard to ‘SWS 25 Encouraging oneself to keep on reading when encountering any difficulties while reading the text’, the majority of the students reported employing this strategy frequently because they believed that learning

language is a long process, and they must have perseverance in order to learn English well. Examples are:

- *S 29: When encounter any difficulties while reading, I would encourage myself to keep on reading, Because I don't want to be a person with no perseverance. In addition, I cannot make progress in reading if I give up reading once I come across difficulties.*
- *S 31: ...I believe that learning a language is a long and difficult process. We must have perseverance to overcome difficulties in the process.*
- *S 33: ...I would encourage myself to keep on reading. Because I know that not all reading texts are easy, and I cannot make progress in reading if I just give up when encountering any difficulties.*
- *S 35: If the text is difficult, I would encourage myself to go on reading. Because I must have perseverance and a good mentality in the process of reading.*

5.2.4.2 Reasons for Using Certain Strategies Infrequently while Reading English Texts

Among the 14 strategies, 2 strategies were reported being used infrequently by students. These strategies are:

SWS 14 Analysing a sentence structure while reading the text

In term of 'SWS 14 Analysing a sentence structure while reading the text', the majority of the students reported employing this strategy infrequently because they mentioned that they were not good at grammar and had no ability to analyse a difficult sentence structure in reading. Examples are:

- *S 5: Because my English is weak, I am unable to analyse sentence structures correctly.*
- *S 10: Because my grammar is poor, I don't analyse the sentence structures while reading.*
- *S 13: As my grammar is poor, I seldom analyse the sentence structures.*

- *S 17: I don't like it [analyzing a sentence structure while reading text]. I think it's difficult for me to do so as my grammar is poor.*

SWS 23 Making a summary of certain part(s) of the reading text in either Chinese or English, or both while reading the text

With regard to 'SWS 23 Making a summary of certain part(s) of the reading text in either Chinese or English, or both while reading the text', the majority of the students reported that they employed this strategy infrequently because they thought it was too difficult for them to summarize a text even though they know summarizing would help them comprehend the text better. Examples are:

- *S 3: I never summarise the text, because I'm unable to do so without the help of our teacher.*
- *S 13: ...I'm not able to summarize the text with English, because it's too difficult for me. As a result, I don't take this method.*
- *S 17: I don't think it's a easy job for me to summarise the text, so I quit.*
- *S 12: I know that summarizing the whole text is useful and helpful for us in terms of comprehending the text better. But it's impossible for me to summarise the whole text in English. I don't think I have the ability to do so. It's too difficult.*
- *S 25: It's too difficult for me to summarisze the text, you know, I even can not understand the text, how could I summarise it?*

5.2.5 Reasons for Students Using Certain Strategies Frequently and Certain Strategies Infrequently after Reading English Texts

When students were asked why they used certain strategies frequently and certain strategies infrequently after reading English texts, they provided a wide range of reasons. Based on the interview data, the results show that 4 SAS strategies were reported being employing frequently by the majority of the students, while 6 SAS strategies were reported being employing infrequently. These strategies were specified

with reasons which emerged from the interview data. The results are demonstrated in two main categories, i.e.1) Reasons for using certain strategies frequently after reading the texts; and 2) Reasons for using certain strategies infrequently after reading the texts.

5.2.5.1 Reasons for Using Certain Strategies Frequently after Reading

English Texts

Among the 10 strategies, 4 strategies were reported being used frequently by the majority of the students. These strategies are:

SAS 26 Searching for the meanings of new vocabulary items after reading the text

Concerning ‘SAS 26 Searching for the meanings of new vocabulary items after reading the text’, the majority of the students reported employing this strategy frequently because it could increase their vocabulary size or help them comprehend the texts better. Examples are:

- *S 1: Because I want to increase my vocabulary. That’s why I use this technique often. In addition, I believe that searching for the meanings of new vocabulary items can help me comprehend the texts better.*
- *S 14: I search for the meanings of new vocabulary all the time for enlarging my vocabulary size.*
- *S 15: I can increase my vocabulary size by searching for the meanings of new vocabulary frequently.*
- *S 29: ... I often search for the meaning of new words after reading the text. Because we can have a thorough understanding of the text by doing so.*
- *S 36: When I read a text containing many new words, I always look them up in the dictionary after reading to help myself understand the text better.*

SAS 32 Reflecting one's performance after reading the text

With regard to 'SAS 32 Reflecting one's performance after reading the text', many students reported employing this strategy frequently because they could make progress in reading through reflecting, and increase their reading experience and skills. Examples are:

- *S 13: ...I like reflecting in order to check how well I perform in a particular reading and whether I have learned something from reading.*
- *S 15: When I finish reading a text, I always think about what I have gained from reading and where I don't do well. It (Reflecting one's performance after reading the text) can increase my reading experience and improve my reading skills.*
- *S 29: ...I would reflect my performance after reading a text, because we can make progress through reflecting.*
- *S 30: ...I would reflect my performance to find out what I have ignored in reading so that I can make progress in the next time.*

SAS 34 Giving oneself a reward or treat when one does well in reading after reading the text

Concerning 'SAS 34 Giving oneself a reward or treat when one does well in reading after reading the text', the majority of the students reported employing this strategy frequently because they believed that a reward or treat would help them build up confidence to read and to learn English well, and they also believed that encouraging themselves by a reward or treat would stimulate them to make progress in reading. Examples are:

- *S 23: I frequently reward myself when I perform well in reading to build up my confidence to learn English. For example, if I do well in reading comprehension today, I will treat myself some sweets.*
- *S 27: I would give myself a reward or treat when I do well in reading, as I believe one can achieve nothing without confidence...*

- *S 29: ...Next, I would give myself a reward or treat when I do well in reading, because encouragement can stimulate one to make progress.*
- *S 36: I would give myself a reward or treat when I do well in reading to build up confidence so that I can do better in the next time.*
- *S 37: ...I would give myself a reward or treat when I do well in reading. Because I think that I should have confidence to make unceasing progress, so it's necessary to award myself.*

SAS 35 Encouraging oneself to do better in the next time if one does not perform well in a particular reading after reading the text

Concerning 'SAS 35 Encouraging oneself to do better in the next time if one does not perform well in a particular reading after reading the text', a number of students reported employing this strategy frequently because they believed that encouragement would help them build up confidence to do better in the next time.

Examples are:

- *S 3: If I didn't do well in a particular reading, I would encourage myself to do better. Because I want to establish confidence in learning English in stead of discouraging myself.*
- *S 8: I use it [encouraging oneself to do better in the next time if one does not perform well in a particular reading] to build up my confidence in learning English.*
- *S 12: If I didn't do well in a particular reading, I would encourage myself do better in the next time, because encouragement could help me build up confidence to learn English. We shouldn't blame or complain ourselves, since English is not our mother tongue and we surely have difficulty in learning it. Anyway, it's not easy to read something in English. So encouragement is always necessary.*
- *S 29: ...I would encourage myself to do better in the next time if I do not perform well in a particular reading, because it is very useful for me to build up confidence to read more and to learn English well.*
- *S 33: ...I would encourage myself to do better in the next time by buying myself a lollipop if I did not perform well in a particular reading, because it's necessary to build up my confidence.*

- *S 34: ...I often encourage myself to do better in the next time if I do not perform well in a particular reading, because this strategy help me build up confidence to read.*

5.2.5.2 Reasons for Using Certain Strategies Infrequently after Reading

English Texts

Among the 10 strategies, 6 strategies were reported being used infrequently by the majority of the students. These strategies are:

SAS 27 Discussing the reading text with classmate(s) or friend(s) after reading the text

With regard to ‘SAS 27 Discussing the reading text with classmate(s) or friend(s) after reading the text’, the majority of the students reported employing this strategy infrequently because they thought they were not confident to talk about it with their classmates or friends, or they did not believe that their classmates were able to provide them with constructive advice for their discussion. Examples are:

- *S 3: I'm not confident with my English. I'm afraid that my discussion will be laughed at by other classmates. So I don't use this strategy frequently.*
- *S 16: Because I can not understand the text for most of the time, I don't know how and what to discuss about the text with my classmates. I will feel sad if I say something wrong.*
- *S 23: I don't like to discuss with my classmates. Because my classmates' English and mine are in the same level. I don't think they can provide me with constructive advice.*
- *S 26: Because I am not confident enough to discuss about it with other people, they might be laugh at me if I say something wrong. Then I don't discuss the text with anybody after reading.*

SAS 28 Making a summary of the whole reading text after reading the text

With regard to ‘SAS 28 Making a summary of the whole reading text after reading the text’, a number of students reported employing this strategy infrequently because they thought it was unnecessary or too difficult for them to summarize a text even though they know summarising would help them comprehend the text. Examples are:

- *S 15: I don't think it's necessary to make a conclusion about the text.*
- *S 17: To be honest, I know that summarising the text after reading is very good. But I hate to summarise the text after reading because it's too difficult.*
- *S 25: It's too difficult to do so (summarising the reading texts) as my English is not good enough.*
- *S 29: I won't summarise the text unless our teacher requires me to do so. You know, summarising is not an easy job, especially in English. It's a big headache for me.*
- *S 36: ...It's too difficult to summarise the whole text, anyway.*

SAS 29 Retelling oneself or other people about what has been read after reading the text

With regard to ‘SAS 29 Retelling oneself or other people about what has been read after reading the text’, the majority of the students reported employing this strategy infrequently because they thought they were not confident to talk about it with their classmates or friends. A number of students reported that they did not use this method because there was no English environment or the reading texts were not attractive. Examples are:

- *S 6: Because there is no English speaking environment, I am not able to retell what has been read in English correctly, though the meaning is familiar to me.*

- *S 15: As my English poor, it's impossible for me to retell what I have read with my classmates or friends.*
- *S 33: Normally, I don't do this [retelling oneself or other people about what has been read after reading the text]. It's boring to talk with classmates or friends about an article which is not interesting.*

SAS 30 Reviewing one's own notes after reading the text

Concerning 'SAS 30 Reviewing one's own notes after reading the text', many students reported employing this strategy infrequently because they thought that English was not their major so that they were unwilling to spend time and had no interests to review their notes after reading the text. Examples are:

- *S 5: I don't like to review the notes, because I have no interest in learning English. In addition, English is not my major.*
- *S 8: ...I have no interests to review my own notes after reading.*
- *S 24: I seldom review the notes I have taken. It's surely useful, but I have no interests to do that. Sometimes, I have no time.*
- *S 31: Frankly speaking, English is not my major. I don't want to spend too much on learning English. So I don't review my notes frequently after reading.*

SAS 31 Translating the reading text into Chinese using Chinese script after reading the text

With regard to 'SAS 31 Translating the reading text into Chinese using Chinese script after reading the text', many students reported employing this strategy infrequently because, for most of the time, they thought that translating the text into Chinese wasted their time as well as affected their reading efficiency to comprehend the text. Examples are:

- *S 25: ...I wouldn't translate reading texts into Chinese because it wastes my time, and there is no need to do so.*

- *S 35: ...I wouldn't translate reading texts into Chinese. Because it affects my reading efficiency.*
- *S 36: Generally, if I understand the text after reading, I wouldn't translate it into Chinese sentence by sentence. It wastes time.*
- *S 37: ...I don't think translating the reading text into Chinese using Chinese script after reading the text could help me comprehend the text, so I don't use frequently.*

SAS 33 Evaluating one's performance after reading the text

With regard to 'SAS 33 Evaluating one's performance after reading the text', many students reported employing this strategy infrequently because they thought it was unnecessary to evaluate their performance after reading. Some students reported that they had no awareness to evaluate their performance. A number of students reported that they were lazy to evaluate themselves after reading. Examples are:

- *S 13: I normally have no awareness to evaluate my performance after reading unless my teacher requires me to do this.*
- *S 16: I don't evaluate my performance after reading because I am lazy to do it, as well as I think it wastes my time to do so.*
- *S 24: Normally, I don't do it. My attention has been given to remember the content and the new words, I don't have awareness to evaluate my performance, and I only care about the scores I have got instead of the performance in reading.*
- *S 26: ... I have no aware to evaluate my performance after reading, as I am busy with checking the answers, looking up the meanings of new words etc.*
- *S 32: For me, most of the time, reading English is for entertainment. I don't care about my performance in reading, so I don't think it's necessary to evaluate it.*

5.2.6 Students' Suggestions for Future Reading of English Teaching

The last interview question was designed to provide interviewees chances to express their suggestions for teaching English reading in the future. Through reading the interview data, the researcher found that the interviewees provided a wide range of suggestions. Furthermore, the researcher grouped the suggestions based on their similarities. Consequently, four suggestions emerged from the data analysis. Having a closer looking at the four suggestions, the researcher found two suggestions, i.e. 1) Helping students enlarge their vocabulary size and grammar and 2) Increasing interaction in class, were proposed under in-classroom context; while the other two suggestions, i.e. 3) Training students to use reading strategies effectively and 4) Conducting extensive reading activities, were proposed under outside-classroom context. As a result, two main categories were elicited as In-classroom Related Suggestions and Outside-classroom Related Suggestions. The two main suggestion categories are specified in the next section:

5.2.6.1 In-classroom Related Suggestions

Many students mentioned that their vocabulary size was small and their grammar was weak. Furthermore, many students reported that there was no interaction between teachers and students. Consequently, they proposed that their teacher should help them solve words and grammar problems, as well as put forward that English teachers should increase interaction with students in class. Examples are:

1) **Helping students enlarge their vocabulary size and consolidate their grammar**

- *S 3: I think vocabulary is the most important element in English reading. Skills should be taught based on enlarging students' vocabulary size. Reading ability can be improved through increasing vocabulary. I don't think reading comprehension could be possible with good reading*

skills but very small amount of vocabulary. So I think that our English teacher should help us enlarge our vocabulary size.

- *S 20: I hope that our teachers will help us consolidate the grammar. Because we learned little grammar since we entered the college, and I feel that I have little basic knowledge about grammar, which is easy to be forgotten without constant learning.*

2) Increasing interaction in class

- *S 11: I hope she [English teacher] can strengthen interaction between students and her or students and students....*
- *S 13: I hope our teacher can provide us with more chances to communicate with each other.*
- *S 40: I don't think the interaction between teachers and students is active enough in my class. I think students need more active participation in class. Maybe, teachers should arouse students' enthusiasm to interact with each other. I will be very happy if our teacher could provide us with opportunities to talk to each other.*

5.2.6.2 Outside-classroom Related Suggestions

Some students reported that training them to use reading strategies effectively should be taken into consideration in teachers' teaching plan. Furthermore, many students reported that conducting extensive reading activities was an effective way for them to improve their reading comprehension and to increase their vocabulary size. Examples are:

3) Training students to use reading strategies effectively

- *S 5: I hope she [English teacher] can spend more time to train us to comprehend texts by using reading strategies effectively..*
- *S 11: ... I hope she can teach us more useful reading skills.*
- *S 14: ...I think it's very necessary for me to receive skill training in English reading.*
- *S 28: I hope our teacher pay attention to improve our reading comprehension by teaching us some useful skills.*

- *S 38: ...Reading strategies are useful for us to reduce reading difficulties, so I would like our English teacher could teach us some practical and useful strategies.*

4) Conducting extensive reading activities

- *S 15: I hope our English teacher can recommend us some reading materials that are closely related to us after regular English classes. Setting up extensive reading program is very necessary and helpful.*
- *S 26: I hope our English teacher can recommend different types of articles to us after English classes....*
- *S 27: I think our English teacher should not limit our reading to the textbooks. She should lead us to read various kinds of English materials after English classes....*

5.3 Summary

As mentioned earlier, this chapter was to report the results of the qualitative data from 40 students' semi-structured interviews. The interviews were conducted to collect data in order to mainly elicit answers for Research Question 8, namely, 'Why do students report employing certain strategies frequently and certain strategies infrequently?' This research question aimed to elicit in-depth information and to triangulate the data in relation to provide further insights into the reading strategy employment of Chinese university students in Southwest China. Based on the data analysis, the summary is as follows:

- 1) According to students' report, English reading was important in their study. They illustrated the importance of English from four aspects, i.e.
 - 1) English reading helps them obtain information and knowledge;
 - 2) English reading plays an important role in the exams;
 - 3) English reading is important for a successful English communication;
 - 4) English reading helps to improve one's overall English proficiency level.

- 2) The students reported that they encountered 4 main problems when reading English texts. The problems included unknown new words/terms, poor grammar, insufficient background knowledge, and long reading passages.
- 3) As found from the data obtained through the semi-structured interviews, 12 reasons for why students reported employing strategies frequently emerged from the data, and 9 reasons for why students reported employing strategies infrequently emerged from the data. The reasons for using certain strategies frequently and certain strategies infrequently are summarized as follows:
- **Reasons for using certain strategies frequently**
 - 1) To remember new words;
 - 2) To get an idea and information of the text;
 - 3) To predict the text;
 - 4) To find answers easily for the questions;
 - 5) To complete the tasks after reading;
 - 6) To help them comprehend the texts easier and better;
 - 7) To achieve good reading efficiency;
 - 8) To make progress from mistakes;
 - 9) To keep good reading mood;
 - 10) To arouse attention;
 - 11) To keep perseverance; and
 - 12) To build up confidence.
 - **Reasons for using certain strategies infrequently**
 - 1) Unnecessary to employ certain strategies;
 - 2) Being unable to find related articles in school libraries;
 - 3) Having poor grammar level;
 - 4) Having no ability to summarise the texts;
 - 5) Having no English environment;
 - 6) Having no background knowledge about the reading texts;
 - 7) Having no awareness to employ certain strategies;
 - 8) Having no confidence to employ certain strategies; and
 - 9) Having no time, no interests to employ certain strategies.
- 4) The students proposed two main categories of suggestions for teaching English reading in the future, i.e. In--classroom related suggestions and

outside-classroom related suggestions. To be more specific, the in-classroom related suggestions are, 1) Helping students enlarge their vocabulary size and consolidate their grammar; and 2) Increasing interaction with students' in class; while the outside-classroom related suggestions are, 1) Conducting extensive reading activities; and 2) Training students to use reading strategies effectively.

In conclusion, the results of the semi-structured interview have provided us with a picture of eliciting in-depth and clear insight reasons for the importance of English reading in the students' study, the reasons for the students reported employing certain strategies frequently and certain strategies infrequently, as well as the problems which students encountered in English reading and suggestions provided by the students for teaching English reading in the future. The research findings for the present study have provided the researcher with useful information for another perspective of research in the area of reading strategies. In Chapter 6, which is the last chapter of the present study, the researcher will summarise the research findings in response to the research questions proposed in Chapter 3, and present the discussions of the research findings, the implications, as well as the limitations of the present study and proposals for future research.

CHAPTER 6

SUMMARY OF RESEARCH FINDINGS, DISCUSSION AND CONCLUSION

The main purpose of the last chapter is to summarize the principal findings of the present investigation in response to Research Questions 1 to 8 mentioned earlier in Chapter 3. This is followed by a discussion of the research findings and the implications arising from the research for the teaching and learning of English reading for undergraduate students in the Chinese context. Finally, the limitations of the present investigation and proposals for future research are presented.

6.1 Introduction

Based on the analysis of the reading strategy questionnaires, the researcher has systematically presented the reported frequency of use of these reading strategies by 1,368 undergraduate students in Southwest China in Chapter 4. Chapter 4 also considers the significant variations in strategy use, specifically the relationships between students' reported frequency of use of reading strategies and different independent variables, i.e. students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading. Chapter 5 mainly focuses on exploring the reasons for students reporting employing certain reading strategies frequently and certain reading strategies infrequently. In Chapter 6, the researcher will suggest reasons for the existing variations in subsequent

discussion section (Section 6.3) with the intention of helping the reader to understand certain patterns of the significant variations in strategy use, as well as other apparent significant differences in relation to each variable which were presented in Chapter 4.

6.2 Summary of the Research Findings

The present investigation reported the research findings of students' reported reading strategy use in Chapters 4 and 5. The findings also form responses to the research questions and are discussed further below.

6.2.1 Research Question 1: How frequently are the different reading strategies reported being used by Chinese university students?

In response to Research Question 1, the research findings reveal that the students' reported overall use of reading strategies based on the holistic mean score was of the moderate frequency of strategy use according to the measure given the explanation previously in Chapter 4. The mean frequency score was 2.23. The mean frequency scores of the SBS and SWS categories were 2.39 and 2.28 respectively, which fall into the moderate level. However, the frequency of use of the SAS category strategies falls into the low level, with the mean score of 1.95.

The frequency of reading strategy use level was found that only one individual reading strategy was reported the high frequency use with the mean score of 3.00. This particular strategy was 'SBS 2 Reading the title of the text before doing the actual reading'. The lowest frequency of reading strategy use was 'SAS 29 Retelling oneself or other people about what has been read after reading the text', with the mean score of 1.62. It was found that more than half of the individual strategies were reported being used at the moderate frequency. To be more specific, the students reported the moderate

frequency of use of 23 individual strategies in the SBS, SWS and SAS categories. However, 11 individual strategies from the SBS, SWS and SAS categories were reported employing at the low frequency of use. The mean frequency scores of these individual reading strategies which fall into the low level use were from 1.62 to 1.94.

6.2.2 Research Question 2: Do students' choices of reading strategies vary significantly with their gender? If they do, what are the main patterns of variation?

In response to Research Question 2, the researcher examined the variations in reading strategy use, as well as the patterns of variation in Chapter 4. As found from the data obtained through the reading questionnaires responded to by 1,368 respondents, the findings at the three levels of the data analysis to be related to the gender of the students are summarized as follows:

- **Overall Strategy Use**

In respect of students' gender, the results of the ANOVA demonstrate that there was a significant variation in students' reported frequency of overall strategy use. The significant variation reveals that the female students generally reported more frequent overall strategy use than did their male counterparts.

- **Use of Strategies in the SBS, SWS and SAS Categories**

The results of the ANOVA reveal that the significant variations in students' reported use of reading strategies in the three categories were found to be related to the gender of the students. The results show that female students reported more frequent use of strategies for comprehending reading texts than did their male counterparts. The frequency of strategy use of the SBS and SWS category fall into the moderate level, while the frequency of strategy use of the SAS category fall into the low level.

- **Use of Individual Reading Strategies**

The results of the Chi-square (χ^2) tests reveal that the use of 18 individual reading strategies (51.4%) varied significantly according to students' gender. It is obvious that a significantly greater percentage of female students reported employing more frequent use of strategies than did their male counterparts. Examples are, 'SBS 2 Reading the title of the text before doing the actual reading' (74.7 % females and 67.8% males), 'SWS 20 Highlighting important information or difficult vocabulary items by underlining while reading the text' (68.6 % females and 50.6 % males), 'SWS 15 Taking notes of the important information while reading the text' (64.7 % females and 53.1 % males), and 'SWS 16 Guessing the meaning of the text from context while reading the text ' (61.8 % females and 53.1 % males).

6.2.3 Research Question 3: Do students' choices of reading strategies vary significantly with their fields of study? If they do, what are the main patterns of variation?

In response to Research Question 3, the researcher examined the variations in reading strategy use and focused on the patterns of variation in Chapter 4. As found from the data obtained through the reading strategy questionnaires responded to by 1,368 undergraduate students studying at Chinese universities, the findings at the three different levels of the data analysis to be related to the fields of study are summarized as follows:

- **Overall Strategy Use**

Based on the results from the ANOVA, the findings demonstrate that a significant variation was found in students' reported frequency of overall strategy use in relation to this variable. The significant variation reveals that the art-oriented

students reported more frequent overall strategy use than did the science-oriented students.

- **Use of Strategies in the SBS, SWS and SAS Categories**

The results from the ANOVA reveal that the significant variation in students' reported use of reading strategies in the SWS category was found to be related to the fields of study. The results show that the art-oriented students reported more frequent use of strategies for comprehending reading texts than did the science-oriented students.

- **Use of Individual Reading Strategies**

The results of the Chi-square (χ^2) tests reveal that the use of 7 individual reading strategies varied significantly according to fields of study, with the significantly greater percentage of the art-oriented students reporting employing strategies more frequent than the science-oriented students. The examples of these individual strategies are, 'SWS 20 Highlighting important information or difficult vocabulary items by underlining while reading the text', 'SWS 18 Reading certain part(s) of the text slowly while reading the text', 'SAS 26 Searching for the meanings of new vocabulary items after reading the text', and 'SWS 12 Searching for the meanings of new vocabulary items while reading the text'.

6.2.4 Research Question 4: Do students' choices of reading strategies vary significantly with their reading proficiency levels? If they do, what are the main patterns of variation?

In response to Research Question 4, the researcher examined the different levels of students' reported frequency of reading strategy use and the patterns of variations in Chapter 4. As found from the data obtained through the reading strategy

questionnaires responded to by 1,368 undergraduate students studying at the universities in Southwest China, the findings at the three different levels of the data analysis to be related to the levels of reading proficiency are summarized as follows:

- **Overall Strategy Use**

Based on the results from the ANOVA, the findings demonstrate that the significant variation in students' reported frequency of overall strategy use was found in relation to this variable. The results from the post hoc Scheffé test indicate that the high proficiency students generally reported greater frequent overall strategy use than did the moderate- and low proficiency students.

- **Use of Strategies in the SBS, SWS and SAS Categories**

The results from the ANOVA reveal that the significant variations in students' reported use of reading strategies in the SBS and SWS categories were found to be related to the levels of students' reading proficiency. The results from the post hoc Scheffé test demonstrate that students with the high level of reading proficiency reported more frequent use of the strategies for comprehending reading texts than did those with the moderate and low levels of reading proficiency.

- **Use of Individual Reading Strategies**

The results from the Chi-square (χ^2) tests reveal that the use of 18 individual reading strategies varied significantly according to levels of reading proficiency. A significantly higher percentage of the high reading proficiency students than did both the moderate and low reading proficiency students reported greater use in 13 individual strategies. The examples of these individual strategies are, 'SBS 2 Reading the title of the text before doing the actual reading', 'SWS 20 Highlighting important information or difficult vocabulary items by underlining while reading the

text’, ‘SWS 16 Guessing the meaning of the text from context while reading the text’, and ‘SWS 17 Rereading certain part(s) of the text while reading the text’.

In addition, a significantly greater percentage of the low reading proficiency students than both the high and moderate reading proficiency students reported greater use in 5 individual strategies. Examples are, ‘SWS 12 Searching for the meanings of new vocabulary items while reading the text’, ‘SWS 13 Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text’, and ‘SAS 31 Translating the reading text into Chinese using Chinese script after reading the text’.

6.2.5 Research Question 5: Do students’ choices of reading strategies vary significantly with their teachers’ gender? If they do, what are the main patterns of variation?

In response to Research Question 5, the researcher examined the different levels of students’ reported frequency of reading strategy use and the patterns of variations in Chapter 4. As found from the data obtained through the reading questionnaires responded to by 1,368 respondents, the findings at the three levels of the data analysis to be related to the teachers’ gender are summarized as follows:

- **Overall Strategy Use**

In respect of teachers’ gender, the results from the ANOVA demonstrate that no significant variation in teachers’ reported frequency of overall strategy use. But the frequency of mean scores reveal that students studying with female teachers generally reported slightly more frequent overall strategy use than did the students studying with male teachers.

- **Use of Strategies in the SBS, SWS and SAS Categories**

The results from the ANOVA reveal that no significant variations in the students' reported use of reading strategies in the three categories were found to be related to teachers' gender. But those results of frequency of mean scores show that the students studying with the female teachers reported slightly more frequent use of strategies in the SBS and SWS categories than did the students studying with the male teachers.

- **Use of Individual Reading Strategies**

The results from the Chi-square (χ^2) tests reveal that the use of 3 individual reading strategies varied significantly according to teachers' gender, with a significantly greater percentage of the students studying with the female teachers employing three individual strategies more frequently than the students studying with male teachers. These strategies are, 'SWS 21 Highlighting important information or difficult vocabulary items by making symbol(s) while reading the text', 'SAS 26 Searching for the meanings of new vocabulary items after reading the text', and 'SWS 19 Avoiding difficult parts while reading the text'.

The results from the Chi-square (χ^2) tests also reveal that the use of 4 individual reading strategies varied significantly according to this variable, with a significantly greater percentage of the students studying with the male teachers reporting employing four individual strategies more frequently than the students studying with female teachers. These strategies are 'SBS 11 Predicting what might happen in the text before reading the text', 'SWS 13 Appealing for assistance from other people about the meaning of a new vocabulary item while reading the text', 'SBS 8 Thinking of one's background knowledge about the text before reading the text', and 'SWS 14 Analysing a sentence structure while reading the text'.

6.2.6 Research Question 6: Do students' choices of reading strategies vary significantly according to the type of universities at which they are studying? If they do, what are the main patterns of variation?

In response to Research Question 6, the researcher examined the different levels of students' reported frequency of reading strategy use and the patterns of variations in Chapter 4. As found from the data obtained through the reading questionnaires responded to by 1,368 respondents, the findings at the three levels of the data analysis to be related to the types of university are summarized as follows:

- **Overall Strategy Use**

In respect of the types of university, the results from the ANOVA demonstrate that no significant variations were found in the students' reported frequency of overall strategy use. But the results of frequency of mean scores reveal that the non-211 Project university students generally reported slightly more frequent overall strategy use than did the 211 Project university students.

- **Use of Strategies in the SBS, SWS and SAS Categories**

The results from the ANOVA reveal that the significant variations in students' reported use of reading strategies in the SBS, SWS and SAS categories were not found to be related to this variable. The frequency of strategy use of the SBS and SWS category fall into the moderate level, while the frequency of strategy use of the SAS category fall into the low level. But the results show that the non-211 Project university students reported slightly more frequent use of strategies in the SBS and SAS categories than did the 211 Project university counterparts.

- **Use of Individual Reading Strategies**

The results from the Chi-square (χ^2) tests reveal that the use of 2 individual reading strategies varied significantly according to the types of university, with a significantly greater percentage of the non-211 university students reporting more frequent use of the strategies than 211 university students. The two strategies are, 'SAS 34 Giving oneself a reward or treat when one does well in reading after reading the text', and 'SAS 30 Reviewing one's own notes after reading the text'.

6.2.7 Research Question 7: Do students' choices of reading strategies vary significantly according to the students' extensive reading? If they do, what are the main patterns of variation?

In response to Research Question 7, the researcher examined the variations in reading strategy use, as well as the patterns of variation in Chapter 4. As found from the data obtained through the reading questionnaires responded to by 1,368 respondents, the findings at the three levels of the data analysis to be related to students' extensive reading are summarized as follows:

- **Overall Strategy Use**

In respect of students' extensive reading, the results from the ANOVA demonstrate that there was a significant variation in students' reported frequency of overall strategy use in relation to this variable. The significant variation reveals that the students who read extensively generally reported more frequent overall strategy use than did the students who did not read extensively outside the classroom setting.

- **Use of Strategies in the SBS, SWS and SAS Categories**

The results from the ANOVA reveal that the significant variations in students' reported use of reading strategies in the three categories were found to be

related to students' extensive reading, with the students who read extensively generally reporting more frequent strategy use than the students who did not read extensively outside the classroom setting.

- **Use of Individual Reading Strategies**

The results from the Chi-square (χ^2) tests reveal that the use of 29 individual reading strategies varied significantly according to this variable. A significantly greater percentage of the students who read extensively generally reported employing more frequent strategy use than did the students who did not read extensively outside the classroom setting. Examples are, 'SBS 2 Reading the title of the text before reading the text', 'SWS 20 Highlighting important information or difficult vocabulary items by underlining while reading the text', 'SWS 15 Taking notes of the important information while reading the text', 'SWS 16 Guessing the meaning of the text from context while reading the text'. This pattern also evidences the ANOVA results in students' reported overall strategy use and in students' reported strategy use in the SBS, SWS and SAS categories.

6.2.8 Research Question 8: Why do students report employing certain strategies frequently and certain strategies infrequently?

In response to Research Question 8, the researcher explored the reasons for students reporting employing certain strategies frequently and certain strategies infrequently. As emerged from the data obtained through the semi-structured interviews conducted with 40 respondents, the reasons related to the research question are summarized as follows:

- **Reasons for using certain strategies frequently**
 - 1) To remember new words;
 - 2) To get an idea and information of the text;
 - 3) To find answers easily for the questions;

- 4) To complete the tasks after reading;
 - 5) To predict the text;
 - 6) To help them comprehend the texts easier and better;
 - 7) To achieve good reading efficiency;
 - 8) To make progress from mistakes;
 - 9) To keep good reading mood;
 - 10) To arouse attention;
 - 11) To keep perseverance; and
 - 12) To build up confidence.
- **Reasons for using certain strategies infrequently**
 - 1) Unnecessary to employ certain strategies;
 - 2) Being unable to find related articles in school libraries;
 - 3) Having poor grammar level;
 - 4) Having no ability to summarise the texts;
 - 5) Having no English environment;
 - 6) Having no background knowledge about the reading texts;
 - 7) Having no awareness to employ certain strategies;
 - 8) Having no confidence to employ certain strategies; and
 - 9) Having no time, no interests to employ certain strategies.

6.3 Discussion of the Research Findings

The previous section (Section 6.2) focused on the responses to the eight research questions. Based on the responses to Research Questions 1 to 7, the relationships of reading strategy use at different levels and the six independent variables have been described. Therefore, in this section, the research findings in association with the six variables investigated are discussed. The discussion presents the possible explanations for what have been discovered. The focal points for discussion concern possible reasons hypothesized by the researcher to where significant differences in certain strategy use with reference to each variable become apparent. As Intaraprasert (2000) states that it may not be easy to compare strategy use by students in the very detailed manner of the present study with previous studies. The reason is twofold: firstly, the present study has a different method of classifying reading strategies; secondly, the result has to be examined according to the strategy

classifications. What follow are further discussions of the research findings in relation to the six variables, i.e. students' gender, fields of study, levels of reading proficiency, teachers' gender, types of university, and students' extensive reading.

6.3.1 Reading Strategy Use and Students' Gender

The findings of the present investigation demonstrated that female students show significantly higher frequency of overall strategy use, use of strategies in the SBS, SWS and SAS categories and use of individual reading strategies than did their male counterparts. Whereas, no strategies were reported being used significantly more frequently by male students. The research results indicate that there is a strong relationship between students' use of reading strategy and their gender. This is consistent with the results of most previous studies (Oxford, 1993; Green and Oxford, 1995; Young and Oxford, 1997; Sheorey and Mahar, 2001; Sheorey and Mokhtari, 2001; and Saengpakdeejit, 2009), which can be concluded that females employ certain strategies significantly more frequently than their male counterparts.

To put it simply, Ellis (1994) mentions that learners' gender is one of the factors which may influence their choices of strategy use to learn a foreign or second language. Intaraprasert (2000) points out that males and females have their own ways of using strategies to learn a foreign or second language. Oxford and Nyikos (1989) who looked at the strategies used by university students, concluded that gender differences had 'a profound influence' on strategy use, and that females used strategies more frequently than males. In addition, Saengpakdeejit (2009) points out that there appears to be some gender differences in the process of comprehending English reading texts. Therefore, based on the available previous research works in relation to language learning and reading, we could find that gender has prominent impact on how students comprehend English reading texts.

Certain factors which could possibly explain the gender difference which have been found by the researcher. However, it is impossible for the researcher to discuss every factor which may impact the difference of reading strategy use by different genders. Oxford (1995) points out that both brain hemisphericity and socialization differences between male and female have attributed to the differences in strategy use. However, for the present study, the research will discuss the possible factors which may affect the choices of reading strategy use by different genders from the other perspective, i.e. innate characteristic of women and reading proficiency level.

The first possible factor which may explain higher frequency of strategy use by female is the innate characteristic of women, with females being innately more skilled language readers than males. As Oxford, Nyikos and Ehrman (1988: 321) mention that “the language learning folklore that women learn languages better than men”. Mori and Gobel (2006) also point out that female students show higher self-perception in English whereas males show higher self-perception in math and sports. That is, females have more positive attitudes toward studying a foreign language than their male counterparts. Therefore, the connection between innate characteristics of women and strategy use may explain the higher frequency of strategy use by females.

Another possible factor which may account for such a significant difference in higher frequency of strategy use by female students deals with the levels of reading proficiency. In the light of Ellis (1994) point of view, the relationship between learners’ learning strategy use and learning outcomes is bi-directional relationship. Regarding the present study, learners’ language reading strategy use is resulted from their language reading proficiency, which in turn learners’ language reading proficiency can be a result of language reading strategy use. Taking a closer look at

the data, the researcher found that the majority of the female students' levels of reading proficiency fall into the higher proficiency level.

According to Oxford (1993), females tend to be higher language achievers because of their higher level of strategy use. The results of a number of studies (Hosenfeld, 1977; Block, 1989; Barnett, 1998; Sheorey & Mokhtari, 2001) have revealed that students of a higher level of reading proficiency tended to report using a greater range of reading strategies than did those of a lower level of reading proficiency or that the low-proficiency students reported using same reading strategies, but using them inappropriately (Anderson, 1991). Therefore, the connection between high reading proficiency level and strategy use may explain the higher frequency of strategy use by females.

In sum, according to the previous studies mentioned above, we could draw a conclusion that gender is a possible factor that may affect students' reading strategy use. Based on the present study, we found that female students were naturally more skillful in using strategies to reading English texts. Therefore, the possible explanations hypothesized by the researcher for the significant differences in the strategy use by different gender of students in the present study may be accounted for the innate characteristics of women, and levels of reading proficiency. However, we cannot be definitely certain about what really caused these significant differences. Thus, research to investigate these aspects is possibly needed.

6.3.2 Reading Strategy Use and Fields of Study

The findings of the present study demonstrate that the art-oriented students show significantly higher frequency of overall strategy use than did the science-oriented students. No strategies were reported being employed significantly more

frequently by the science-oriented students. The result indicates that in the present study, fields of study has been found related to students' use of reading strategies, which is consistent with the studies by Prakongchati (2007) and Saengpakdeejit (2009).

To be more specific, Prakongchati's research work (2007) on language learning strategies in relation to the fields of study show that university majors were amongst the key factors that determined students' choices of language learning strategy use. The findings reveal that non science-oriented students reported employing certain strategies more frequently than did the science-oriented students. Similarly, Saengpakdeejit's research work (2009) on English reading strategies conducted in the Thai context also revealed that the students' fields of study was one of the factors that contributed to the significant difference of students' choices of reading strategy use, with the non-science-oriented students reporting employing significantly more frequent use of reading strategies than the science-oriented students.

However, as mentioned earlier, at present, not many previous empirical research works in the field of reading strategies have been carried out to support the findings of such a relationship between the fields of study and students' choices of reading strategy use. According to Prakongchati (2007) and Saengpakdeejit (2009), motivation to learn/read English might be a possible factor that affected students' choices of strategy use. As they state that their research findings reflected the fact that non-science-oriented students might be more motivated in English learning/reading than science-oriented students because they reported employing a wider range of strategies. This could imply that the science-oriented students might not be interested in reading and/or did not enjoy reading English texts.

As for the present study, in addition the motivation, the researcher hypothesized that students' gender might be another factor that has contributed to the significant difference in relation to the fields of study. As discussed in Section 6.3.1, students' gender was significantly related to their choices of strategy use, with the female students showing significantly higher frequency of strategy use than their male counterparts. The researcher found from the data, that most of the art-oriented students were female students. This may be a factor that can explain the findings in relation to fields of study of the present study.

This could be summarized that students' motivation and gender are likely to the factors that have contributed to the significant difference in relation to the fields of study. However, we cannot be definitely certain about what really caused these significant differences. Thus, research to investigate these aspects is possibly needed.

6.3.3 Reading Strategy Use and Levels of Reading Proficiency

Previous research works on reading strategy, such as Hosenfeld (1977), Knight, Padron and Waxman (1985), Block (1986), Mokhtari and Reichard (2004), Ahmad and Asraf (2004) and Saengpakdeejit (2009) have shown the important role played by the levels of reading proficiency in second language reading. Their research results support the hypothesis that there is a significant difference between higher- and lower-proficiency readers in their choices of reading strategy use, with the higher proficiency readers reported employing strategies significantly more frequent than did the lower proficiency readers. Based on the findings of the present study, the higher reading proficiency students reported greater strategy use than did the lower reading proficiency students, being consistent with the research works mentioned above.

A few factors which could possibly be explanations for such significant differences have been hypothesized by the researcher. These factors include: 1) the higher proficiency students are good or skillful readers; 2) the higher proficiency students have awareness to employ the reading strategies; and 3) the higher proficiency students are highly motivated to employ more reading strategies.

The researcher hypothesizes that one factor which could possibly be explanation is that the higher proficiency readers are presumably good or skillful readers. This appears consistent with previous research (Hosenfeld, 1977; Sheorey and Mokhtari, 2001; Mokhtari and Reichard, 2004), which has proved that good readers, regardless native language background, do employ effective reading strategies to solve reading comprehension difficulties. According to Ellis (1994), the relationship between students' use of strategies and their levels of language proficiency is two-directional; further, MacIntyre (1994: 188) states that "...this might be interpreted to mean that either proficiency influences the choice of strategies or that strategy choice is simply a sign of proficiency level", which indicates that students' employment of a wide range of reading strategies enables them to become high proficiency readers, or that students are high proficiency readers, so they are able to employ a wide range of reading strategies. To put it simply, students' reading strategy use is resulted from their reading proficiency, which in tern their reading proficiency can be a result of reading strategy use.

Another possible factor which may explain high use of the reading strategies of high proficiency students is the higher proficiency students have awareness to employ the reading strategies. As discussed above, the high proficiency students are possibly good or skillful readers to employ a wide range of reading

strategies. Other researchers (Lü, 1999; Liu, D. D, 2002; Ahmad and Asraf, 2004) have demonstrated that strategy use and awareness of reading strategies are different in more and less proficient readers, with poor readers are generally deficient in reading skills and using strategies, and more proficient readers generally use strategies in more efficient ways than did the less proficient readers. In addition, Pressley (2000) has suggested that awareness and use of reading strategies is a characteristic of superior reading comprehension and successful learning. Therefore, it could be concluded that the higher reading proficiency students can use reading strategies more frequently than the lower reading proficiency students because they might have more awareness to use reading strategies.

Furthermore, Intaraprasert (2000) suggests that students' motivation might be a possible factor which may explain the relationship between use of reading strategies and students' levels of reading proficiency. As Intaraprasert (2000) mentions that higher proficiency students may be highly motivated to seek opportunities to expose themselves to English outside the classroom setting. In this regard, Yule (1996: 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 means that the effort which high reading proficiency student put into their reading may enable them to employ a wider range of strategies, which in turn may help them become high reading proficiency students.

Based on the discussion about the relationship between students' choices of reading strategy use and their levels of reading proficiency, the researcher strongly suggests that instruction in improving poor readers' use of reading strategies should focus on the unique strategy of the good readers. In other words, reading teachers

should improve the average and poor readers' awareness, motivation and knowledge in comprehension strategy use as well as motivation in English learning, because logically, an increase in awareness of strategic knowledge and motivation would improve students' performances in reading comprehension tasks.

6.3.4 Reading Strategy Use and Teachers' Gender

According to Ellis (1994), teachers' gender is also a factor which has an impact on the choices of language learning strategy use. Nevertheless, through the extensive research review on reading strategy works, the researcher has not found any empirical study conducting to investigate the relationship between reading strategy use and the teachers' gender. The present study, though, has been intended to explore the actual relationship between the teachers' gender and the choices of students' reading strategy use. However, as mentioned earlier, no significant variation was found in students' reported overall strategy use and in the frequency use of strategies in the SBS, SWS, SAS categories. The result is inconsistent with Ellis's (1994) point. Teachers' gender effect is not reflected in the present investigation, perhaps because female teachers outnumbered male teachers, with 1,136 female teachers and 232 male teachers. Therefore, it may be concluded from the results of the present investigation, that teachers' gender may not be a factor which might affect students' choices of employing reading strategies.

6.3.5 Reading Strategy Use and Types of University

Through the extensive research review on reading strategy use works, no particular research work has been conducted to investigate the relationship between reading strategy use and types of university. Though the present study has been intended to explore the actual relationship between types of university and the choices

of students' reading strategy use, the findings of the present investigation reveal that there were no significant variations between them. Therefore, it may be concluded from the results of the present investigation, that types of university was not found to be strongly related to the choices of strategy use.

6.3.6 Reading Strategy Use and Extensive Reading

The findings of the present investigation demonstrate that students who read extensively show significantly higher frequency of overall strategy use, use of strategies in the SBS, SWS and SAS categories and use of individual reading strategies than did those who did not read extensively outside the classroom setting. No strategies were reported being used significantly more frequently by students who did not read extensively than did the students who read extensively outside the classroom setting. The present investigation is consistent with the results of Hayashi's study (1999), which can be concluded that there is a relationship between students' use of reading strategies and their extensive reading.

The researcher found from the data, that most of those students, who reported reading extensively, were female students and fall into higher reading proficiency level. Regarding the research results, the researcher hypothesized that students' reading proficiency level and gender may be possible explanations for the significant variation in students' reading strategy use and their extensive reading.

The first possible factor which may explain the higher frequency of strategy use by the students' who read extensively than those who did not read extensively outside the classroom setting is the students' reading proficiency levels. As proved by Hosenfeld (1977), Oxford and Nyikos (1989), Green and Oxford (1995), Intaraprasert (2000), Prakongchati (2007) and Saengpakdeejit (2009) that

the higher proficiency students generally employ a wider range of strategies than the lower proficiency students. As mentioned earlier, learners' language learning strategy use is resulted from learners' language proficiency. Therefore, the connection between strategy use and levels of reading proficiency use may explain the higher frequency of strategy use by the students who read extensively.

The second possible factor which may explain the higher frequency of strategy use by the students' who read extensively than those who did not read extensively outside the classroom setting is the students' gender. As discussed in Section 6.3.1, gender is a factor which may influence language learners' choices of strategy use to learn a foreign or second language (Oxford and Nyikos, 1989; Ellis, 1994; Saengpakdeejit, 2009). Therefore, the connection between strategy use and levels of reading proficiency use may explain the higher frequency of strategy use by the students who read extensively.

In sum, according to the previous study (Hayashi, 1999) and the present investigation, we could draw a conclusion that the students' extensive reading is a possible factor that may affect students' reading strategy use. Based on the present study, we found that the students who read extensively were more skillful in employing strategies to read English texts for comprehension. Therefore, the possible explanations hypothesized by the researcher for the significant differences in the strategy use by the students who read extensively and who did not read extensively in the present study may be accounted for the students' levels of reading proficiency and gender. However, we cannot be definitely certain about what really caused these significant differences. Thus, research to investigate these aspects should be subjected to systematic research.

In conclusion, the findings of the present investigation are generally consistent with the previous studies as shown in Chapter 2 in relation to certain variables, i.e. students' gender, fields of study and levels of reading proficiency. To be more specific, the female students reported employing strategies more frequently than did their counterparts; the art-oriented students reported employing strategies more frequently than did the science-oriented students; and the higher-proficiency level students reported employing strategies more frequently than the lower-proficiency level students. Regarding the relationship between students' choices of reading strategy use and teachers' gender, as well as types of university, no significant differences were found in the present study in relation to the two variables.

With regard to students' extensive reading, to date, very few research has been conducted to investigate the relationship between students' choices of reading strategy use and this particular variable, whereas, the research finding of the present study reveal that there is strong relationship between students' choices of reading strategy use and their extensive reading, with the students who read extensively outside the classroom setting reporting employing reading strategies more frequently than the students who did not read extensively. On the whole, the relationships between students' choices of reading strategy use and the variables seem to be complex which need to be examined in further research in terms of prove the reliability of the results.

6.4 Implications of the Research Findings for Learning and Teaching the Reading of English in Chinese Universities

From the research findings summarized in Section 6.2 in response to the research questions, we found that: 1) In general, Chinese university students employed strategies only at the moderate level when comprehending English reading texts, which indicated that Chinese university students were less skillful readers; and 2) There is a relationship between students' use of strategies and students' gender, fields of study, levels of reading proficiency, as well as students' extensive reading. Consequently, certain implications for the teaching and learning of English reading for undergraduate students studying at universities in Southwest China may be drawn as follows:

1) A mini-conference among the members of English teaching should be held. These staff should be encouraged to introduce reading strategies as part of regular classroom lessons to their students, in order to enable the students can make use of their learning power.

2) Teachers of English should cultivate students' awareness to employ reading strategies. In this regard, a semi-seminar about reading strategies could also 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 the importance of reading strategies.

3) Arising from the research findings, the female undergraduate students reported employing strategies more frequently than did their counterparts. This implies that male students need more help in developing strategies. In this regard, teachers of English should encourage male students to employ a wide range of

reading strategies, in order to enable the male students to make use of their learning power to enhance reading comprehension.

4) In general, the students with the higher level of reading proficiency reported employing a wider range of strategies than the lower level of reading proficiency. It is recommended that teachers of English should train their students, who are with lower reading proficiency, to employ as many reading strategies as possible and encourage them to make maximum use of the strategies, meanwhile, to train them to apply strategies effectively. As Carrell et al. (1989: 648) puts forward, “strategy research suggests that less competent learners are able to improve their reading skills through training in strategies”. Besides, effective reading strategies may help learners a great deal in improving their reading proficiency so that, as Grabe (1991: 27) suggests, they can read more effectively for their studies regardless of the type of text they encounter.

5) One of the significant findings of the present study is that, as a whole, the students who read extensively outside classroom setting reported employing more strategies than did the students who did not read extensively. In addition, the results from the qualitative data indicate that students would like their teacher to conduct extensive reading activities since extensive reading principally enables them to accumulate background knowledge. Based on the research results, teachers of English in Chinese universities are encouraged and supposed to set up extensive reading in L2 language reading programs, and it is strongly recommended that language teachers should encourage their students to read English texts extensively as many as possible so as to accumulate students’ background knowledge, as well as to create an English reading environment.

As Grabe (1995) states that developing extensive reading in L2/EF language programs have many advantages, i.e. Extensive reading may be the best way to develop a large recognition vocabulary; It is a key resource for building student motivation once students are 'hooked'; It has demonstrated positive influence on students' general background knowledge; It has demonstrated positive influence on reading comprehension proficiency, as well as on other language skills; It may be the only genuine way for students to develop and maintain reading strategies, and become more strategic readers; In addition, Macceca (2007: 7) points out that, "One of the easiest and most effective ways to improve comprehension in social studies is to promoting extensive reading outside of class."

6) Based on the results from the interview data, the students expected to have more opportunities to communicate with their teachers and classmates. For a long time being, in China, English classes were teacher-centered instead of student-centered, in which students have few opportunities to involve in the classroom interaction and talk to teacher or discuss with their peers. In this regard, it is recommended that teachers of English should increase communication opportunities with or among students in class. More importantly, the students' confidence could be built up in the communication process, in the mean time, a good and comfortable English learning environment is able to be created in class.

6.5 Limitations of the Present Investigation and Proposals for Future Research

The present study was valid and valuable in addressing the research questions, which were to describe the frequency of strategy use reported by

undergraduate students in Southwest China; to examine the variation patterns and to explore relationships between frequency of students' reported use of strategies at different levels with reference to each investigated variable; as well as to explore reasons for why students report employing certain strategies frequently and certain strategies infrequently. However, as Intaraprasert (2000) states that all studies have limitations when conducting research. The present study is not perfect in terms of considering about the limitations. In conducting this study, certain limitations have been apparent, and the areas for possible future research works should take these limitations into consideration:

- 1) The research population should have been more well-balanced in terms of certain invested variables, i.e. students' gender, fields of study, teachers' gender, types of university, and students' extensive reading.

- 2) The reasons for why students reported employing certain strategies frequently and certain strategies infrequently having been explored in general through qualitative method in the present study, instead of being explored in relation to the six variables.

- 3) The study aimed to examine reading strategies employed by university students in Southwest China. Therefore, all participants were students from limited regions in China.

In spite of the limitations, the researcher acknowledges that some areas might justify further research works. These areas could include the following:

- 1) As mentioned earlier, the research population should have been more well-balanced in terms of each invested variable. In other words, the number of students from students' gender, fields of study, levels of reading proficiency, teachers'

gender, types of university and students' extensive reading should have been approximately the same. Consequently, there is a need for future research works to investigate whether or not this aspect associates with students' reported choices of reading strategy use.

2) The present study aimed to examine reading strategies employed by university students in Southwest China, as a result the research population for the present study only consists of undergraduate students studying at universities in Southwest China. The findings would be more comprehensive and interesting if students from other regional universities have been involved in the present study. Therefore, a further study should be conducted in the areas other than Southwest China in terms of examining and comparing the results.

3) Based on the related literature review, little research in the field of reading strategies has taken students' extensive reading, teachers' gender and types of university into consideration as the factors related to students' choices of reading strategy use. Therefore, it is necessary to conduct further research in relation to these variables.

4) The research population for the present study consists of students studying in different years of study (i.e. 1st and 2nd), the researcher has recognized that the heterogeneity of students in terms of the numbers of years of study at each university may have affected students' choices of reading strategy use. Consequently, there is a need for future research works to investigate whether or not this aspect associates with students' reported choices of reading strategy use.

6.6 Conclusion

The present study will contribute to the field of reading strategy in terms of the variables investigated, students' reading proficiency measurement and exploring the in-depth information for the reasons why students reported using certain frequently and certain strategies infrequently. One of the major contributions of the present investigation has proved that students' extensive reading significantly affected students' choices of reading strategy use. Of the variables investigated, three variables, i.e. teachers' gender, types of the university and students' extensive reading have rarely been taken into consideration by any further researchers in this area.

Lastly, the researcher for the present study has presented implications arising from the research findings for the teaching and learning of English to undergraduate students. Additionally, limitations of the present study and some proposals for future research have also been put forward. However, disregarding the limitations of the present investigation, the researcher believes that the findings of the present study could provide any other researcher with useful insights into how Chinese university students cope with their English reading, and how reading strategies are employed by different students in different learning contexts.

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