

การใช้กลวิธีการเรียนภาษาอังกฤษโดยนักศึกษาจีนที่เรียน
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LANGUAGE LEARNING STRATEGIES EMPLOYED
BY CHINESE ENGLISH-MAJOR
PRE-SERVICE TEACHERS



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the Degree of Doctor of Philosophy in English Language Studies

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**LANGUAGE LEARNING STRATEGIES EMPLOYED BY
CHINESE ENGLISH-MAJOR PRE-SERVICE TEACHERS**

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เซาเหยิง โจว : การใช้กลวิธีการเรียนภาษาอังกฤษโดยนักศึกษาจีนที่เรียนวิชาเอก
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กลวิธีการเรียนภาษานับว่าเป็นตัวแปรสำคัญในการเรียนรู้ภาษาความพยายามอย่างมี
นัยสำคัญในการศึกษาความสำคัญของกลวิธีการเรียนภาษาและปัจจัยที่มีผลต่อการเรียนรู้ภาษา
เนื่องจากยังไม่มีการศึกษาเกี่ยวกับการใช้กลวิธีการเรียนภาษาในภาคตะวันตกของประเทศ
สาธารณรัฐประชาชนจีนการศึกษาวิจัยนี้ จึงได้ดำเนินการศึกษากลวิธีการเรียนภาษาของนักศึกษา
ในแง่ของเพศความเพิลิตเพลินในการเรียนภาษาอังกฤษความสามารถทางภาษาการตระหนัก
เกี่ยวกับกลวิธีการเรียนภาษา ซึ่งวัตถุประสงค์ของการศึกษาคือ 1) เพื่อศึกษาความถี่ของการใช้
กลวิธีการเรียนรู้ภาษาของนักศึกษาสาขาวิชาครูฝึกสอนภาษาอังกฤษในภาคตะวันตกของประเทศ
สาธารณรัฐประชาชนจีน 2) เพื่อศึกษาความสัมพันธ์ระหว่างกลวิธีการเรียนภาษากับเพศเพศความ
เพิลิตเพลินในการเรียนภาษาอังกฤษความสามารถทางภาษาการรับรู้เกี่ยวกับกลวิธีการเรียนภาษาว่า
มีความแตกต่างหรือสัมพันธ์กันหรือไม่ 3) เพื่อศึกษาปัจจัยพื้นฐานของการใช้กลวิธีการเรียนภาษา
ของนักศึกษาสาขาวิชาครูฝึกสอนภาษาอังกฤษ; และ4) เพื่อวิเคราะห์ว่าเหตุผลว่าทำไมนักศึกษาครู
ฝึกสอนภาษาอังกฤษใช้กลวิธีการเรียนภาษาบ่อยครั้งและไม่บ่อย

กลุ่มตัวอย่างในการวิจัยครั้งนี้ ประกอบด้วยนักศึกษาสาขาวิชาครูฝึกสอนภาษาอังกฤษ
จำนวน 836 คนจากมหาวิทยาลัยจำนวน 6 แห่งจาก 3 จังหวัดในภาคตะวันตกของประเทศ
สาธารณรัฐประชาชนจีน เครื่องมือที่ใช้ในการวิจัยครั้งนี้ ได้แก่แบบสอบถามความคิดเห็นที่มีการ
พัฒนามาจากแบบสอบถามการเรียนภาษา SILL แบบสอบถามเกี่ยวกับการรับรู้กลวิธีการเรียนภาษา
แบบสอบถามเกี่ยวกับบุคลิกภาพและการสัมภาษณ์กึ่ง โครงสร้างซึ่งการศึกษาวิจัยครั้งนี้ มีนักศึกษา
เข้ารับการสัมภาษณ์จำนวน 36 คนสำหรับการวิเคราะห์ข้อมูลทางสถิติได้นำสถิติเชิงพรรณนาการ
วิเคราะห์ความแปรปรวนและการทดสอบไค-สแคว์ใช้ในการวิเคราะห์ข้อมูลเชิงปริมาณและการ
วิเคราะห์เนื้อหาใช้ในการวิเคราะห์ข้อมูลเชิงคุณภาพ

ผลการวิจัยพบว่า โดยภาพรวมและรายด้านนักศึกษาคูฝึกสอนภาษาอังกฤษใช้กลวิธีการ
เรียนภาษาอยู่ในระดับปานกลาง นอกจากนี้นักศึกษามีการใช้กลวิธีการเรียนในรายด้านพบว่า
นักศึกษานักศึกษาใช้ 5 กลวิธีการเรียนภาษาอยู่ในระดับมาก และ 5 กลวิธี อยู่ในระดับน้อย โดยมีการใช้กลวิธี
การเรียนภาษาอยู่ในระดับปานกลางจำนวน 38 จาก 48 กลวิธีการเรียนภาษา ผลการวิจัยยังพบอีกว่ามี
ความแตกต่างอย่างมีนัยสำคัญของตัวแปร ได้แก่ความเพิลิตเพลินในการเรียนภาษาอังกฤษ

การรับรู้เกี่ยวกับกลวิธีการเรียนภาษาและประเภทของบุคลิกภาพที่เปิดเผยและไม่เปิดเผยกับกลวิธีการเรียนภาษาทั้ง 4 ด้าน (MET, COG, AFF และ SCI) ในขณะที่พบแตกต่างอย่างมีนัยสำคัญในตัวแปรความสามารถทางภาษากับบุคลิกภาพ การตัดสินใจและเข้าใจใน 3 ด้าน ได้แก่ MET, COG และ SCI สำหรับตัวแปรเพศของนักศึกษาพบเพียง 2 ด้านคือ COG และ AFF ในรายชื่อพบว่า นักศึกษามีการใช้กลวิธีการเรียนภาษาแตกต่างอย่างมีนัยสำคัญกับ 5 ตัวแปร นอกจากนี้ผลจากการวิเคราะห์ความแปรปรวนพบว่า มีปัจจัยที่สำคัญที่มีความสัมพันธ์กับการใช้กลวิธีการเรียนภาษาของ นักศึกษาคูฝึกสอนจำนวน 6 ปัจจัยซึ่งแต่ละปัจจัยมีความสัมพันธ์กับตัวแปรที่แตกต่างกันจากการวิเคราะห์เนื้อหาที่ได้จากการสัมภาษณ์พบว่า นักศึกษาให้เหตุผลที่ใช้กลวิธีการเรียนภาษาบ่อย จำนวน 5 เหตุผล และมีเหตุผลจำนวน 5 เหตุผลที่นักศึกษาใช้กลวิธีการเรียนภาษาไม่บ่อยซึ่งนำ ผลการวิจัยดังกล่าวได้ถูกนำเสนอไปประยุกต์ใช้ในการจัดการเรียนการสอนสำหรับนักศึกษาคู ฝึกสอนภาษาอังกฤษเกี่ยวกับกลวิธีการเรียนภาษาต่อไป



CHAOYING ZHOU : LANGUAGE LEARNING STRATEGIES
EMPLOYED BY CHINESE ENGLISH-MAJOR PRE-SERVICE
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LANGUAGE LEARNING STRATEGIES/ENGLISH-MAJOR PRE-SERVICE
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Language learning strategies (LLSs) are considered to be a key variable in language learning. Significant efforts have been made to explore the importance of LLSs and the factors affecting learners' strategy choice. The present study filled in some research gaps in this field in China, since no previous studies investigated strategy use employed by English-major pre-service teachers in Midwest China in terms of gender, enjoyment of learning English, language proficiency, strategy awareness, and personality types. The purposes of the present study were: 1) to investigate the frequency of LLS use employed by English-major pre-service teachers in Midwest China; 2) to examine whether the choices of LLSs vary significantly by their gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types, and the patterns of significant variations, if they exist at all; 3) to explore the underlying factors of strategies reported employed by the pre-service teachers; and 4) to explore why they reported employing certain strategies frequently and certain strategies infrequently.

The participants were 836 junior English-major pre-service teachers from 6 Normal Universities in 3 provinces in Midwest China. The background information questionnaire, modified LLS questionnaire, strategy awareness questionnaire,

personality type inventory, and semi-structured interview were used to collect the data. 36 participants took part in the semi-structured interview. Descriptive Statistics, ANOVA, Chi-square test, and factor analysis were performed for the quantitative data analysis. Content analysis and thematic analysis were used to analyze the qualitative data.

The quantitative results showed that the pre-service teachers reported moderate frequency of use at the overall and category levels. At the individual level, 5 strategies were reported high frequency of use, 38 moderate frequency of use, and 5 low frequency of use. The frequency of overall strategy use varied significantly by the 5 variables. Significant variations were found in all the 4 MET, COG, AFF and SCI categories in terms of enjoyment of English learning, strategy awareness, and extroversion-introversion scale of personality types; in the MET, COG and SCI categories by language proficiency and judging-perceiving scale of personality types; and in the COG and AFF categories by gender. Significant variations were also found in the use of different individual strategies by the 5 variables with different variation patterns. The results of factor analysis indicated that 6 underlying factors were extracted in their LLS use. Different factors were found strongly related to different investigated variables. The qualitative results revealed that 5 reasons emerged for certain strategies frequently used and 5 reasons for certain strategies infrequently used. Finally, pedagogical implications of LLSs for English-major pre-service teachers have been put forward.

School of Foreign Languages

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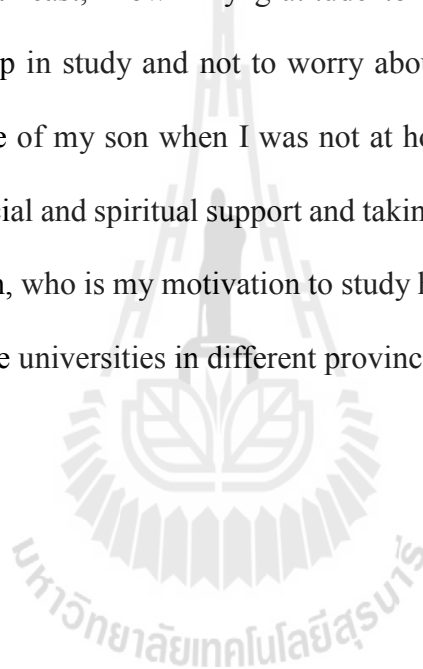


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CHAPTER 1

BACKGROUND TO THE STUDY

1.1 Introduction

This chapter provides the background to the study, which has been designed to investigate language learning strategies (LLSs) employed by English-major pre-service teachers in the Midwest of China. As an introductory part, this chapter aims to provide an overall picture of the present investigation. It starts off with the introduction of the study. This is followed by English teaching and learning in China, significance of the study, research objectives, and some operational definitions of key terms in the study. Finally, the outline of the thesis and a summary are presented.

Since the 1960s the focus of research in second language acquisition has shifted from teaching to learning, and language learners have become the center of language teaching and learning (Feng, 2010). More and more researchers have initiated studies on the learners, paying more attention to individual differences in second language acquisition (Rao, 2008). In the field of L2 acquisition, LLSs have been considered the key variable in the study of individual differences (Skehan, 1989; Oxford, 1990; Dörnyei, 2005). Ellis (1994) outlines a theoretical framework for investigating individual learner differences in L2 acquisition. This framework casts light on how individual learner differences, LLSs and language learning outcomes interact with each other and also highlights the role of LLSs in L2 acquisition as one of the individual learner variables.

Oxford (1990, p. 1) states that strategies are “especially important for language learning because they are tools for active, self-directed involvement, which is essential for developing communicative competence. Appropriate strategies result in improved proficiency and greater self-confidence”. He also claimed that learning strategies are one of the main factors determining how and how well learners learn an L2 (Oxford, 2001). According to Chang, Liu and Lee (2007), researchers believe that language learning strategies play significant roles in L2/FL learning, due to the fact that LLSs can help learners to facilitate the acquisition, storage, retrieval or use of information and increase self-confidence.

Initiated in the middle of the 1970s, the research on LLSs opened up a research agenda which has led the researchers and teachers to explore the complexity of students’ interaction with their language study, and an agenda which has made the researchers and teachers appreciate the individuality of each learner, and of their interaction with language study (Tudor, 2001). According to Chamot (2005), language learning strategy research has enriched the L2 acquisition literature by providing insights into the metacognitive, cognitive, social and affective processes involved in L2 learning. As Ellis (2008) states, the study of LLSs have been motivated by both the wish to contribute to L2 acquisition theory by specifying the contribution that learners can make to L2 learning and by the applied purpose of providing a research-informed basis for helping learners to learn more efficiently through identifying learning strategies that ‘work’ and training them to make use of these.

Language learning strategy research began in China in the mid 1980s. Chinese researchers have done some studies on LLSs and have made some achievements (e.g. Wen, 1995; Yang, 1999; Zhang, 2004; Chang, Liu & Lee, 2007;

Yang, 2007; Wu, 2008; Yu & Wang, 2009; Zhou, 2010). However, according to Ni (2008), there are still some problems on language learning strategy research in China nowadays. By reviewing the previous literature, the researcher of the present study has found some typical problems on language learning strategy research in China, which mainly exist in the participants, research variables, and research instruments of the investigations. Therefore, the researcher conducted the present study in order to fill in some research gaps to shed some light on the research of LLSs in China.

1.2 English Teaching and Learning in China

With the rapid development of the global economy and Chinese society, language educators have realized that English is no longer a course of liberal arts, but an important tool for cultural exchange and international communication (Liu, 2008). English has been a priority and compulsory course in Chinese schools for the last few decades. Since 2001, a new 'English Curriculum and Pedagogy Standards (Ministry of Education, 2001)' has been developed in order to develop learners' ability to use English in their daily lives, cultivate learners' autonomy, encourage interactive classroom participation, and develop communicative competence. In the standards, LLSs have been treated as one of the crucial factors that affect the EFL learning process and its speed because they are actions and measures that learners take in order to learn a language effectively (Yu & Wang, 2009).

According to Nunan (2001), the teacher's role is to stimulate students' interest in learning, help them build up confidence to overcome learning obstacles, and cultivate their learning autonomy. However, most English teachers in Chinese universities fail to act such roles in English teaching in the teacher-centered classes, as

Paine (1992) puts forward that Chinese lessons are dominated by teacher-talk in an expository and explanatory format whilst students are audience. According to Rao (2008), the reasons may be that on one hand, teachers in China are not free to teach whatever they want in the classroom, since all the textbooks and teaching materials are nationally uniform, and teachers are expected to cover the curriculum developed by the government; on the other, most teachers in Chinese universities feel it difficult and awkward to teach English in the communicative way and still adhere to the traditional methods and technologies, as these teachers are indigenous Chinese and are trained basically in home institutions where there are only a few native speakers of English, and only a minority of teachers have an opportunity to study in English-speaking countries. In such a condition, there may exist great difficulty for teachers to help students have appropriate LLSs learning English in or outside of class.

Hu (2002) describes Chinese learners' learning strategies in relation to reception, repetition, review and reproduction. According to Jiang and Smith (2009), Chinese learners are viewed as passive receivers of knowledge that they expect to be passed on by teachers; they hold repetition to be the necessary means to acquire knowledge and understanding, consider review as a key step for consolidating old knowledge, and reproduce textual knowledge as required by teachers or tests. Besides the English class time, most of the Chinese university students spend a lot of time studying English outside the classroom in order to pass all the curriculum English exams and the national English proficiency tests. However, the passing rate of each national proficiency test is not high when the results are announced each time. Most of the students cannot get good marks in the tests. This indicates that their English

proficiency is still not high to reach the goal set by the new ‘English Curriculum and Pedagogy Standards’ (Ministry of Education, 2001).

The tertiary-level English learners in China are usually divided into English majors and non-English majors. English majors are highly expected to learn English well to reach the goal set by National Teaching Syllabus for English Majors in Higher Education in China (English Team, Steering Committee for Foreign Language Teaching in Higher Education, 2000): the students with high language proficiency should possess basic knowledge, broad knowledge, and major knowledge of English language, with competence to learn English well.

Among the English majors, there are pre-service teachers and non-pre-service teachers. English-major pre-service teachers study in Normal Universities. They are trained to be English teachers after graduation. There are also non-pre-service teachers majoring in English in Normal Universities and the other universities. Their fields can be English translation, English literature, business English, and so on. For English-major pre-service teachers, they are students now and will become English teachers in the future. Therefore, it is important to have high English language proficiency and good English teaching methods for their future career, and also it is important for them to improve their English by employing LLSs, since strategies play major roles in their English learning.

1.3 Significance of the Study

The present study is of great importance and will contribute to the research in the field of language learning strategies in China theoretically and pedagogically.

Theoretically, the present study could fill in some research gaps in the field of language learning strategy use in China, since there are no previous studies on language learning strategy use employed by English-major pre-service teachers in Midwest China in terms of gender, enjoyment of learning English, language proficiency, strategy awareness, and personality types: extroversion–introversion scale and judging–perceiving scale, which contributes to research on LLSs in China and similar educational settings worldwide, and thus contributes to SLA theory, which is specified as follows:

First, to date, few English-majors pre-service teachers have been investigated in language learning strategy studies, except that Tercanlioglu (2004) carries out research on 184 third-year English-major pre-service teachers in School of Education of Atatürk University in Turkey, and Gu (2008) investigates strategy use by 139 freshman English-major pre-service teachers in Zhoukou Normal University in China. Among the empirical studies, no research has been conducted to explore language learning strategy employment among a large group of English-major pre-service teachers in Midwest China. Consequently, the present study will fill in the gap in research works on LLSs in China.

Second, some variables are still seldom investigated. There are only a few studies on the effects of enjoyment of English learning on learners' language learning strategy use (e.g. Mochizuki, 1999; Wong & Nunan, 2011). Very few studies investigate the effects of strategy awareness on strategy use (e.g. Lee & Oxford, 2008).

Although a few studies have examined the effects of personality types on learners' strategy choice (e.g. Ehrman & Oxford, 1989; Li & Qin, 2006), no previous research has just focused on extroversion-introversion scale and judging-perceiving scale.

Third, with regard to the research instruments, most researchers just adopt Oxford's (1990) SILL (Version 7.0). According to Bremner (1999), although the SILL (Oxford, 1990) is considered to be the most widely used and influential tool for the assessment of language learning strategy use, it is imperative to be adapted to suit the target group of learners in the Chinese context, as is because different cultural and educational contexts will affect the use of LLSs (Rao, 2008), and the SILL by Oxford (1990) is not updated, without such new items as strategies use concerned with internet. In addition, when categorizing LLSs, most researchers just follow the existing six categories: memory, cognitive, metacognitive, compensation, social, and affective strategies, although Oxford (1990, p. 16) herself admitted that "a large overlap naturally exists among the strategy groups in the system presented", and few of them follow Oxford's (2011) four categories: metastrategies, cognitive strategies, affective strategies, and sociocultural-interactive strategies in the Strategic Self-Regulation (S²R) Model of L2 learning, which is 'a unified, logically coherent system' (Oxford, 2011, p. 42).

Pedagogically, the present study attempts to offer insights to help English teachers have more knowledge of students' language learning strategy use, to improve learners' efficiency of English learning, and help them become autonomous learners. Students, teachers and researchers in China should be sensitized to the importance of strategy awareness, even strategy training in the classroom through the findings of the study. It is hoped that the results of this study will help foreign language teachers in

China better understand the effects on their students' choice of learning strategies by these variables, and thereby incorporate strategy training into their programs so as to help their students develop a positive attitude towards English language learning and facilitate language learning and instruction.

1.4 Research Objectives

The main purpose of the present research is to investigate language learning strategies employed by English-major pre-service teachers in Midwest China. It aims at examining the effects on learners' language learning strategy use in relation to pre-service teachers' 1) gender; 2) language proficiency; 3) enjoyment of English learning; 4) strategy awareness; and 5) personality types: extroversion-introversion scale and judging-perceiving scale. To be more specific, the purposes of the present investigation are:

(1) To investigate the frequency of language learning strategy use employed by English-major pre-service teachers in Midwest China;

(2) To examine whether the choices of language learning strategies vary significantly by the pre-service teachers' gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion–introversion scale and judging–perceiving scale, and the patterns of significant variation, if they exist at all;

(3) To explore the underlying factors of language learning strategies reported employed by the pre-service teachers; and

(4) To explore why the pre-service teachers reported employing certain language learning strategies frequently and certain strategies infrequently.

1.5 Operational Definitions of Key Terms in the Study

The following terms have been used in the present investigation. Their operational definitions are as follows:

- **Language Learning Strategies**

In the present study, language learning strategies are defined as “some general approaches or specific actions/techniques, whether observable or unobservable, which Chinese English-major pre-service teachers make use of to enhance their English language learning directly or indirectly”.

- **English-major Pre-service Teachers**

In the present study, English-major pre-service teachers refer to students majoring in English in Normal Universities in Midwest China. Their career orientation is primary or middle school English teachers after graduation. Students are provided a four-year teacher-training program in these Normal Universities. In the present study, junior English-major pre-service teachers have been selected as the participants, since they have already got the results of the national English proficiency test.

- **Language Proficiency Levels**

Different researchers may use different ways to determine language proficiency. In this study, learners' proficiency level has been determined based on the results of Test for English Majors – Grade Four (TEM-4), which is a national proficiency test which targets English majors in China. Three different levels of students' language proficiency for the study has been defined as high, moderate, and low according to the following criteria: if students get marks under 60, and then they have been classified as low language proficiency; from 60 to 69, moderate proficiency;

and 70 and above, they has been classified as high language proficiency, which is the national standard.

- **Test for English Majors – Grade Four (TEM-4)**

The Test for English Majors – Grade Four (TEM-4) began in 1991 and now it is a nationwide proficiency test taken by Chinese English majors. It is a compulsory examination for English majors on their completion of the foundation stage, aiming to examine students' ability to use English language and their knowledge of the language, to provide positive backwash effects on classroom teaching and to help evaluate the implementation of the national teaching syllabus (Zhu, 2005). It tests English-majors' English proficiency level in listening, close test, grammar and vocabulary, reading comprehension and writing. The total score in the test is 100. In the present study, the scores of the subjects have obtained from the results of their TEM-4.

- **Enjoyment of English Learning**

Enjoyment of English Learning in this study refers to whether English-major pre-service teachers in Midwest China enjoy learning English or not, which have been graded into different levels: not at all, not very much, somewhat, a lot, and extremely.

- **Strategy Awareness**

Strategy awareness in this study means that English-major pre-service teachers in Midwest China have known the language learning strategies they choose before they make choices of the strategy items in the questionnaire, that is to say, they have been aware of the strategies in their English learning.

● Personality Types

Personality types refer to the psychological classification of different types of individuals. According to Myers and Myers (1980), personality types include 2 kinds of mental processes: Sensing–intuition scale, meaning how people take in information, and Thinking–feeling scale, referring to how people make decisions; and 2 kinds of mental orientations: Extraversion–introversion and judging–perceiving scales, which are the two investigated scales in the present study.

Extraversion–introversion scale refers to where individuals tend to focus their intention and interests either by the outer or inner world of people and things (Bachand, 1998). Judging–perceiving scale refers to whether individuals prefer structured or flexible learning environments (Brownfield, 1993). Extroverts devote themselves to interacting with people, events and rules, and value meeting the expectations of others and society, while introverts are more interested in their inner beliefs, expectations, desires, values and logic, slow at adapting to a new environment (Champagne & Hogan, 2002). Judgers favor a planned and orderly way, seeking closure and finality, whereas perceivers like flexibility and spontaneity and therefore like to keep their options open (Ehrman, 1996).

1.6 Outline of the Thesis

The thesis is organized into six chapters.

Chapter 1 provides the background of the present investigation. It briefly gives an introduction to language learning strategy study, English teaching and learning in China, significance of the study, research objectives, gives explanations to some operational definitions of key terms in the study, and presents the outline of the thesis.

Chapter 2 presents the related literature review on language learning strategies. It first presents theories related to language learning strategies, then introduces definitions and classification system of language learning strategies, and at last summarizes research on language learning strategies in China and in other countries.

Chapter 3 explains the research methodology. It starts off with methods in language learning strategy research, puts forward the theoretical framework for the present study and specifies rationale for selecting variables for the present investigation, entails the research questions, and specifies the choice of participants, data collection instruments, data collection procedure and data analysis.

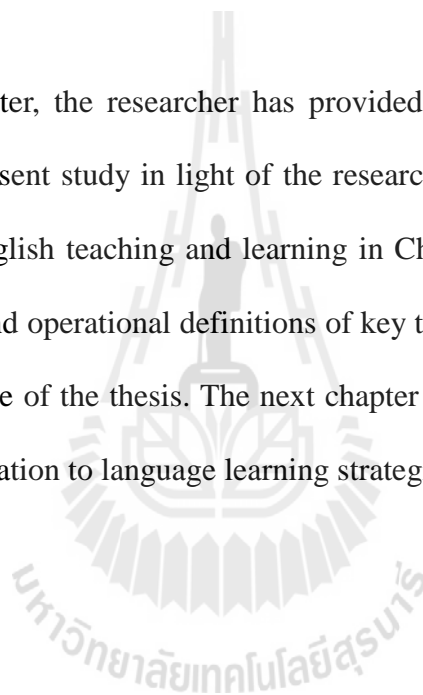
Chapter 4 describes the results of the quantitative data analysis. It contains three main parts. Firstly, the frequency of language learning strategy use at three different levels reported by 836 English-major pre-service teachers in Midwest China is presented. Secondly, the variations in pre-service teachers' reported LLS use at three different levels related to the five investigated variables: gender, enjoyment of English learning, language proficiency, strategy awareness and personality types have been systematically examined through an analysis of variance (ANOVA), post hoc Fisher's LSD test and Chi-square tests. Finally, the results of factor analysis are presented to show the underlying factors in LLSs reported employed by these pre-service teachers.

Chapter 5 reports the findings from the qualitative analysis of the obtained data through the use of semi-structured interviews. This chapter gives an explanation on why the interviewees reported using certain strategies frequently and certain strategies infrequently.

Chapter 6 summarizes the main findings of the present investigation in respond to Research Questions 1 to 4 presented earlier in Section 3.4. This is followed by discussions of the research findings, and then implications for language learning strategies in English teaching and learning. The limitations of the present study and recommendations 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 the research context. This is followed by an introduction of English teaching and learning in China, significance of the study, research objectives, and operational definitions of key terms used in the present study. It ends with the outline of the thesis. The next chapter is to present the review of the related literature in relation to language learning strategies.



CHAPTER 2

RELATED LITERATURE REVIEW

ON LANGUAGE LEARNING STRATEGIES

2.1 Introduction

This chapter aims to review related literature with regard to language learning strategies (LLSs). It starts off with theories related to LLSs. Then the definitions, characteristics, and classification system of LLSs are reviewed respectively on the basis of providing detailed and clear clues for the present study. Finally, research on LLSs is illustrated.

LLSs have been one of the most researched topics in the field of second and foreign language education for about four decades. Since the very first research into LLSs by Rubin (1975), numerous studies have contributed to the understanding of the important roles that LLSs play in the process of learning and acquisition of a second/foreign language (Bialystok, 1979; Ellis, 1985; Oxford, 1990; O'Malley and Chamot, 1990; Nunan, 1991; Cohen, 2000). Bialystok (1979) states that LLSs are believed to play a vital role in learning a second/foreign language, as they may assist learners in mastering the forms and functions required for reception and production in the second/foreign language and thus affect achievement.

2.2 Theories Related to Language Learning Strategies

According to O'Malley and Chamot (1990), at the onset of the research on LLSs in 1981, there was no theory to guide the studies and few empirical investigations into LLSs and their influence on SLA, and most second language acquisition theories fail to give a precise description of the role of LLSs in second language learning. Fortunately, some studies have emerged in which LLSs are integrated within cognitive theory (O'Malley & Chamot, 1990; Ellis, 1994), and social psychological theories (Ellis, 2008).

2.2.1 Cognitive Learning Theory

According to O'Malley & Chamot (1990, p. 1), "in cognitive theory, individuals are said to 'process' information, and the thoughts involved in this cognitive activity are referred to as 'mental process'. Learning strategies are special ways of processing information that enhance comprehension, learning, or retention of the information." In their view, "language is a complex cognitive skill that can be described within the context of cognitive theory." According to O'Malley & Chamot (1990, p. 42), "the strategies can be described within the framework of Anderson's cognitive theory (especially Anderson 1983)."

Anderson's (1983) adaptive control of thought (ACT) model was originally designed to describe how information is stored and retrieved, and some studies have integrated this model into the investigation of LLS (e.g. O'Malley, Chamot & Walker, 1987; O'Malley & Chamot, 1990). Theoretically, the model is based on a cognitive information processing view of human thought and action (Rao, 2008). By treating language learning as a cognitive skill and incorporating strategic processing as part of the description of how information is learnt, the researcher elaborates how the ACT

model can provide tools for the data-driven investigation of language learning and strategy use.

In this ACT model, Anderson (1983) distinguishes two types of knowledge: 1) declarative knowledge: what we know about a given topic; and 2) procedural knowledge: what we know about how to do. The ACT model enables declarative knowledge to become procedural knowledge. The most important is that the interplay between declarative knowledge and procedural knowledge will lead to the refinement of language ability. The process takes place in three stages: cognitive, associative, and autonomous. L2 learners start with declarative knowledge, which is sometimes called the “cognitive” stage; develop procedural knowledge, which is sometimes called “associative” stage; and at the the fine-turning stage, which is sometimes called “autonomous” stage, native-like automatic processing gradually improves. In sum, “the central points in the ACT model are the theoretical claim that learning begins with declarative knowledge which slowly becomes proceduralized, and that the mechanism by which this takes place in practice (Rao, 2008. p. 57)”.

Although Anderson (1983) does not mention learning strategies, the description of the cognitive process in the ACT model is consistent with the two types of LLSs by O'Malley and Chamot (1990): metacognitive strategies, which allow conscious management and control over learning by students; and cognitive strategies, which are largely unconscious and automatic, though they were once conscious and can be consciously strengthened through strategy training (McLaughlin et al., 1983; Scoval, 1989). According to Rao (2008, p. 58), “a number of the mental processes Anderson (1983) discusses, such as planning, selective attention and monitoring, serve to explain how strategies are represented, how they are learnt, and how they

influence L2 acquisition.”

2.2.2 Social-cognitive Learning Theory

Social psychologists and social-cognitive psychologists have also made contributions to the development of the theories of language learning and those of LLSs. Social learning and social cognitive theories emphasize the impact of social and cultural factors on human learning (Zhang, 2010). According to Bandura's (1986) social cognitive theory, cognitive factors, such as beliefs, self-perceptions, and expectations, are crucial to learning. Gardner and MacIntyre (1993) suggest that success in a second language is associated with the learners' characteristics, situational variables, and learning strategies. There are also other researchers who have focused on the role of social interaction in the learning process. For instance, Vygotsky's (1978) social learning theory assumes that language acquisition takes place through the interactions of learner and more advanced interlocutor.

A most prominent and well-developed framework integrating social and cultural variables into L2 acquisition is that of Gardner (1985), who proposes what he terms a social-educational model of language acquisition. The rationale behind this model is the belief that the acquisition of an L2 is a social psychological rather than an educational phenomenon.

According to Gardner (1985), the model seeks to interrelate four aspects of L2 learning: 1) the social and cultural milieu, 2) individual learner differences, 3) the setting, and 4) learning outcomes. The social and cultural milieu in which learners grow up determines their beliefs about language and culture, and determines the extent to which they wish to identify with the target-language culture and also the extent to which they hold positive attitudes towards the learning situation. Both social

and cultural milieu and positive attitudes towards the learning situation contribute to the learners' motivation, which has a major impact on learning in both formal and informal contexts. Motivation and language aptitude, together with intelligence and situational anxiety, determine the learning behaviours seen in different learners in the formal and informal contexts and, thereby, learning outcomes. The model is dynamic and cyclical.

Another framework integrating social and cultural variables into L2 acquisition is proposed by Ellis (1994). In this framework, situational and social factors such as target language, setting, task performance and sex; and individual differences such as beliefs, affective states, learner factors and learning experience, are considered to have effects on learners' choice of learning strategies, which go on influencing learning outcomes.

The cognitive learning theories and social-cognitive theories have provided rationales for the use and development of learning strategies, have suggested ways to make language learning more effective, and have shown some pictures of the nature of LLSs and their influence on second language acquisition. Therefore, they have provided the theoretical foundation for the study of LLSs in L2 acquisition.

2.3 Definitions and Characteristics of Language Learning Strategies

Despite a growing body of research on language learning strategies over the past three decades, there is a considerable debate as to appropriate ways of defining LLSs, and there is no strong consensus on what constitutes a learning strategy in L2 learning or how these differ from other type of learner activities (Rao, 2008). According to Ellis (1994), the concept of strategies is a somewhat obscure one and

not easy to tie down. Various researchers have contributed to the definitions of LLSs, defining them from different angles as follows:

Bialystok (1985, p. 58) construes language learning strategies as “activities undertaken by learners, whether consciously or not, that have the effect of promoting the learner’s ability either to analyze the linguistic knowledge relevant to the language under study, or to improve the control of procedures for selecting and applying that knowledge under contextual conditions.”

Wenden (1987, pp. 6-7) defines language learning strategies as “actions or techniques, whether observable or unobservable, which can be learned and changed and contribute either directly or indirectly to learning. Learners take these actions or employ these techniques either consciously or automatically in response to needs.”

Rubin (1987, p. 23) offers the definition of language learning strategies as ‘strategies which contribute to the development of the language system which the learner constructs and affects learning directly’.

Chamot (1987, p. 71) defines language learning strategies as ‘techniques, approaches, or deliberate actions that students take in order to facilitate the learning and recall of both linguistic and content area information.’

O’malley and Chamot (1990, p. 1) state that language learning strategies are ‘the special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information.’

Oxford (1990, p. 8) defines language learning strategies as ‘specific actions taken by the learner to make learning easier, faster, more enjoyable, more self-directed, more effective, and more transferrable to new situations.’

Nunan (1991, p. 168) offers the definition of language learning strategies as ‘the mental processes which learners employ to learn and use the target language.’

Ellis (1994, p. 529) offers a general definition that ‘a language learning strategy consisted of mental or behavioral activity related to some specific stages in the overall process of language acquisition or language use’.

Intaraprasert (2000, p. 22) defines language learning strategies as ‘any set of techniques or learning behaviors, whether observable or unobservable, which students reported employing for the purpose of enhancing their language learning either in the classroom setting, or outside the classroom setting.’

Prakongchati and Intaraprasert (2007, p. 3) define language learning strategies as ‘conscious behaviors or thought processes used in performing learning actions, whether observable (behaviors or techniques) or unobservable (thoughts or mental process) that students themselves generate and make use of to enhance their L2 learning in the classroom and in a free learning situation.’

Griffiths (2007, p. 91) defines language learning strategies as ‘activities consciously chosen by learners for the purpose of regulating their own language learning’.

Abhakorn (2008, p. 191) views that ‘language learning strategies are not only tools to assist language learning, but they are also tools to serve many other purposes both in learning and using a second language.’

Swain et. al., (2009, p. 2) define language learning strategies as the ‘conscious, goal-oriented thoughts and actions that learners use to regulate cognitive processes with the goal of improving language learning or language use.’

Lee (2010, p. 134) views language learning strategies as ‘learning skills, learning-to-learn skills, thinking skills, problem skills or in other words the methods which learners use to intake, store, and retrieve during the learning process.’

Minh (2012, p. 5) defines language learning strategies as ‘behaviors or thought processes whether observable or unobservable, or both, that science-oriented university students generated and made use of to enhance their specific skills or general knowledge in learning the English language.’

From all the definitions listed above, we can see that there exist some similarities and disparities among them. As stated by Ellis (1994, p. 531), the definitions of language learning strategies reveal a number of problems, which will be illustrated as follows:

(1) Observable behaviors, or unobservable mental processes, or both

As seen above, there is no agreement on whether language learning strategies are observable behaviors, unobservable mental processes, or both. According to Ellis (1994, p. 531), “it is not clear whether they are to be perceived of as behavioural (and, therefore, observable) or as mental, or as both.” This problem results from the fact that different criteria are used to define language learning strategies. In sum, language learning strategies are regarded as specific actions by Oxford (1990), as mental processes by Nunan (1991), and as being both behavioral and mental by Wenden (1987), O’malley and Chamot (1990), Ellis (1994), Intaraprasert (2000), Prakongchati and Intaraprasert (2007), and Swain et. al. (2009).

(2) Conscious and intentional activities, or subconscious activities, or both

The second problematic issue pertains to the absence of consensus as to whether strategies need to be conscious in order for them to be considered strategies

(Cohen, 1990). According to Gamage (2003), language learning strategies are used to retrieve and store new information in the brain till this information becomes automatic. Though some researchers avoid addressing this issue explicitly, Griffiths (2007), Prakongchati and Intaraprasert (2007), and Swain et. al. (2009) refer to strategies as activities consciously chosen by learners. Bialystok (1985) and Wenden (1987) view them as actions taken by learners either consciously or unconsciously. No researchers affirm that strategies are just employed by learners unconsciously or automatically.

(3) General approaches, or specific actions / techniques, or both

There is considerable uncertainty concerning whether strategies are general approaches or specific actions/techniques, which concerns the precise nature of the behaviours that are to count as learning strategies according to Ellis (2008). Among the definitions listed above, Bialystok (1978), Oxford (1990) and Intaraprasert (2000) take language learning strategies as specific techniques; Chamot (1987) and Ellis (1997) treat them both as general approaches and as specific actions / techniques; and no researchers consider language learning strategies only as general approaches.

(4) Direct or indirect effects on target language learning

Cohen (1998) puts forward that some strategies contribute directly to learning, and other strategies, perhaps the bulk of them, have as their main goal of using the language. Among the researchers above, only Rubin (1987) declares that language learning strategies help learner 'constructs and affects learning directly, and Wenden (1987) illustrates that strategies can contribute either directly or indirectly to learning. All the other researchers do not specify whether strategies affect language learning directly or indirectly.

(5) Different purposes of strategy use

Since different language learners have different learning styles and take different strategies for different purposes in language learning, the strategy use is determined by specific language learning tasks and learners' strategy use preferences (Ni, 2008). Researchers give their own definitions showing greatly or somewhat different purposes of strategy use.

The arguments over the definition of language learning strategies are in no way settled. Perhaps one of the best approaches to defining LLSs is to try to find out their main characteristics (Ellis, 1994). Ellis (2008, p. 704) puts forward that language learning strategies 'are perhaps best defined in terms of a set of characteristics that figure in most accounts of them':

- (1) Strategies refer to both general approaches and specific actions or techniques used to learn a second language;
- (2) Strategies are problem-orientated – the learner deploys a strategy to overcome some particular learning or communication problem;
- (3) Learners are generally aware of the strategies they use and can identify what they consist of if they are asked to pay attention to what they are doing/thinking;
- (4) Strategies involve linguistic behavior and non-linguistic behavior;
- (5) Linguistic strategies can be performed in the second language as well as in the first language;
- (6) Some strategies are behavioral while others are mental. Thus some strategies are directly observable, while others are not;
- (7) In the main, strategies contribute indirectly to learning by providing learners with data about the second language which they can then process. However, some strategies may contribute directly;

- (8) Strategy use varies considerably as a result of both the kind of task the learner is engaged in and individual learner preferences.

Though by no means perfect, Ellis's (2008) list of the main characteristics of language learning strategies responds to the problems in the definitions quoted above. Taking all the definitions into consideration, the researcher has proposed to define language learning strategies in order to suit the context of the present investigation. Language learning strategies have been defined as some general approaches or specific actions/techniques, whether observable or unobservable, which Chinese English-major pre-service teachers make use of to enhance their English language learning directly or indirectly.

2.4 Language Learning Strategy Classification System

Just as there are various ways in defining language learning strategies, researchers' ways of classifying them vary considerably as well. The problem results from the fact that different criteria are used to classify LLSs, causing inconsistencies and mismatches across existing taxonomies and other categorizations (Cohen, 1998). Chamot (2004) makes a conclusion that earlier researchers use their own observations to describe LLSs (e.g. Rubin, 1975; Stern, 1975), rely on categories derived from research in first language contexts (e.g. O'Malley & Chamot, 1990), develop a comprehensive list of learning strategies derived from many sources (e.g. Oxford, 1990), or give their strategy identification and classification by data-driven through think-aloud protocol analysis (e.g. Chamot et. al, 1996; Chamot & El-Dinary, 1999). Anyway, considerable effort has gone into classifying the language learning strategies that learners use (Ellis, 2008).

Yan (2009) summarizes four different criteria for classifying LLSs listed by Cohen (1998) based on the purposes of LLSs, forms of performance, strategy users, and psychological processes. Based on their different purposes, there can be language learning strategies and language use strategies; on the forms of performance, there exist overt behavior strategies and thinking activity strategies; on strategy users, there are strategies used by successful learners and unsuccessful learners; and on the psychological processes, there are cognitive, metacognitive, social and affective strategies. As concluded by Yan (2009), the methods of classification could be from the following aspects of language learning strategies: the functions, different stages of strategy use, the relationship between strategies and language learning materials, and the purpose of language learning strategy use.

Based on the different criteria above, the researcher has her own thoughts. In the researcher's opinion, those different classifications can be classified into four main categories from different angles: function, purpose, learning environments, and language skills. The function group is named following O'Malley et. al. (1985), who classify LLSs into cognitive strategies and self-management strategies according to their functions in learning; the purpose group follows Intaraprasert (2000), who classifies his LLSs according to their being used in order to achieve particular language learning purposes; the learning environments group follows Coleman (1991), who proposes an environmental or contextual strategy, and the language skills group goes after Cohen and Oxford (2002), who classify LLSs as different language skills. In the subsequent part, the researcher's classification system of language learning strategies is briefly introduced according to the classification criteria: by function, by purpose, by learning environments, and by language skills.

2.4.1 Classification System by Function

According to Cohen (1998, p. 9), an “approach to strategy description is through labeling the function of each strategy that is selected.” Though Bialystok (1990) considers the classification of strategies according to their function as too simplistic because they can have multiple functions, language learning strategies often do have one function, and even if they have more than one function, there may still be one principal function. In any case, it would seem useful to continue to identify the functions that strategies actually assume in given tasks (Cohen, 1998). As a matter of fact, classification by function occupies most of the overall classifications of LLSs.

Based on Wenden’s (1983) view, there are two main kinds of language learning strategies: cognitive strategies and self-management strategies which are clarified according to their functions in learning. Wenden’s (1983) research examines the strategies that adult foreign language learners use in order to direct their own learning. She identifies three general categories of self-directing strategies relating to progress in learning and learner’s responses to the learning experience as follows:

1. Knowing about language and relating to what language and language learning involves;
2. Planning relating to the ‘what’ and ‘how’ of language learning;
3. Self-evaluation.

O’Malley and Chamot (1990) offer three types of language learning strategies, in accordance with the information-processing model, on which their research is based. The classification emerges from research in cognitive psychology based on interviews with experts and novices on psychological tasks and from theoretical analyses of reading comprehension and problem solving. The three

categories are meta-cognitive, cognitive and social/affective strategies. Meta-cognitive strategies entail planning for, monitoring, or evaluating the success of a learning activity. Cognitive strategies operate directly on incoming information, manipulating it in ways that enhance learning. Social/affective strategies represent a broad grouping that involves either interaction with another person or ideational control over affect. The three categories of language learning strategies and their corresponding functions are provided below (O'Malley & Chamot, 1990):

1. Meta-cognitive strategies
e.g. selective attention, planning, monitoring, and evaluation
2. Cognitive strategies
e.g. rehearsal, organization, inferencing, summarizing, deducing, imagery, transfer, and elaboration
3. Social/affective strategies
e.g. cooperation, questioning for clarification, and self-talk

Oxford (1990, p. 14) offers a 'more systematic system of language learning strategies in linking individual strategies, as well as strategy groups, with each of the four language skills (listening, reading, speaking and writing), using less technical terminology'. She produces her classification system on the basis of early classifications, using an inductive approach, which includes six categories: memory, cognitive, metacognitive, compensation, social, and affective strategies. Memory strategies help learners store and retrieve new information, cognitive strategies facilitate the understanding and production of new language, compensation strategies allow learners to bridge over large knowledge gaps to make meaning, metacognitive strategies are used by the learner to coordinate the learning process, affective strategies help the learner to regulate their emotions, motivations, and attitudes, and

social strategies facilitate learning through learner interaction with others. The six categories of language learning strategies and their corresponding functions are presented as follows (Oxford, 1990, p. 17):

1. Memory strategies

e.g. creating mental linkages, applying images and sound, reviewing well, and employing action

2. Cognitive strategies

e.g. practicing, receiving and sending messages, analyzing and reasoning, and creating structure for input and output

3. Compensation strategies

e.g. guessing intelligently and overcoming limitations in speaking and writing

4. Metacognitive strategies

e.g. centering your learning, arranging and planning your learning, and evaluating your learning

5. Affective strategies

e.g. lowering your anxiety, encouraging yourself, and taking your emotional temperature

6. Social strategies

e.g. asking questions, cooperating with others, and empathizing with others

Oxford (2011) puts forward a new Strategic Self-Regulation Model of language learning. In this model, language learning strategies specifically refer to self-regulated L2 learning strategies, which are defined as deliberate, goal-directed attempts to manage and control efforts to learn L2. LLSs are divided into metastrategies, cognitive strategies, affective strategies, and sociocultural-interactive (SI) strategies. Metastrategies refer to strategies that provide general management/control of cognitive strategies, including metacognitive, meta-affective

and metasocial strategies, which has the purpose of managing and controlling L2 learning in a general sense, with a focus on understanding one's own needs and using and adjusting the other strategies to meet those needs. Cognitive strategies help the learner construct, transform, and apply L2 knowledge for the purpose of remembering and processing the L2. Affective strategies help the learner create positive emotions and attitudes and stay motivated with the purpose of handling emotions, beliefs, attitudes, and motivations in L2 learning. Sociocultural-interactive strategies help the learner with communication, sociocultural contexts and identity with the aims to deal with issues of contexts, communication, and culture in L2 learning. The four categories and their functions are provided in the following (Oxford, 2011, p. 16):

1. Metastrategies

e.g. paying attention, planning, obtaining and using resources, organizing, implementing plans, orchestrating strategy use, monitoring, and evaluating

2. Cognitive strategies

e.g. using the senses to understand and remember, activating knowledge, reasoning, conceptualizing with details, conceptualizing broadly, and going beyond the immediate data

3. Affective strategies

e.g. activating supportive emotions, beliefs and attitudes, and generating and maintaining motivation

4. Sociocultural-interactive strategies

e.g. interacting to learn and communicate, overcoming knowledge gaps in communicating, and dealing with sociocultural contexts and identities,

2.4.2 Classification System by Purpose

Several researchers classify their language learning strategies according to different purposes of language learning strategy use. The examples are as follows:

Carver (1984) has proposed four categories for the classification of language learning strategies based on the research work of Seliger (1978) and Tarone (1978, 1980). He designates the plan strategies, or so-called specific learning strategies which learners tend to usually employ when they learn languages. His language learning strategy classification can be divided as follows:

1. Strategies for coping with target language rules
e.g. generalization, transfer from first language and reinterpretation
2. Strategies for receiving performance
e.g. inferring from probability, checking by asking for repetition and simplification
3. Strategies for producing performance
e.g. repeating sentences or key elements oneself
4. Strategies for organizing learning
e.g. contacting with teachers or peers

Intaraprasert (2000) classifies language learning strategies according to particular language learning purposes, either classroom-related or classroom-independent. The list of the categories and subcategories of language learning strategies is provided as follows:

1. Classroom-related category
 - A) To be well-prepared for the lessons
e.g. study the lesson beforehand
 - B) To keep up with the teacher while studying in class
e.g. listen to the teacher attentively

- C) To get the teacher's attention in the classroom
e.g. try to interact with teacher by asking or answering
- D) To learn new vocabulary for the classroom lessons
e.g. memorize new vocabulary items with or without the vocabulary lists
- E) To avoid being distracted while studying
e.g. try to get a seat in the front row
- F) To solve problems encountered in the classroom lessons
e.g. ask the teacher in class wither immediately or when appropriate
- G) To pass the English tests
e.g. do the revision of the lesson only for examination

2. Classroom-independent category

- A) To expand one's knowledge of English vocabulary and expressions
e.g. read print materials in English
- B) To improve one's listening skill
e.g. watch an English speaking film
- C) To improve one's speaking skill
e.g. talk to oneself
- D) To improve one's writing skill
e.g. correspond in English by electronic mail or letter
- E) To acquire one's general knowledge in English
e.g. seek an opportunity to be exposed to English

2.4.3 Classification System by Learning Environments

Coleman (1991) has another way to classify language learning strategies. He proposes an environmental or contextual strategy by using preliminary data provided by a small-scale investigation of 40 Thai teachers, who were taking part in some of the in-service teacher development programs at School of Education, the

University of Leeds. The listed 77 learning strategies are classified under 18 strategy types, and then further grouped into the following 3 broad categories:

1. Strategies related to the taught programme
 - A) Before class
 - e.g. Preparing the lesson before coming to class
 - B) In class
 - e.g. Paying attention or asking questions
 - C) After class
 - e.g. Contacting the teacher and asking questions
2. Strategies which are extra to the class
 - e.g. Mixing with English speakers or using media
3. Strategies which are termed as ‘bucking the system’
 - e.g. Finding privileged information or sitting near bright students

Prakongchati (2007) presents her language learning strategy classification according to the learners’ reported performances and perceptions of acquiring second language learning in the classroom context and a free-time situation as follows:

1. Preparing oneself for classroom lessons
 - A) Before class
 - e.g. studying the course details beforehand
 - B) After class
 - e.g. reviewing own notes/summary
2. Understanding while studying in class
 - A) Intra-personal interaction
 - e.g. trying to get a seat in the front row
 - B) Inter-personal interaction
 - e.g. asking the teacher for clarification

3. Improving one's language skills
 - A) Media utilization
 - e.g. reading on-line materials
 - B) Non-media utilization
 - e.g. practicing writing with English texts such as poems, greeting cards, or diaries etc.
4. Expanding one's general knowledge of English
 - A) Media utilization
 - e.g. practicing English with a commercially packaged English program
 - B) Non-media utilization
 - e.g. having extra tutorials

2.4.4 Classification System by Language Skills

Some researchers classify language learning strategies according to different language skills. The examples are as follows:

Cohen and Oxford (2002) classify language learning strategies as the following language skills: listening strategies, vocabulary strategies, speaking strategies, reading strategies, writing strategies, translation strategies in a young learners' language strategy use survey.

Minh (2012) generated language learning strategies as two skill-oriented categories: strategies for specific language skills enhancement and strategies for general language knowledge enhancement. The specific is as follows:

1. Strategies for specific language skills enhancement
 - A) Strategies for listening skill enhancement
 - e.g. Listening to English songs
 - B) Strategies for speaking skill enhancement
 - e.g. Participating in discussions in groups or classes, or clubs

- C) Strategies for reading skill enhancement
 - e.g. Reading English brochures, leaflets or billboards
- D) Strategies for writing skill enhancement
 - e.g. Writing e-mails, diaries, notes, messages, letters, or reports in English
- E) Strategies for pronunciation enhancement
 - e.g. Imitating native speakers
- F) Strategies for grammar enhancement
 - e.g. Doing extra grammar exercises from non-course books
- G) Strategies for vocabulary Enhancement
 - e.g. Memorising words in English
- 2. Strategies for general language knowledge enhancement
 - A) Media reliance strategies
 - e.g. Using a mobile phone or a tape recorder or a compact disc
 - B) Non-media reliance strategies
 - e.g. Creating English learning atmosphere for oneself

In conclusion, LLSs have been classified by different researchers from different angles. In the researcher's view, language learning strategies are mainly classified by function, purpose, learning environments, and language skills. According to Ellis (1994, p. 539), 'perhaps the most comprehensive classification of learning strategies to date is that provided by Oxford'. Hsiao and Oxford (2002, p. 368) concludes that of all the strategy classifications examined, "Oxford's (1990) six factor strategy taxonomy is the most consistent with learners' strategy use." Ellis (2008, p. 705) also summarizes that 'two of the most commonly cited taxonomies are O'Malley and Chamot (1990) and Oxford's (1990)'. Rao (2008, p. 23) adopts Oxford's (1990) classification scheme in his study, claiming that it is "because its 'whole person' theoretical orientation towards L2 learning behavior has the potential to help Chinese

students expand their traditionally limited conception of what happens when learning a new language.” As summarized above, the most popularly accepted classification system is by function. Therefore, for the present study, the research also follows this classification system.

As shown above, the six-category classification of LLSs by Oxford (1990) is taken as the most comprehensive and popular ones among all the classifications. However, it is not perfect yet, with some interrelations, since Oxford (1990, p. 16) herself admits that ‘a large overlap naturally exists among the strategy groups in the system presented.’ For instance, both metacognitive strategy and compensation strategy require reasoning, which is itself a cognitive strategy. Therefore, for the present study, the researcher follows the four-category classification of LLSs by Oxford (2011), since it is a relatively newer classification, there are no interrelations among the categories, and Oxford (2011, p. 42) herself admits that “it is a unified, logically coherent system.”

2.5 Research on Language Learning Strategies

Research on language learning strategies has been going on about 40 years and has made great achievements and contributions to theories on language learning strategies and L2 acquisition. Early research on LLSs focused more on good language learner studies (e.g. Rubin 1975; Stern 1975; Naiman et. al., 1978). Then many researchers showed their interest in factors affecting strategy use (e.g. Chamot & O’Malley, 1987; Oxford & Nyikos, 1989; Ehrman, 1990; El-Dib, 2004; Hong-Nam & Leavell, 2006; Kavasoglu, 2009; Radwan, 2011; Minh, 2012); or did correlational studies among strategy use, other variables of individual differences, and learning

outcomes (e.g. Magogwe & Oliver, 2007; Lee & Oxford, 2008; Wong & Nunan, 2011).

Research on language learning strategies began with the strategies of the ‘good language learner’ by Rubin (1975) based on observation and intuition, and concluded that good language learners are willing and accurate guessers who have a strong desire to communicate. Following this, Naiman et. al. (1978) also explored strategies by good language learners, and summarized that good language learners tend to get actively involved in the language learning process and develop an awareness of language both as a formal system of rules and as a means of communication. From these initial research efforts, numerous researchers have attempted to explore strategies employed by successful language learners (e.g. Reiss, 1983; Politzer & McGroarty, 1985; Abraham & Vann, 1987; Chamot & Küpper, 1989; Oxford & Nyikos, 1989; O’Malley & Chamot, 1990; Vann & Abraham, 1990; Oxford & Ehrman, 1993, 1995). The investigated strategies were suggested for unsuccessful or poor language learners to apply in order to make them become successful language learners (Minh, 2012). Therefore, the ‘good language learner studies’ have proved to be a useful way of investigating how strategies affect language learning and constitute one of the most effective lines of inquiry in learning strategy research (Rao, 2008).

Later on, researchers in this field tended to explore factors that are related to the choice of language learning strategy use by language learners. According to Oxford (1990), the types of strategies used by different learners vary due to different factors, such as degree of awareness, stage of learning, task requirements, teacher expectations, age, sex, nationality/ethnicity, general learning style, personality traits, motivation level, and purpose for learning the language. According to Ellis (2008), a

range of factors have been found to affect strategy choice, some relating to the learners, and others relating to the situational and social context of learning. The investigated learner factors include age, aptitude, motivation, personality types, and personal background; and the investigated situational and social factors contain gender, the language being learned, and specific learning settings in classroom (Ellis, 2008). Among these variables, proficiency level, motivation and gender have been examined to affect LLSs used by L2/FL learners (O'Malley, et. al., 1985; Oxford & Nyikos, 1989; Ehrman & Oxford, 1990). Rahimi, Riazi and Saif (2011) also claim that learners' level of language proficiency, motivation, learning style, and gender have been shown to have a strong effect on learners' use of different types of strategies.

In order to provide readers with a general framework of the research works, some selected research works related to language learning strategies have been presented and interpreted. The researcher attempts to present some analysis of these past research works according to the purpose of study, participants, instruments, variables, data analysis, results and implications of the study. The selected research works have been conducted first in countries other than China and then in China.

2.5.1 Research on Language Learning Strategies Conducted in Countries Other than China

There are some selected research works on language learning strategies conducted in countries other than China as follows.

Table 2.1 Research Works on LLSs Conducted in Countries Other than China**(Cont.)**

3. Green and Oxford (1995) A Close Look at Learning Strategies, L2 Proficiency, and Gender	
Purpose(s)	To describe the patterns of variation in overall strategy use, strategy use by SILL categories, and strategy use at the individual item level
Participants	374 EFL university learners at three different course levels at the university of Puerto Rico at Mayaguez
Instrument(s)	1. English as a Second Language Achievement Test (ESLAT) 2. SILL (50-item, Version 7.0 for ESL/EFL) (Oxford, 1990)
Variable(s)	1. Proficiency level 2. Gender
Data Analysis	1. ANOVA 2. Post-hoc tests 3. Chi-square tests 4. Factor analysis
Results	1. It finds greater use of learning strategies among more successful learners and higher levels of strategy use by women than by men with more complex patterns of use than in previous studies. 2. Strategies used more often by more successful students emphasize active, naturalistic practice and are used in combination with a variety of what they term bedrock strategies, which are used frequently or moderately frequently by learners at all levels.
Implication(s)	1. Students should be made aware of the key importance of active use strategies involving naturalistic practice, especially in situations where the opportunities for such practice are widely available. 2. It is important for teachers to recognize that some strategies may be more suited to some learners than to others.
4. Griffiths (2003) Patterns of Language Learning Strategy Use	
Purpose(s)	To explore the relationship between course level and language learning strategy use and to look for patterns of strategy use according to course level and other learner variables.
Participants	348 ESL/EFL students from 21 countries, aging 14–64, 7 levels ranging from elementary to advanced, 114 male and 234 females
Instrument(s)	SILL (50-item, Version 7.0, for EFL/ESL) (Oxford, 1990)
Variable(s)	1. Course level 2. Nationality 3. Sex 4. Age
Data Analysis	1. Descriptive analysis 2. Pearson correlation 3. Regression analysis
Results	1. There are significant differences in strategy use and course level according to nationality. 2. Higher level students frequently use strategies relating to interaction with others, to vocabulary, reading, tolerance of ambiguity, language systems, management of feelings, management of learning, and to the utilization of available resources.

Table 2.1 Research Works on LLSs Conducted in Countries Other than China**(Cont.)**

Implication(s)	The possibility that effective use of LLSs might contribute to successful language learning is exciting. Teachers might consider it worthwhile to build the findings and similar studies into strategy awareness programs so that any potential benefits might be made available to their learners.
5. El-Dib (2004) Language Learning Strategies in Kuwait: Links to Gender, Language Level, and Culture in a Hybrid Context	
Purpose(s)	To investigate the underlying factors of the SILL that may allow for further cross-culture comparisons and the relationship between gender, language level and the underlying factors of the SILL.
Participants	750 ESL/EFL learners randomly selected from 4 colleges in Kuwait
Instrument(s)	Arabic translation (Kassabgy & Boraie, 1992) of SILL (50-item, Version 7.0, for EFL/ESL learners) (Oxford, 1990)
Variable(s)	1. Gender 2. Language level 3. Culture
Data Analysis	Factor analysis
Results	<ol style="list-style-type: none"> 8 underlying factors emerged: active naturalistic English use, metacognitive planning, cognitive compensatory strategies, sensory-memory strategies, repetition-revision strategies, social strategies, affective strategies and cognitive memory strategies. Relationships exist between gender and active naturalistic language use, cognitive-compensatory strategies and repetition-revision strategies, and between language level and active naturalistic strategies and affective strategies.
Implication(s)	It is proposed that learning contexts in a cultural milieu are perhaps the strongest variable affecting strategy choice and there a need for a more contextualized approach to strategy use.
6. Intaraprasert (2004) Out-of-class Language Learning Strategies Used by EST Students: Factor Analysis	
Purpose(s)	To explore factors related to strategy use of students learning English for Science and Technology (EST) at Suranaree University of Technology.
Participants	488 Thai postgraduates from 4 different institutes: Engineering, Agricultural Technology, Public Health, and Social Technology, selected on the basis of convenience and availability.
Instrument(s)	Researcher-constructed written strategy questionnaire
Variable(s)	<ol style="list-style-type: none"> Students' perceptions of the English language ability level Gender Field of study
Data Analysis	Factor analysis
Results	There are 4 factors emerged: strategies to improve productive skills, strategies for using media for the English general language enhancement, strategies for listening skill improvement, and extra resources reliance for language improvement. All of which are found strongly related to students' perceived language ability levels.

Table 2.1 Research Works on LLSs Conducted in Countries Other than China**(Cont.)**

Implication(s)	The relationship between students' choices of strategy use and 'perceived' language ability level is still complex, while more one directional between the choices and the other two variables: gender and students' field of study.
7. Hong-Nam and Leavell (2006) Language Learning Strategy Use of ESL students in an Intensive English Learning Context	
Purpose(s)	To investigate learners' overall language learning strategy use, look at the relationship between strategy use and language proficiency, and assess any differences in strategy use by gender and nationality.
Participants	55 ESL students enrolled in an IEP at a large Southwestern university
Instrument(s)	SILL(50-item, Version 7.0, for EFL/ESL learners) (Oxford, 1990)
Variable(s)	1. English proficiency 2. Gender 3. Nationality
Data Analysis	1. Descriptive analysis 2. ANOVA 3. Scheffe post-hoc test
Results	<ol style="list-style-type: none"> 1. There is a curvilinear relationship between language learning strategy use and English proficiency, revealing that students in the intermediate level report more use of strategies than beginning and advanced levels. 2. Students prefer to use metacognitive strategies most, whereas they show the least use of affective and memory strategies. 3. Females tend to use affective and social strategies more frequently than males.
Implication(s)	<ol style="list-style-type: none"> 1. Teacher can facilitate students' learning by addressing both content and process, relating daily learning tasks to their prior knowledge of how they learn best is very important. 2. Learners at different levels have different needs in terms of teacher intervention in the learning process.
8. Magogwe and Oliver (2007) The Relationship between Language Learning Strategies, Proficiency, Age and Self-efficacy Beliefs: A Study of Language Learners in Botswana	
Purpose(s)	To examine language learning strategies used by Botswana students and the relationship between strategy use and other aspects as age, level of education, proficiency, self-efficacy.
Participants	480 EFL students from primary schools (168), secondary schools (175), and a tertiary institution (137) by stratified random sampling
Instrument(s)	<ol style="list-style-type: none"> 1. A modified version of the SILL (Version 7.0 for ESL/EFL) 2. Morgan-Jinks Student Efficacy Scale (Jinks and Morgan, 1999)
Variable(s)	<ol style="list-style-type: none"> 1. Level of education 2. English language proficiency 3. Self-efficacy beliefs 4. Age
Data Analysis	<ol style="list-style-type: none"> 1. Descriptive analysis 2. One sample t-tests 3. ANOVA 4. Bonferroni post-hoc tests 5. Pearson correlation
Results	<ol style="list-style-type: none"> 1. Botswana students do use a number of language learning strategies, but they show distinct preferences for particular types of strategies. 2. There is a dynamic relationship between language learning strategy use and proficiency, level of schooling and self-efficacy beliefs.

Table 2.1 Research Works on LLSs Conducted in Countries Other than China**(Cont.)**

Implication(s)	1. Teachers should promote positive self-image and strategy awareness when they teach learning strategies more effectively and efficiently and should not emphasize stereotypical strategy use based on gender or majors. 2. To teach English in the EFL settings more effectively, several items in the SILL can be added or revised
11. Kavasoglu (2009) Learning Strategy Use of Pre-service Teachers of English Language at Mersin University.	
Purpose(s)	To determine language strategies of pre-service teachers of English language and examine the effects of variables such as students' gender, grade of class, and type of high schools on their strategy use.
Participants	167 pre-service teachers of English language at Mersin University in Turkey from 4 grades, 107 females and 60 males, aging from 18 to 25
Instrument(s)	SILL (50-item, Version 7.0, for EFL/ESL learners) (Oxford, 1990)
Variable(s)	1. Gender 2. Grade of class 3. Type of high schools
Data Analysis	1. Descriptive analysis 2. Independent Sample T-Test 3. ANOVA
Results	All students use metacognitive strategies at the highest level, show statistically significant gender differences, favoring females, and class differences but no statistically significant differences in terms of the type of high schools.
Implication(s)	1. Longitudinal research is needed to understand whether the strategy preference changes in accordance with the class degree they are in. 2. EFL teachers can integrate learners' preferred strategies with their teaching methods and provide conditions for learners to use their preferred strategies.
12. Murray (2010) Students' Language Learning Strategy Use and Achievement in the Korean as a Foreign Language Classroom	
Purpose(s)	To examine the relationship between strategy use and the development of proficiency in a Korean as a Foreign Language classroom
Participants	66 English native speakers learning Korean as a foreign language at an academic institution in the western part of the United States, aging from 19 to 23, including 10 females and 56 males
Instrument(s)	SILL(80-item, Version 5.1, for native speakers of English studying a foreign language) (Oxford, 1990)
Variable(s)	Achievements
Data Analysis	1. Descriptive analysis 2. Pearson correlation

Table 2.1 Research Works on LLSs Conducted in Countries Other than China**(Cont.)**

Results	<ol style="list-style-type: none"> 1. It indicates a low positive correlation between each of the six subscales and between SILL scores, total SILL, and classroom achievement, and a somewhat higher correlation between the subscales and the total SILL score; 2. The low correlations between strategy use and classroom achievement make it difficult to conduct meaningful regression analysis to determine predictability.
Implication(s)	An overemphasis on language learning strategies may not be appropriate, and they should be treated as only one among many variables in the language learning process.
13. Sriboonruang and Intaraprasert (2010) In-class language learning strategies used by Thai pre-university students: Factor analysis	
Purpose(s)	To explore factors related to strategy use of Thai pre-university students in Thailand.
Participants	1,816 last-year pre-university students in Thailand selected based on convenience and availability.
Instrument(s)	A researcher-generated language learning strategy questionnaire
Variable(s)	<ol style="list-style-type: none"> 1. Extra-class support 2. Level of language proficiency 3. In-class language learning strategies
Data Analysis	Factor analysis
Results	The four factors include strategies for the classroom preparation, strategies for learning new vocabulary in the classroom lessons, strategies for solving classroom problems, and strategies for concentrating while studying in class, all of which are found strongly related to extra-class support and level of language proficiency.
Implication(s)	None
14. Kaur and Embi (2011) Language Learning Strategies Employed by Primary School Students	
Purpose(s)	To examine the frequency of language learning strategies use according to listening, speaking, reading and writing skills as well as to identify the overall language learning strategies used by language learners in a primary school.
Participants	60 primary students from two classes in Grade 6, 30 males and 30 females, ranging from 11 to 12 years old.
Instrument(s)	A bilingual version adapted from Language Strategy Use Inventory by Cohen, Oxford and Chi (2002) and developed by Kuen (2010), consisting of 40 statements concerning the four major English language skills.
Variable(s)	Language skills
Data Analysis	Descriptive analysis

Table 2.1 Research Works on LLSs Conducted in Countries Other than China**(Cont.)**

Results	Primary school students are high users of reading and writing strategies and moderate users of listening and speaking strategies. There are variations in responses with regard to the use of language learning strategies among primary school students.
Implication(s)	<ol style="list-style-type: none"> 1. The role of a teacher should be adjusted from a mere language teacher to a facilitator who encourages students' active participation in the teaching and learning process 2. Awareness-raising sessions on language learning strategies should be introduced in the classrooms.
15. Radwan (2011) Effects of L2 Proficiency and Gender on Choice of Language Learning Strategies by University Students Majoring in English	
Purpose(s)	To explore language learning strategy use and examine relationship between strategies and various factors in a variety of settings and cultural backgrounds.
Participants	147 English majors at Sultan Qaboos University in Oman
Instrument(s)	SILL (50-item, Version 7.0, for EFL/ESL learners) (Oxford, 1990)
Variable(s)	<ol style="list-style-type: none"> 1. Gender 2. Proficiency 3. Duration of study 4. Self-rating
Data Analysis	<ol style="list-style-type: none"> 1. Descriptive analysis 2. ANOVA 3. Post-hoc Scheffé and LSD tests 4. Stepwise backward regression
Results	<ol style="list-style-type: none"> 1. Students use learning strategies with a medium to high frequency, with metacognitive strategies ranking highest and memory strategies last. 2. Male students use more social strategies than females, more proficient students use more cognitive, metacognitive and affective strategies than less proficient students, and freshmen use more strategies followed by juniors, then seniors and sophomores. 3. Use of cognitive strategies is the only predictor that distinguishes between high and low proficiency students.
Implication(s)	<ol style="list-style-type: none"> 1. EFL cultural setting may be a factor that determines the type of strategies preferred by learners. 2. It is critically important to provide teachers with the proper training in strategy assessment and instruction.
16. Kamalizad and Jalilzadeh (2011) The Strategy use Frequency of Unsuccessful Malaysian Language Learners and the Effect of Gender on it	
Purpose(s)	To investigate learning strategy frequency use of unsuccessful Form Four secondary students in Malaysia and to find out whether the strategy use frequency of male and female students significantly differ.
Participants	70 Form Four unsuccessful learners of English from one Malaysian secondary school selected purposively, aged from 16 to 17, with 37 males and 33 females.
Instrument(s)	<ol style="list-style-type: none"> 1. SILL (50-item, Version 7.0, for EFL/ESL) (Oxford, 1990) 2. PMR examination, a national examination taken by Form 3 students in Malaysia
Variable(s)	<ol style="list-style-type: none"> 1. Gender 2. Language proficiency
Data Analysis	<ol style="list-style-type: none"> 1. Descriptive analysis 2. T-test

Table 2.2 Research Works on LLSs Conducted in Countries Other than China**(Cont.)**

Results	<ol style="list-style-type: none"> 1. There were effects for four metacognitive strategies predicted significantly beyond chance from differentiated personality types in four learning contexts. 2. Five cognitive strategies showed similarly significant effects with three learning contexts: listening in class, speaking in class and reading. 3. One social-affective strategy showed a significant effect with personality type in two contexts: listening in class, and listening and speaking outside class.
Implication(s)	<ol style="list-style-type: none"> 1. The diversity adds to explanations for why the literature has been equivocal in attempts to specify the personality type most conducive to language learning. 2. It is persuasive for educators who may have abandoned the personality link when considering learning strategy options with their students.
19. Zafari and Biria (2014) The Relationship between Emotional Intelligence and Language Learning Strategy Use	
Purpose(s)	To determine the influence of emotional intelligence on the choice of learning strategies
Participants	100 Iranian EFL students (30 male and 70 female)
Instrument(s)	<ol style="list-style-type: none"> 1. SILL (50-item, Version 7.0, for EFL/ESL learners) (Oxford, 1990) 2. Emotional Quotient Inventory (EQ-i) (Bar-On, 1997) 3. Oxford Placement Test
Variable(s)	Emotional intelligence
Data Analysis	<ol style="list-style-type: none"> 1. ANOVA 2. Linear Regression analysis 3. MANOVA 4. Benferroni test
Results	<ol style="list-style-type: none"> 1. Metacognitive strategy was the most frequently used strategy among Iranian EEL learners, whereas the least preferred strategy was affective strategy. 2. Emotional intelligence is significantly correlated with language learning strategies. Emotionally more intelligent students use more strategies than the emotionally less intelligent students. Significant differences were found among the two groups in the choice of strategies.
Implication(s)	<ol style="list-style-type: none"> 1. It will be the teacher's mission to familiarize students with various learning strategies. 2. Teachers can utilize many techniques which can assist the students to improve their emotional intelligence in language classroom while they are learning a foreign language such as employing ESL games, simulation, and other enjoyable activities.

In summary, Table 2.1 shows some of the available past research works on language learning strategies conducted in countries other than China. These research works range from 1989 to 2014. The above mentioned research works on language

learning strategies demonstrate how the previous researchers conduct their studies. The researchers investigate effects of some variables on language learning strategies, or relationships among language learning strategies, some variables and learners' achievements.

Regarding the participants of the research works in the field of language learning strategies, in terms of language, the participants are either native speakers of English learning foreign language, or learners learning English as a second or foreign language. In terms of educational level, most of them are tertiary-level students, and there are also primary school students, secondary school students, and high school students. In terms of majors mentioned by some researchers, there are English majors and some are non-English majors.

In terms of instruments in the previous research works, few researchers use Strategy Inventory for Language Learning (SILL) (Oxford, 1990) Version 5.1 to explore strategy use of English speakers learning a new language. Most of the researchers just adopt SILL (Oxford, 1990) Version 7.0 to explore strategy use of learners learning English as a second/foreign language. Some researcher also use modified SILL, self-made strategy questionnaire, or language learning strategy inventory by other researcher (e.g. Liyanage, 2004).

Regarding variables, the research works presented here show that the variables have been investigated as follows: gender, language proficiency, education level, course level, nationality, major, age, motivation, tolerance of ambiguity,

culture, students' perceptions of the English language ability level, self-efficacy beliefs, importance of English, strategy awareness, English-learning self-image, type of high schools, language achievements, extra-class support, personality types, and emotional intelligence.

2.5.2 Research on Language Learning Strategies Conducted in China

This session demonstrates some selected research works on language learning strategies conducted in China with Chinese students.

Table 2.2 Research Works on LLSs Conducted in China

1. Wen (1995) Differences of strategy use among successful and unsuccessful EFL learners	
Purpose(s) of Study	To compare differences of strategy use among successful and unsuccessful EFL learners
Participants	2 third-year English majors in one Nanjing university, with almost the same English achievements when entering university, while big difference in CET-4
Instrument(s)	1. Interview 2. Diary 3. English reading practice
Variable(s)	Language proficiency
Data Analysis	Content analysis
Results	Language learning strategies have direct effect on language achievements. Differences in language beliefs and strategies lead to great different achievements.
Implication(s)	Teachers should help students change their inappropriate learning beliefs and train them to use management strategies to control their strategy use appropriately.
2. Yang (1999) The Relationship between EFL Learners' Beliefs and Learning Strategy Use	
Purpose(s)	To investigate the relationship between college students' beliefs about language learning and their use of learning strategies.
Participants	505 university students in Taiwan (non-native speakers) from six public and private universities (194 males and 311 females)
Instrument(s)	1. Beliefs About Language Learning Inventory (BALLI) (Horwitz, 1987) 2. Strategy Inventory for Language Learning (SILL) (Version 7.0, for ESL/EFL learners) (Oxford, 1990)

Table 2.2 Research Works on LLSs Conducted in China (Cont.)

Variable(s)	Beliefs
Data Analysis	1. Descriptive analysis 2. Factor analysis 3. Pearson correlation 4. Content analysis
Results	1. Students' self-efficacy beliefs about learning English were strongly related to their use of all types of learning strategies, especially functional practice strategies. 2. Students' beliefs about the value and nature of learning spoken English were closely linked to the use of formal oral-practice strategies.
Implication(s)	1. Second language instruction as well as strategy training programs should attend to students' beliefs about second language learning, including both metacognitive and motivational beliefs as proposed in this study. 2. By encouraging appropriate beliefs, teachers may enhance effective use of learning strategies and, therefore, further contribute to students' continuing motivation to learn a second language.
3. Zhang (2004) Effects of Tolerance of Ambiguity on the Selection of Language Learning Strategies	
Purpose(s)	To examine effects of tolerance of ambiguity on the selection of foreign language learning strategies.
Participants	138 second-year English-major postgraduates (26 males and 112 females)
Instrument(s)	1. Second Language Tolerance of Ambiguity Scale (Ely, 1995) 2. SILL (Version 7.0, for ESL/EFL learners) (Oxford, 1990)
Variable(s)	Tolerance of ambiguity
Data Analysis	1. Descriptive analysis 2. Pearson correlation
Results	Students with high and low level of tolerance of ambiguity select language learning strategies in different ways. The former tend to select strategies appropriately and use them effectively in tackling language tasks, while the latter usually would not tolerate any ambiguous language input and use their strategies aimlessly and randomly.
Implication(s)	Teachers should guide students to tolerate new knowledge or cultures appropriately according to learners' individual differences to improve such scale and use strategies appropriately.
4. Chang, Liu and Lee (2007) A Study of Language Learning Strategies Used by College EFL Learners in Taiwan	
Purpose(s)	To investigate the influence of gender and major on college EFL learning strategy use in Taiwan.
Participants	1758 EFL college non-English majors in Taiwan
Instrument(s)	SILL(50-item, Version 7.0, for EFL/ESL) (Oxford, 1989)
Variable(s)	1. Course level 2.Nationality 3. Sex 4.Age

Table 2.2 Research Works on LLSs Conducted in China (Cont.)

Data Analysis	1.Descriptive analysis (frequencies, means, standard deviations, percentages) 2. T-test 3. One-way ANOVA
Results	1. There is not a great difference among the frequency of each strategy that Taiwanese college EFL learners report using, all in medium-use level. 2. Statistically significant differences are found in the use of cognitive strategies, metacognitive strategies, social strategies and overall strategies with regard to gender, and in the use of six subcategories of language learning strategies and overall strategies with regard to major.
Implication(s)	EFL teachers should deliver importance of using strategies in the process of language learning to their students and help them cultivate and raise their awareness of language learning strategies.
5. Yang (2007) Language Learning Strategies for Junior College Students in Taiwan: Investigating Ethnicity and Proficiency	
Purpose(s)	To investigate effects of ethnicity and language proficiency on the use of language learning strategies by junior college students.
Participants	461 female nursing majors (165 aboriginal students and 296 non-aboriginal) from 10 2nd-year classes at Chang Gung Institute of Technology
Instrument(s)	1.Proficiency test (curriculum-specific achievement tests) 2. Modified SILL(50-item, Version 7.0, for EFL/ESL) (Oxford, 1990)
Variable(s)	1. Ethnicity 2.Language proficiency
Data Analysis	1.Descriptive analysis (means and standard deviations) 2. Two-way ANOVA 3. Scheffe post hoc test
Results	1. Ethnicity plays a significant role in the selection of language learning strategies. 2. Language proficiency influences learners' use of strategies. More proficient students report using strategies more often than less proficient students.
Implication(s)	Understanding students' strategy use may enable EFL teachers to incorporate strategy training in English lessons at junior college levels and ultimately improve students' English language skills.
6. Wu (2008) Language Learning Strategies Used by Students at Different Proficiency Levels	
Purpose(s) of Study	To investigate differences of language learning strategy use between higher and lower proficiency EFL students.
Participants	49 English-major sophomores and 88 non-English-major freshmen from National Chin-Yi University of Technology in Taiwan

Table 2.2 Research Works on LLSs Conducted in China (Cont.)

Instrument(s)	1.SILL(50-item, Version 7.0, for EFL/ESL) (Oxford, 1989) 2. GEPT (General English Proficiency Test)
Variable(s)	Language proficiency
Data Analysis	1. Independent samples t-test 2. Multiple regression analysis
Results	1. Both higher and lower proficiency EFL students use compensation strategies more often than other strategies. 2. Higher proficiency EFL students use language learning strategies more often than lower proficiency EFL students. 3. Cognitive strategies have the strongest relation to English proficiency and greater effect on listening and reading proficiency.
Implication(s)	1. Teachers should become more aware of students' learning strategies in order to orient teaching methods more appropriately. 2. Future research should focus on methods to integrate strategy training into language instruction, discovering other strategies other than the six types.
7. Ni, Monta, and Adisa (2008) A Deep Look into Learning Strategy Use by Successful and Unsuccessful Students in the Chinese EFL Learning Context	
Purpose(s) of Study	To investigate differences of strategy use by successful and unsuccessful first-year students of a Chinese university.
Participants	92 successful and 92 unsuccessful subjects out of 341 freshmen in Southwest University of Political Science and Law in China
Instrument(s)	1. Proficiency test: Nation-Wide College-Entrance Test for English 2.Modified strategy questionnaire based on Oxford's (1989) SILL (Version 7.0, for EFL/ESL learners) and Wen's questionnaire (1995)
Variable(s)	Language proficiency
Data Analysis	1. Pearson Correlation 2. Independent-samples t-test
Results	1. Successful students use a wider range of learning strategies for EFL learning significantly more frequently than unsuccessful students. 2. Strategies often employed by the successful students are different from those often preferred by their unsuccessful peers.
Implication(s)	1. A combination of methods is necessary to develop multifaceted insights into language strategy use and provide a clearer picture of the process of language teaching and learning. 2. Further research should be conducted to address the world question of what the relationship is between the use of learning strategies and proficiency.

Table 2.2 Research Works on LLSs Conducted in China (Cont.)

8. Yu and Wang (2009) A Study of Language Learning Strategy Use in the Context of EFL Curriculum and Pedagogy Reform in China	
Purpose(s)	To investigate language learning strategies use of Chinese EFL learners in junior secondary schools from a socio-cultural theory perspective.
Participants	278 EFL learners from three junior secondary schools in Northeast China
Instrument(s)	1. SILL (50-item, Version 7.0, for EFL/ESL) 2. Interview
Variable(s)	1. Language achievements 2. Socio-contextual factors (learning context, classroom practice, and assessment method)
Data Analysis	1. Descriptive analysis (mean and standard deviation) 2. Correlation analysis 3. Multiple regression 4. Coding
Results	1. Chinese secondary school learners use memory and cognitive strategies more frequently and affective and social strategies least frequently. 2. Memory, compensation, cognitive and metacognitive strategies are found to have a significant correlation with the learners' English achievements, while only cognitive and metacognitive strategies significantly predict their achievements. 3. Specific learning context, teaching method and assessment method of the Chinese classrooms have a significant negative impact upon their strategy preferences.
Implication(s)	It is recommended that classroom teaching be communication-oriented and student-centered in the implementation of the new English curriculum and pedagogy standards in China.
9. Zhou (2010) English Language Learning Strategy Use by Chinese Senior High School Students.	
Purpose(s)	To examine language learning strategy use by senior high school students in China.
Participants	150 senior high school students (51 in Grade 1, 49 Grade 2 and 50 Grade 3, with 76 males and 74 females)
Instrument(s)	Modified SILL (50-item, Version 7.0, for EFL/ESL) (Oxford, 1990)
Variable(s)	1. Gender 2. Grade
Data Analysis	1. Descriptive analysis (means and standard deviations) 2. Independent-samples t-test 3. Correlation analysis
Results	1. Chinese senior high school students use compensation strategies most and social strategies least. 2. Female students use strategies more frequently than male students. 3. Higher grade students use less frequently language learning strategies than lower grade students.

Table 2.2 Research Works on LLSs Conducted in China (Cont.)

Implication(s)	<ol style="list-style-type: none"> 1. It is important and helpful to acknowledge and enhance students' awareness of strategy use in accordance with their levels of motivation. 2. Audio and visual teaching materials may be effective tools for stimulating learners at different proficiency levels. 3. English inputs and oral practice opportunities are essential for high proficiency students.
12. Tam (2013) A Study on Language Learning Strategies of University Students in Hong Kong	
Purpose(s)	To investigate the relationship between gender, second language proficiency, socioeconomic status, and language learning strategies
Participants	50 first year university students from the Hong Kong Polytechnic University
Instrument(s)	<ol style="list-style-type: none"> 1. SILL (50-item, Version 7.0, for EFL/ESL) (Oxford, 1990) 2. Use of English (UE) Examination
Variable(s)	1. Gender 2. Language proficiency 3. Socioeconomic status
Data Analysis	1. Descriptive analysis 2. ANOVA 3. Correlation analysis
Results	<ol style="list-style-type: none"> 1. Males and females had a significant difference in using Memory, Compensation, Cognitive, Metacognitive, and Social Strategies to learn English, with females using strategies more frequently than males. 2. A positive correlation was found between Compensation, Cognitive, and Social Strategies and the users' language proficiency. 3. Socioeconomic status would greatly influence local university students' use of Social Strategies.
Implication(s)	Education providers should be aware that students with different gender, socioeconomic status, language proficiency, etc. behave differently when learning English, which should be taken into consideration when designing training programs on language learning strategies.
13. Han (2013) Language Learning Strategies by Non-English Major Undergraduates	
Purpose(s)	To explore the effects of gender, major, language proficiency on language learning strategies
Participants	122 non-English major undergraduates at Peking Normal University (72 effective learners and 50 ineffective learners)
Instrument(s)	SILL (50-item, Version 7.0, for EFL/ESL) (Oxford, 1990)
Variable(s)	1. Gender 2. Major 3. Language Proficiency
Data Analysis	ANOVA

Table 2.2 Research Works on LLSs Conducted in China (Cont.)

Results	<ol style="list-style-type: none"> 1. The most frequently used strategies are compensation strategy, affective strategy and memory strategy. 2. There are significant differences in strategy choice by effective learners and ineffective learners. 3. Significant differences exist in memory strategy and compensation strategy by gender.
Implication(s)	Teachers should help students use strategies appropriately, form right belief on language learning, and become confident to learn English well.

In summary, Table 2.2 has shown some of the available past research works on language learning strategies conducted in China. These research works range from 1995 to 2013. The above mentioned research works demonstrate how the previous researchers conducted their studies. With regard to the study purposes, the researchers mainly explore the language learning strategy use by language learners, investigate some variables' effects on language learning strategies, and investigate the relationships between language learning strategies and learners' achievements or the relationships between language learning strategies and some other variables.

Regarding the participants of the mentioned research works, in terms of language, the participants are learners learning English as a foreign language in the Mainland of China or learners learning English as a second language in Hong Kong and Taiwan. In terms of educational level, most of them are tertiary-level students; a few of them are junior secondary schools students and senior high school students. In terms of major, there are English majors and non-English majors.

As we can see, there are various types of participants investigated in previous studies in China. Though there are research works on English majors, there are few studies on English-major pre-service teachers in China, who are undergraduates now, and will be English teachers in the future.

With regard to the instruments for LLS research, in the previous research works, most of the researchers adopt or modify Strategy Inventory for Language Learning (SILL) (Oxford, 1990), Version 7.0, to explore strategy use of learners learning English as a second/foreign language, only a few researchers use strategy questionnaire by Wong & Nunan (2011), or use other instruments such as interview, diary and so on.

From the above previous research works, we can see that all the Chinese researchers who adopted or modified Oxford's (1990) SILL as their instruments just followed her six categories of LLSs: memory strategies, cognitive strategies, compensation strategies, metacognitive strategies, affective strategies and social strategies.

In terms of the variables, many variables have been investigated. These include language proficiency, gender, beliefs, tolerance of ambiguity, course level, nationality, age, ethnicity language achievements, learning context, classroom practice, assessment method, grade, learning style, enjoyment of learning English, area of academic specialization, self-rating of language ability, amount of time spent outside of class, motivation, major, and socioeconomic status, among which gender and language proficiency have been frequently taken into consideration. However, there were still only a few studies concerning such variables as enjoyment of English learning, strategy awareness, and personality types in Chinese context. For the scales of personality types, although there were some studies on extroversion and introversion, no previous research focused on judging and perceiving scale.

2.6 Summary

In order to provide an overall picture of literature review, this chapter has presented some related literatures with regard to language learning strategies. It illustrates the theories related to language learning strategies: cognitive learning theory and social-cognitive theory, puts forward the researcher's workable definition and specific characteristics of language learning strategies after listing and comparing many previous definitions, gives descriptions of the classification systems of language learning strategies, and presents some previous typical studies on language learning strategies in countries other than China and studies in China, all of which provides comprehensive and clear understanding of language learning strategy employment by EFL learners. The next chapter is intended to focus on the research methodology of the present study.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 Introduction

The purpose of this chapter is to discuss the research methodology for the present study. It starts off with the background of research methodology, research methods in language learning strategy research, and main research methods for the present study. This is followed by the theoretical framework and variables selected for the present study. Research questions, participants, and data collection instruments for the present study are then presented. Finally, it deals with how the data will be obtained, analyzed and interpreted.

According to Cohen and Manion (2002), research purposes are important for researchers to consider before setting a research design. Robson (1993, 2002) points out that the purposes of research work may help researchers select the research methods used. He proposes his classifications of the purposes of research work into three categories: exploratory, descriptive and explanatory. The exploratory type is to find out what are happening to seek new insights, ask questions, or assess phenomena in a new light, which is usually, but not necessarily, qualitative. The descriptive type aims to discover, quantify and describe fact about some group of people and situation, which can be qualitative and/or quantitative. The explanatory type tries to discover why things happen in the way they do, which can be qualitative and/or quantitative (Robson, 2002). The purposes of research work can possibly be a combination of two or all of these purposes, but often one will predominate.

Research design is a basic and systematic plan of research (Punch, 2005), which is influenced and determined by the research purpose and research questions (Robson, 2002; Cohen & Manion, 2002). According to Seliger and Shohamy (1989), without a coherent research design, it is impossible to have a good plan for researching a question, but to have many possible plans and different research types. Therefore, when constructing an investigation, the researcher must consider first which types of primary research is most appropriate given the purposes of the research work. With regard to the types of research, Robson (1993) has proposed three types of research as follows:

- Case studies

They are appropriate for exploratory work with ‘how’ and ‘why’ type of research questions, usually used for developing detailed, intensive knowledge about a single case or of a small number of related cases.

- Survey studies

They are appropriate for descriptive studies with the ‘who, what, where, how many and how much’ type of research questions, used for collecting information in standardized form from groups of people, usually employing questionnaires or interviews.

- Experimental studies

They are appropriate for explanatory studies with the ‘how and why’ type of research questions, used to measure the effects of manipulating one variable on another variable as well.

Since the purpose of the present study is to investigate language learning strategies reported being employed by English-major pre-service teachers in the

Midwest of China, the most appropriate research type should be a survey study. According to the characteristics of research purposes mentioned above, the present study can be classified as exploratory, descriptive and explanatory. The research is basically both quantitative and qualitative, and quantitative research predominates.

3.2 Research Methods in Language Learning Strategy Studies

As Robson (1993) notes, research method is a critical part to control the whole research process when conducting a research. There are many ways which a researcher can use to gather data on what learners reportedly use and also on how LLSs are employed by language learners. In the subsequent section, the main research methods or procedures used to gather data on LLSs are discussed to constitute a framework of methods for data collection. The main research methods include: 1) Questionnaires; 2) Interviews; 3) Think-aloud Protocols; 4) Classroom Observations; and 5) Diary Studies. To date, no single research method in the field has been reported as the perfect method. Research methods which researchers use are to investigate how strategies are employed by language learners in order to cope with language problems, or to enhance their language learning. Each method has both weak and strong points, but whatever method a researcher employs, he or she must take the main purpose of the study into consideration (Robson, 1993).

3.2.1 Questionnaires

The most frequent and efficient method for identifying students' LLSs is through questionnaires, which rely on written information supplied directly by those in response to questions asked by the researcher (Denscombe, 1998). They are used to elicit learners' responses to a set of questions, and they require the researcher to make

choices regarding question format and research procedures (Cohen & Scott, 1996). A questionnaire enables the researcher to collect data in field settings, and the data themselves are more amenable to quantification than discursive data such as free-form fieldnotes, participant observers' journals, the transcripts of oral language (Nunan, 1992). Oxford and Crookall (1989) suggest that questionnaires typically cover a range of LLSs and are usually structured and objective (closed) in nature. 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 LLSs they employ in detail. They are also almost non-threatening when administered using paper and pencil under conditions of confidentiality (Oxford & Burry-Stock, 1995).

However, there are a few weak points with questionnaire. The data may be superficial. There is little or no check on honesty or seriousness of responses. Students may not remember the strategies they have used in the past, claim to use strategies that in fact they do not use, or not understand the strategy descriptions in the questionnaire items. This may be a challenge for a novice researcher with regard to his/her own ability to deal with such limitations. In addition, it is time-consuming, and the interpretation can be problematic (Walker, 1985; Robson, 1993).

3.2.2 Interviews

The interview is one of the main data collection tools in qualitative research and 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 to gather useful information for the study. Ellis (1994) states

that interview is an instrument used to investigate students' LLSs by asking them to explain and describe what strategies they use and how they use them when dealing with language learning.

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, which makes the direction of the interview relatively unpredictable. 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, but without a list of predetermined questions. While 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 favored by many researchers, particularly those working within an interpretative research tradition. The reason for its popularity is its flexibility and it can give the interviewee a degree of power and control over the course of the interview (Nunan, 1992). While it also has some disadvantages that its flexibility calls for skill and experience in the interviewer, the lack of standardization raises concerns about reliability, biases are difficult to rule out, and the interview may be time-consuming (Robson, 1993).

3.2.3 Think-aloud Protocols

Matsumoto (1993, p. 34) defines think-aloud protocol as ‘a verbal-report method of producing concurrent verbalization; think-aloud procedures ask subjects/informants to tell researchers what they are thinking and doing (while performing a task’. Methods of thinking aloud have been used mainly to investigate the processes of translation and communication in a foreign language (Feldmann & Stemmer, 1987). Some researchers use this method to investigate learners’ LLS use, i.e. the researcher listens to learners as they think aloud.

Think-aloud protocols have both merits and shortcomings (Faerch & Kasper, 1987). The indisputable merit of introspective data is that there is no other way to access learners’ ongoing thoughts and perceptions while doing a language task, leaving researchers to only speculate about learners’ mental activities. The shortcomings result from the fact that introspective data may be unreliable, as learners vary in their ability both to introspect and to report their thoughts. They also vary in their willingness to do so (Paribakht & Wesche, 1999). In addition, Oxford (1990) points out that this method is basically used with one-to-one, taking a great deal of time to reflect strategies related to the task at hand, and learners may not have time to look back on the task and evaluate their performance when the task is completed.

3.2.4 Classroom Observations

Classroom observation is an important tool in social sciences (Atkinson & Hammersly, 2003), as observations are easy to use in the classroom and they can be conducted either formally or informally (Oxford & Burry-Stock, 1995). Some researchers in the field of LLS study have found that classmate observation can identify some LLSs (e.g. Rubin, 1981; Ellis, 1994; Chamot, 2001).

There are some critics or doubts on the usefulness and effectiveness of this method. Rubin (1981) declares that classroom observation is not very productive, as it reveals nothing about the mental strategies learners use, and because frequently classroom teachers afford little opportunity for learners to exercise behavioral strategies. Cohen and Apek (1981) and Graham (1997) also find that this method is inadequate to provide much information about LLSs that learners employ. However, Chesterfield and Chesterfield (1985) report in a study revealing a number of learning strategies used in a bilingual classroom by young learners, and Ellis (1994) points out that classroom observation works well with young language learners whose behavior serves as a good indicator of their mental activity. Therefore, this method is still fruitful and workable in language learning strategy studies at the present time.

3.2.5 Diary Studies

According to Robson (2002, p. 258), a diary is ‘a kind of self-administered questionnaire’. Bailey (1990, p. 215) defines it as ‘a first-person account of a language learning or teaching experience, documented through regular, candid entries in a personal journal and then analyzed for recurring patterns or salient events’. Porter et. al. (1990) point out that, in pedagogical perspective, a diary is a valuable pedagogical instrument. In an effort to collect data on LLSs employed by students over a period of time, some researchers have turned to diaries as a research tool (Cohen & Scott, 1996).

Learners’ written reports of the cognitive, meta-cognitive, and social strategies they use daily in language learning can be generated since diaries are learner-generated and usually unstructured, and the entries may cover a wide range of themes and issues (Cohen & Scott, 1996). However, diaries are usually subjective or

open-ended, requiring a student's constructed responses and free-form although they can be guided by teacher suggestions (Oxford & Crookall, 1989). Bailey and Ochsner (1983) suggest ways to shape diary studies to make them suitable as research documents. In addition, diary studies may be highly problematic for a researcher because learners may be unfamiliar with diaries, which language should be used when the researcher and learners may not share the same language, and learners may want a 'reward' for the effort, e. g. feedback from the researcher.

To sum up, no single research method has been reported as the perfect method. 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, as stated by Creswell (2003, p. 12), "individual researchers have a freedom of choice. They are 'free' to choose the methods, techniques and procedures or research that best suit their needs and purposes."

Since the present investigation aims to explore frequency of LLS use which English-major pre-service teachers in Midwest China report employing, and why they report using some strategies frequently and some strategies infrequently, the study is both quantitative and qualitative in nature. After having considered the advantages and disadvantages of all the research methods listed above, the researcher decided to use questionnaires and semi-structured interviews as instruments for data collection for the present study. The questionnaire, which is suitable for large scale survey research, helps to provide information on frequency of LLS use and on the five independent variables under consideration; and the semi-structured interview gives in-depth information on the reasons for frequent or infrequent use of certain LLSs.

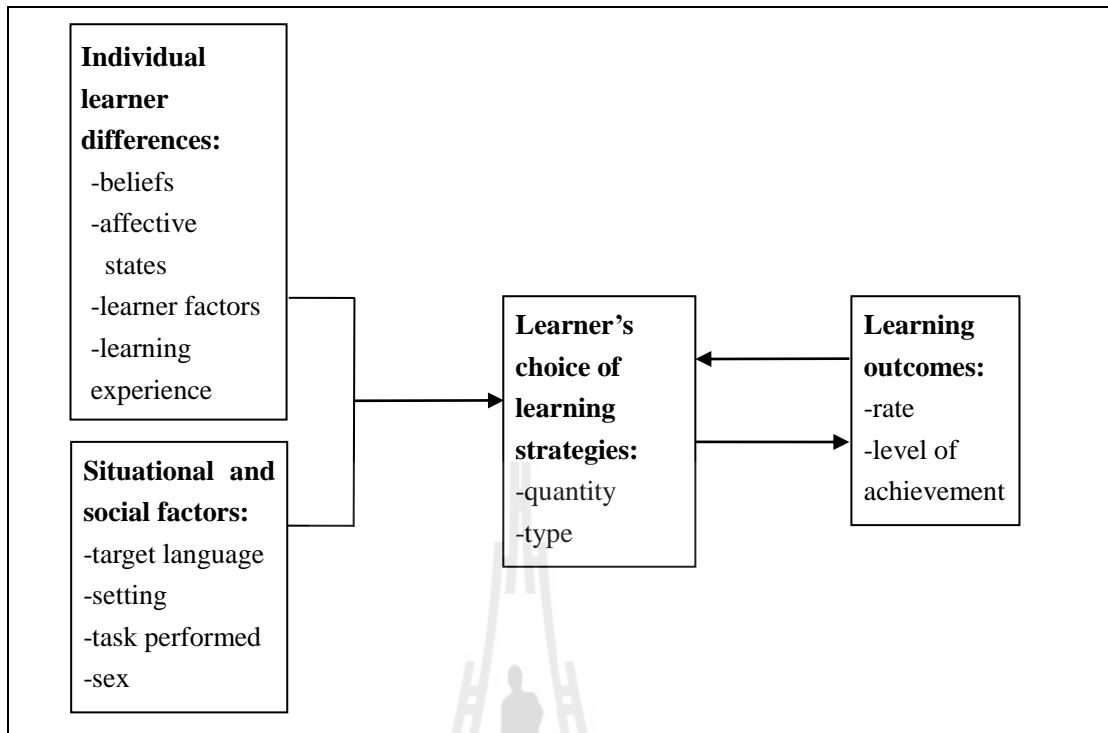
3.3 Theoretical Framework and Selected Variables for the Present

Study

3.3.1 Theoretical Framework

The main purpose of the literature review on LLSs in Chapter 2 is to find evidence which would help the researcher develop a theoretical framework to locate the present study in the context of past research. As suggested by Intaraprasert (2000), the review of the related research works, literature, and other materials in the involved field of research is helpful for developing the theoretical framework, locating the present study in the context of past research works and other researchers' ideas, and creating the rationale for selecting and rejecting variables for the present study. Therefore, this section intends to develop the theoretical framework and select variables for the present investigation based on the related literature review of LLSs.

Before discussing the theoretical framework for the present study, the theoretical framework of the empirical past research works in the area of LLSs proposed by Ellis (1994, p. 530) are presented as follows:



(Source: Ellis, 1994, p. 530)

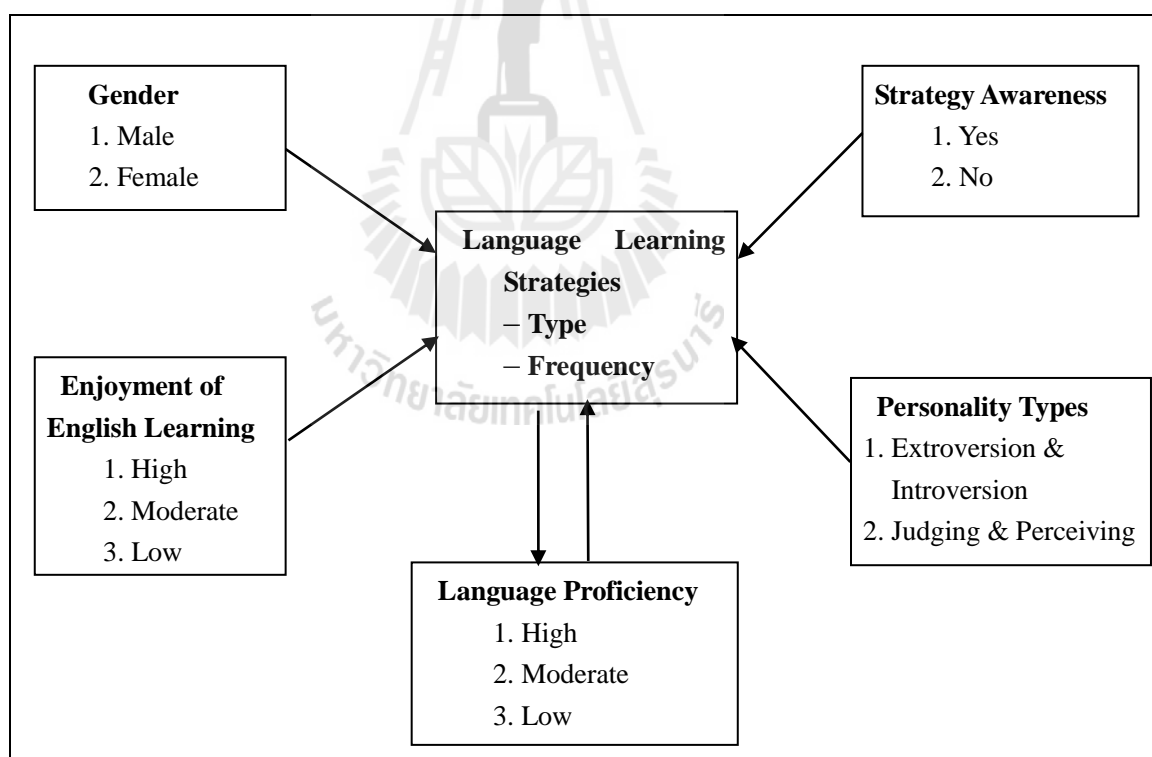
Figure 3.1 The Relationship between Individual Learner Differences, Situational Factors, Learning Strategies, and Learning outcomes

Based on the theoretical framework proposed by Ellis (1994, p. 530) (Figure 3.1), quantity and type of LLSs have been considered to be influenced by two major categories of variables: 1) individual learner differences, such as beliefs, affective states, learner factors and learning experience; and 2) situational and social factors, such as target language, setting, task performance, and sex. This influence is single-directional relationship. Meanwhile, the quantity and type of LLSs have been considered to be in a bi-directional relationship with learners' learning outcomes, which means that learners' choices of LLSs have effects on learners' learning outcomes from the angles of the ultimate level of achievement, or their language proficiency levels can also have effects on their choice of strategies.

The review of research work on the areas of LLSs reveals that there are a variety of variables which are related to learners' use of LLSs, and some of these have been investigated by researchers, such as some individual learner differences and situational and social factors listed in the above Figure 3.1.

Regarding the present research context, five variables, i.e. learners' gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types were investigated in order to examine whether any of these variables are related to LLS choices by English-major pre-service teachers in Midwest China.

Figure 3.2 below shows the theoretical framework for the present study.



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

Figure 3.2 Theoretical Framework for the Present Study

The theoretical framework for the present study is based on the theoretical framework in Figure 3.1 by Ellis (1994), with the aim to give a clear picture of the relationship between LLSs and the five chosen variables. Specifically, choice of LLSs have been predictably hypothesized to be influenced by pre-service teachers' gender, language proficiency, enjoyment of English learning, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale, among which, language proficiency have been considered to have bi-directional relationship with LLS use.

What follows is a discussion of the above basic assumption based on the literature review, and the reasons why the researcher has chosen the five variables as independent variables for the present study.

3.3.2 Selected Variables

3.3.2.1 Gender

According to Ellis (1994), learners' gender is one of the factors which may influence their choices of strategy use to learn a foreign/second language. Males and females have their own ways of using strategies to learn a foreign/second language (Intaraprasert, 2000). Some studies have discovered distinct gender differences in LLS use (e.g. Oxford & Nyikos, 1989; Green & Oxford, 1995; Sheorey, 1999; Hong-Nam & Leavell, 2006; Kyungsim & Leavell, 2006; Ghee, Ismail & Kabilan, 2010; Radwan, 2011).

However, other studies have failed to discover any evidence of differing LLSs used between different genders. The examples are as follows: Wharton (2000) finds no statistically significant gender effect in the reported strategies used by bilingual college students in Singapore. Intaraprasert's (2000) study reveals no strong

relationship between gender of students and their choices of strategy use. Shmais (2003) does not report any differences in strategy use among university-level students as a result of gender difference. Tahriri and Divsar (2011) explore the strategy use of Iranian EFL learners and the possible influence of their gender on their reported strategy use, and find no differences in this respect, either.

Therefore, we can see that the previous studies investigating effects of gender on LLSs have produced mixed results. There is a need to investigate gender differences in the use of LLSs of language learners, specifically, English-major pre-service teachers in Midwest China in the present study.

3.3.2.2 Enjoyment of English Learning

A link between enjoyment and learning is a longstanding hypothesis (Jacky, 2011). Griffin (2005) insists that learning should be fun, utilizing a ‘pedagogy of enjoyment’. Students’ lack of enjoyment of learning has been mooted as a cause of multiple failures in education. Lack of enjoyment is, therefore, implied to be a cause of failure to learn. According to Jacky (2011), learning is contingent on a willingness to engage and to persist, and this will not be forthcoming unless the learning task is assessed as potentially enjoyable, resulting in motivation to start, and experienced as enjoyable, resulting in persistence.

Several studies have been concerned with the effects of enjoyment of English learning on LLS use. Mochizuki’s (1999) study shows that enjoyment of English learning influences the choice of strategies. Wong and Nunan’s (2011) study shows that the aspect of enjoyment of learning English reveals a significant difference between more and less effective students.

In the Chinese context, Rao (2008) examined the the strategy use of a group of non-English majors in a university in terms of enjoyment of English learning. The results revealed that enjoyment of English learning exhibited a significant effect on frequency of overall strategy use across the entire SILL. Students who enjoyed English learning reported using strategies significantly more frequently than those who did not enjoy English learning. However, there are still very few studies on the effects of enjoyment of English learning on learners' strategy use. Therefore, there is significance to examine LLS use by English-major pre-service teachers in Midwest China in terms of this variable.

3.3.2.3 Language Proficiency

Language learning strategy research has consistently established a positive link between language proficiency and strategy use, suggesting that more proficient learners usually use more strategies than less proficient learners (Radwan, 2011). There are many examples to support this. For example, Wharton's (2000) study shows that students with good and fair proficiency use strategies more often than those of poor proficiency. Gerami and Baighlou (2011) indicate that successful EFL students use a wider range of learning strategies and are different from those often preferred by their unsuccessful peers by examining the application of language learning strategies by successful and unsuccessful Iranian EFL students, with the former often using metacognitive strategies and the latter tending to use surface level cognitive strategies.

However, Hong-Nam and Leavell (2006) comes to a conclusion that there is a curvilinear relationship between language learning strategy use and English proficiency after investigating the overall language learning strategy use of 55 ESL

students enrolled in a college Intensive English Program. The result shows that students in the intermediate level report more use of strategies than beginning and advanced levels. Magogwe and Oliver (2007) also claim that the relationship between strategy use and language proficiency is a rather curvilinear one, where proficiency influences strategy use at the primary level but not at the secondary or the tertiary level by examining language learning strategy use of 480 Botswana students, although their research also reveals a trend in strategy use consistent with previous research, i.e. overall strategy use increases with proficiency.

In addition, with respect to language learning strategy categories, there is some contradiction of the results of the relationship between different strategy categories and different levels of learners' language proficiency. Some studies conducted by some researchers have given evidence to this as follows: Ehrman and Oxford (1995) find that only cognitive strategies have a significant relationship with language proficiency in the SILL category. Peacock and Ho (2003) find that many cognitive and metacognitive strategies are significantly and positively associated with proficiency by using the SILL and semi-structured interviews with 1,000 Chinese EFL students in Hong Kong. Shmais (2003) reveals that students with high proficiency differ from less proficient learners in their use of cognitive strategies. Lan and Oxford (2003) find significant effects for language proficiency on metacognitive, cognitive, compensatory and affective strategies employed by Taiwanese elementary school EFL learners. Wu's (2008) study finds that there are significant differences in the use of cognitive, metacognitive and social strategies between higher and lower proficiency EFL students. Radwan (2011) reveals that more proficient students used more cognitive, metacognitive and affective strategies than less proficient students by

exploring the relationship between the use of language learning strategies and language proficiency by English majors at Sultan Qaboos University in Oman.

As illustrated above, the research results of the relationship between learners' language proficiency and language learning strategy use are still complex, without agreements on many points. Therefore, it is interesting to go further exploring this relationship, especially the relationship for the special subjects in the present study – English-major pre-service teachers in Mid-west China, who are seldom investigated in the specific field till now.

3.3.2.4 Strategy Awareness

Some investigators have agreed that awareness helps students learn a language and use strategies in the earlier stages of learning (Oxford, 1990; O'Malley & Chamot, 1990; Oxford & Cohen, 1992; Cohen, 1995; Chamot, 1998). According to Cohen (1995), when students are no longer aware of their behaviors to learn a language, these behaviors are, by definition, no longer strategies but are instead processes; thus, he emphasizes the importance of strategy awareness. Chamot (1998) finds that awareness of one's own strategies is closely related to metacognition, and more successful learners have better and more metacognitive awareness. Carrell, Gajdusek and Wise (1998) also emphasize the importance of strategy awareness. Lee and Oxford (2008) claim that strategy awareness has a significant effect on strategy use, students who are already aware of many language learning strategies employ strategies more frequently than those who are not, and strategy awareness is one of the best predictors of strategy use, which would ultimately help teachers teach students how to promote strategy use and how to use strategies properly.

As Pressley et. al. (1989) note, the learner can actively transfer a given strategy to a new learning situation only when the strategy is in awareness, i.e., when the learner has metacognitive knowledge of the strategy. However, Baker and Brown (1984) point out that there is not a perfect connection between strategy use and strategy awareness. It implies that the role of awareness in strategy use is complex, as Lee and Oxford (2008, p.25) put forward: “A strategy might fade from awareness by becoming automatic and habitual, at which time it is called a non-strategic ‘process’; but it can be brought back into consciousness (as a strategy) through direct instruction, reflection, or discussion.” Anyway, one thing is certain that the learner can actively transfer a given strategy to a new learning situation only when the strategy is in awareness, i.e., when the learner has metacognitive knowledge of the strategy (Pressley et al., 1989).

From this above point of view, there is a need to do further research on the effects of strategy awareness on language learning strategies. Therefore, one of the purposes of the current study is to investigate the effects of strategy awareness on language learning strategies employed by English-major pre-service teachers in Midwest China, which is seldom investigated in previous related studies in China.

3.3.2.5 Personality Types

According to many language teachers, the personality of their students constitutes a major factor contributing to success or failure in language learning (Ellis, 1994). Since 1990s, there has been a growing interest on how personality correlates to the academic performance (Dörnyei, 2005). Some previous studies have shown evidence of significant relationships between personality types and language learning strategies (e.g. Ehrman & Oxford, 1990; Ellis, 1994; Oxford & Ehrman, 1995;

Wakamoto, 2000; Liyange, 2004; Li & Qin, 2006; Sharp, 2008). Several studies have attempted to identify the personality correlates to academic achievement (Chamorro-Premuzic & Furnham, 2003; Farsides & Woodfield, 2003; Lounsbury et al., 2003). It is shown that successful language learners choose language learning strategies suitable for their personalities (Oxford & Nyikos, 1989).

Ehrman and Oxford (1989) examined the relationships between personality types and language learning strategies of 78 subjects at the Foreign Service Institute, and found that certain personality types are positively related to their preference in learning strategies. Extroverts prefer to use affective strategies and visualization strategies and introverts prefer to use strategies for searching for and communicating meaning. Judgers also employed general strategies more frequently than perceivers, and perceivers more frequently used strategies for searching for and communicating meaning. Ehrman and Oxford (1990) confirmed that specific personality types affect the selection of language learning strategies. Wakamoto (2000) examined the relationships between personality types, focusing on extroversion and introversion, and language learning strategies of 254 Japanese junior college students majoring in English. Extroversion was found to significantly positively correlated to functional practice strategies and social-affective strategies; specifically, there was a significant difference in using functional practice and social-affective strategies between extraverted and introverted students. Liyanage (2004) investigated the relationships between LLSs and personality type of 948 ESL students, and found that four personality types affect the choice of metacognitive, cognitive, and social affective strategies.

However, there are also some studies, which have failed to find relationships between personality and strategy use. Conti and Kolody (1999) examined the relationships between personality types and learning strategy preference of 553 adults, while they did not find any significant relationship between learning preference and personality types. Sharp (2008) examined the relationships among personality types, LLSs and proficiency of 100 college students majoring in English language and literature in Hong Kong, and did not find any significant relationships among them as well.

As illustrated above, the research results of the studies on relationship between learners' personality types and LLS use are still complex, without agreements on many points. Therefore, it is interesting to go further exploring this relationship. In another aspect, Li and Qin (2006) found that personality types have a significant influence on learners' strategy choices; of the 4 pairs of MBTI scales, judging-perceiving correlates positively with the biggest number of learning strategies, thus turning out to be the most influential scale affecting learners' learning strategy choices; extroversion-introversion is associated positively with four sets of learning strategies, only second to judging-perceiving scale.

Though some researchers have investigated the relationship of personality types and learners' LLS use, they could not reach an agreement on the results. Among the 4 scales of personality types, the most researched personality aspect in language studies has been the extroversion-introversion dimension (Dörnyei, 2005), while no study focuses on the judging-perceiving. In addition, Li and Qin (2006) claimed that judging is the more influential personality type affecting the use of LLSs. Therefore, it is interesting and significant for the researcher to go on

exploring the effects of the extroversion-introversion scale and judging-perceiving scale on LLS use, especially strategy use by English-major pre-service teachers in China, which has never been investigated. Therefore, personality types: extroversion-introversion and judging-perceiving were chosen as the independent variable for the present study.

3.4 Research Questions

The present investigation attempts to explore the language learning strategies employed by English-major pre-service teachers in Midwest of China. The research questions are generated based on the research objectives, the review of the past research works and the proposed relationship between pre-service teachers' use of language learning strategies with the five selected variables mentioned earlier. To be more specific, the investigation is designed to answer the following four research questions:

(1) What is the frequency of language learning strategy use employed by English-major pre-service teachers in Midwest China at different levels, i.e. overall, category and individuals?

(2) Do their choices of language learning strategies vary significantly according to the five variables, namely, their gender, enjoyment of learning English, language proficiency, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale? If they do, what are the main patterns of variation?

(3) What are the main underlying factors in their language learning strategy use employed by English-major pre-service teachers in Midwest China? Are there any

factors strongly related to the five variables? If so, what are they?

(4) Why do they report employing certain strategies frequently and certain strategies infrequently?

3.5 Participants for the Present Study

3.5.1 Sampling Methods and Rationales for Choice of Participants

According to Robson (2002), the sample is a part of population. Dörnyei (2003) defines 'sample' as 'the group of people or subset of the population which is representative of the whole population'. As Miles and Huberman (1994, p. 27) state that 'you cannot study everyone everywhere doing everything', selecting sample for the research is important since it will be generalized to the population of the study.

In order to generalize from the findings of a survey, the sample must not only be carefully selected to be representative of the population, but also it needs to include a sufficient number (Denscombe, 2003). Cohen and Manion (1994) posit that the correct sample size depends on the purpose of the study and the nature of the population under scrutiny. Locke, Silverman and Spirduso (1998) propose that the sample size should not be too big or too small, but should be reasonable to believe that the results of the research would hold for any situation or group of people. Bell (1999) also states that the number of subjects in an investigation necessarily depends on the amount of time the researcher has.

Dörnyei (2003) points out that a good sample should be similar to the target language population in general characteristics such as age, gender, ethnicity, educational background, academic capability, social class, socioeconomic status, etc. Therefore, it is imperative for the researcher of the present investigation to select the

appropriate sampling method so as to yield accurate results. The main purpose of the present study is to explore and describe the variations in the use of language learning strategies employed by English-major pre-service teachers in the Midwest of China. In relation to the research objectives and research questions, the researcher decided to select the participants by cluster sampling and purposive sampling methods.

The participants for the present study were junior English-major pre-service teachers in the Midwest of China. All of them have taken part in the national English proficiency test: Test for English Majors – Grade Four (TEM-4) and have got the results. The scores of TEM-4 have been taken as the criteria of determining participants' different levels of language proficiency. The researcher used cluster sampling, purposive sampling and convenience sampling methods to select the participants, as it is a large-scale survey study and there are only a few Normal Universities which train pre-service teachers in Midwest China.

The population of the present study has been divided into three clusters: Hunan Province, Guizhou Province and Shanxi Province. Hunan Province is in the middle of China, with 106 colleges and universities, among which there are 3 Normal Universities and 2 Normal Colleges. Guizhou Province is in the Southwest, with 41 colleges and universities, among which there are 6 Normal Universities. Shanxi Province is in the Northwest, with 3 Normal Universities among 79 colleges and universities. All the Normal Universities were singled out. After that, six Normal Universities were selected purposively based on convenience and availability, with two Normal Universities from each cluster, among which were Hunan Normal University and Hunan First Normal University from Hunan Province, Guizhou Normal University and Guiyang Normal University from Guizhou Province, and

Xianyang Normal University and Weinan Normal University from Shanxi Province. Finally, junior English-major pre-service teachers in intact classes from each university were selected on the basis of convenience and availability.

Through the cluster sampling, purposive sampling and convenience sampling methods, finally, 836 participants took part in the survey and responded to the written questionnaires, among whom are 135 from Hunan Normal University, 149 from Hunan First Normal University, 130 from Guizhou Normal University, 147 from Guiyang Normal University, 145 from Xianyang Normal University, and 130 from Weinan Normal University. The sample size is not too big to be manageable, or not too small to provide enough information.

For the semi-structured interview, 36 participants were selected on the basis of convenience and availability. Six pre-service teachers came from each of the 6 Normal Universities.

3.5.2 Characteristics of the Participants

In this section, the characteristics of the research participants in the present investigation are described. Table 3.1 below illustrates the number of research participants related to each variable.

Table 3.1 Number of Research Participants in Relation to Each Variable

Variables		Number of Participants			
Gender		Male (78)		Female (758)	Total (836)
Enjoyment of English Learning		Low (178)	Moderate (291)	High (367)	Total (836)
Language Proficiency		Low (431)	Moderate (325)	High (80)	Total (836)
Strategy Awareness		Low (23)		High (813)	Total (836)
Personality Types	Extroversion & Introversion	Extroversion (496)		Introversion (340)	Total (836)
	Judging & Perceiving	Judging (655)		Perceiving (181)	Total (836)

Table 3.1 illustrates the number of research participants in each group of the five investigated variables. The characteristics of the participants' distribution are discussed below:

As Table 3.1 shows, there are 758 female and 78 male pre-service teachers participating in the survey. This is in accordance with the real situations that more female than male students in normal universities, which may be because more females hope to be teachers in the future than males, which is even typical for English-major pre-service teachers. For example, only 3 to 6 male students exist among all the 30 to 50 students in the whole class in the 6 normal universities, where the researcher collected data. The reason might be that people think nowadays it is better for females to be teachers than males, and females are better English language learners than males. However, these male students have provided the researcher with useful information.

Regarding the enjoyment of English learning, 367 pre-service teachers are with high enjoyment of English learning, 291 with moderate enjoyment of English learning, and 178 are with low enjoyment of English learning. This proportion is not well-balanced, but is quite acceptable, since the difference is not too big, and it is impossible to predict how many pre-service teachers enjoy English learning.

In terms of language proficiency, there are 431 pre-service teachers with low language proficiency, 325 with moderate proficiency, and only 80 with high proficiency. This proportion is not balanced, which may be because it is hard for most of the participants to meet the national criteria for high proficiency level (over 70) of TEM-4, the national proficiency test for English majors in China. In reality, Hunan Normal University is the only one among the six normal universities, with half of the students at the level of high proficiency, which is a key university in China. In general,

students in key universities have higher language proficiency than that of ordinary ones, since only students with higher proficiency can get the chances to enter the key universities. In addition, among the three provinces, only two key normal universities: Hunan Normal University in Hunan Province, which is already included in the study, and Shanxi Normal University in Shanxi Province, which is not included, since it is too difficult for the researcher to get data, without any friends there.

We can also see that there are 813 participants with high strategy awareness and only 23 with low strategy awareness. To determine high or low strategy awareness for the present study, the participants were asked to answer the question: “Did you know or think about this strategy before?” Their choice of ‘Yes’ was valued as ‘1’, and ‘No’ was valued as ‘0’. The total score is 48. A participant who obtained the score from 1 to 24 has been considered as having low strategy awareness, and anyone with the score from 25 to 48 has been considered as having high strategy awareness. It is impossible to predict the numbers of participants with high or low strategy awareness. Nonetheless, the information given by these pre-service teachers has been necessary for the present study.

For the personality types, there are 496 extroverts and 340 introverts in terms of the extroversion-introversion scale, and 655 judgers and 181 perceivers according to the judging-perceiving scale. This proportion is not well-balanced. However, it is acceptable, since it is impossible to predict their personality preference.

What has been described above are the characteristics of the participants for the questionnaires in quantitative data collection. In the qualitative data collection, 36 out of the 836 participants were chosen on the basis of convenience and availability. Six participants came from each of the 6 Normal Universities. Specifically, 9 male

pre-service teachers and 27 females volunteered to take part in the semi-structured interview, among whom 15 students with high language proficiency, 8 with moderate proficiency, and 13 with low proficiency.

3.6 Data Collection Instruments

After the research objectives and research questions of the present study have been specified, the researcher moves on to the research design and data collection. According to Punch (2005), when the questions, design and methods fit together, the argument is strong and the research has validity. Otherwise, the argument is weakened and the research lacks validity. Therefore, it is necessary to consider the appropriateness among the research questions, research design, and research methods.

Based on the research objectives and research questions, the researcher decided to employ a mixed data collection method for the present investigation. Specifically speaking, the background information questionnaire, language learning strategy questionnaire, strategy awareness questionnaire, personality type questionnaire, and national English proficiency test, and semi-structured interview were used as data collection instruments to elicit information about LLS use of the participants to answer the research questions.

3.6.1 Background Information Questionnaire

The Background Information Questionnaire was adapted from Oxford's (1990) Background Questionnaire, which has been used in LLS research studies to provide necessary and additional information on participants' characteristics and help the researcher better understand the SILL results in the context. The Background Questionnaire was revised to be suitable for the participants in terms of contents,

wording and time permission. It was checked and approved by the researcher's advisor and Ph. D. classmates, translated into Chinese, and checked by 2 Chinese language experts. The adapted Background Information Questionnaire was piloted together with the other instruments to make sure that every participant's information was put together, which helps the semi-structured interviews go smoothly later.

The items are concerned with information as follows: 1) Student ID number; 2) Age; 3) Gender; 4) Enjoyment of English learning; 5) Hours for English learning outside of class everyday in general; 6) Self-rating of language proficiency; 7) Score of TEM-4; 8) QQ number. To assess enjoyment of English learning, the participants were asked the following question: 'Do you enjoy learning English?' with the response options below: a) Not at all, b) Not very much, c) Somewhat, d) A lot, and e) Extremely, which is modified based on the biographical and attitudinal information in the instrument by Wong and Nunan (2011).

3.6.2 Language Learning Strategy Questionnaire

3.6.2.1 Modification of the LLS Questionnaire

The language learning strategy questionnaire used in the present study was combined and modified according to the Strategy Inventory for Language Learning (SILL) Version 7.0 by Oxford (1990), adapted SILL Version 7.0 by Yin (2008), and adapted SILL Version 5.1 by Rao (2008).

Oxford's (1990) SILL is designed as a self-report instrument for measuring the frequency of LLSs use (Oxford & Burry-Stock, 1995). The 50-item SILL ESL/EFL Version – Version 7.0 is to gather information about how learners learn English as a second/foreign language. It is 'the only language learning strategy questionnaire that have been extensively checked for reliability and validated in

multiple ways' (Oxford and Burry-Stock, 1995; Oxford, 1996). In the SILL, students will be asked to respond to each strategy item using a 5-point Likert scale as follows.

- | |
|--|
| <ol style="list-style-type: none">1. Never or almost never true of me2. Usually not true of me3. Somewhat true of me4. Usually true of me5. Always or almost always true of me |
|--|

Yin's (2008) adapted SILL is based on Oxford's (1990) 50-item SILL Version 7.0. The adaptation of the items was based on the SILL results from the pilot study and the students' responses to the 2 open-ended questions in the pilot study: 1) Other than the strategies listed in the SILL, do you use any strategies that you think are helpful in learning English? 2) Of all the SILL items, which ones do you think do not match the EFL context in China? In the end, 29 original items were left, with 8 items revised and 13 new items added. About 1,200 undergraduate students drawn from intact classes in 6 universities in 4 cities in China complete the adapted SILL.

Rao's (2008) adapted SILL is based on Oxford's (1990) 80-item SILL Version 5.1, which is for English speakers learning a new language, with the reason that its length provides more data than the shorter Version 7.0. The adaptation of the items was based on the responses in a semi-structured interview by 12 end-of-second year non-English majors in a Chinese university. In the end, 37 original items are left, with 21 items revised and 22 new items added.

After a careful check and comparison of the above three SILLs, the researcher decided to mainly follow Yin's (2008) adapted SILL, since the adaptation of this SILL was based on the SILL (Oxford, 1990) for EFL/ESL learners and the participants' responses to the open-ended questionnaire. According to the researcher's

experience of an English learner and teacher, 4 of the added 13 new items, being not so appropriate, were replaced by other 4 items from Rao's (2008) 22 added new items, among which one was made a slight change of wording. In this way, a 50-item language learning strategy questionnaire has been constructed. After that, the researcher's supervisor and the other Ph.D candidates with the same supervisor helped to check the items and the wording to validate the questionnaire. Finally, the final 50 items of the adapted SILL have been formed in Table 3.2 as follows:

Table 3.2 A Summary of the Items in the Adapted SILL

1. I think of relationships between what I already know and new things I learn in English.
2. I use new English words in a sentence so that I can remember them.
3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.
4. I Use vocabulary books or electronic dictionaries to remember new English words.
5. I say or write new English words several times.
6. I review English lessons often.
7. I remember new English words or phrases by remembering the context in which they appear.
8. I try to talk like native speakers.
9. I watch English-speaking movies or TV programs.
10. I read newspapers, magazines, and books in English.
11. I write diaries or short articles in English.
12. I listen to English radio programs, news or English songs on Internet, by MP3/4, or by mobile phone.
13. I get the meaning of an English word by dividing it into parts that I understand, such as roots, prefixes, and suffixes.
14. I try not to translate word-for-word.

Table 3.2 A Summary of the Items in the Adapted SILL (Cont.)

15. I guess the meaning of the unfamiliar English words.
16. I use gestures to convey my meaning during a conversation in English.
17. I make up new words if I do not know the precise ones in English.
18. I read English without looking up every new word.
19. I try to predict what the other person will say next in English.
20. If I cannot think of an English word, I use a word or phrase that means the same thing.
21. I improve my English from my own mistakes.
22. I try to find out how to learn English well.
23. I plan my schedule so that I will have enough time to learn English.
24. I look for opportunities/chances to read as much as possible in English. 25. I have clear goals for improving my English skills.
26. I think about my progress in learning English.
27. I try to relax whenever I feel afraid of using English.
28. I encourage myself to speak English even when I am afraid of making mistakes.
29. I give myself a reward or treat when I do well in English.
30. I tell myself that there is always more to learn when learning English.
31. I notice whether I am nervous or not when I am reading or using English.
32. I talk to someone else about how I feel when I am learning English.
33. If I do not understand something in English, I ask the other person to slow down or say it again.
34. I ask my English teacher or fluent speakers of English to correct me when I talk.
35. I practice speaking English with other students.
36. I ask for help from my English teacher or my friends.
37. I try to learn about the culture of English-speaking countries.
38. I practice English reading on the Internet.
39. I write email in English.
40. I remember new expressions by two-way translation.

Table 3.2 A Summary of the Items in the Adapted SILL (Contd.)

<p>41. I try to understand the complex English sentences by analyzing their grammatical structures.</p> <p>42. I systematically review vocabulary, texts and notes before exams.</p> <p>43. I participate in classroom activities in English classes.</p> <p>44. I attend extra classes at a language school.</p> <p>45. I improve my English from different websites.</p> <p>46. I participate in extra-curricular activities.</p> <p>47. I am in correspondence with my friends in English.</p> <p>48. I go to an English corner or English saloon and talk with others in English there.</p> <p>49. I do a lot of exam-oriented exercises before exams.</p> <p>50. I always encourage myself not to be discouraged by poor exam results.</p>

In the modified SILL designed for the present investigation, a five-point rating scale adapted from Oxford (1990) has been used to value the frequency of the strategy use. The scale has been valued as 1, 2, 3, 4, and 5 as illustrated below.

<p>Scale 1 = Never or almost never used</p> <p>Scale 2 = Not often used</p> <p>Scale 3 = Sometimes used</p> <p>Scale 4 = Often used</p> <p>Scale 5 = Always or almost always used</p>

3.6.2.2 Piloting the Language Learning Strategy Questionnaire

According to Oppenheim (1992), pilot study helps researchers increase the reliability, validity, as well as practicality of the questionnaire. Intaraprasert (2000) stated that piloting can not only help with wording of questions but also with procedural matters, for example, the ordering of question sequences and the reduction of non-response rates. The sample for the pilot study, as ‘a small-scale replica and a

rehearsal of the main study (Riazi, 1999, p. 198)', is selected so as it represents the entire population who are to participate in the main study.

The purposes of the piloting were to check the content validity and reliability of the adapted SILL and to make it more comprehensive. Specifically, the purposes of the piloting are 1) to see whether the wording of the questionnaire items are clear to the respondents or any of them needs revising; 2) to explore if the majority of the students were familiar with all the items of language learning strategies or not; 3) to check the reliability of the modified SILL using Cronbach's Coefficient Alpha (α).

The adapted SILL was translated into Chinese to avoid misunderstanding by respondents to the choices and to ensure greater accuracy of results especially with the students with low proficiency. Two Chinese language experts were asked to help check the wording to make sure of the content validity.

The pilot study was carried out at Hunan First Normal University in May, 2013. Ninety junior English-major pre-service teachers in 2 intact classes from the researcher's 6 natural classes were asked to participate in the pilot study based on convenience and availability, who were excluded in the main study.

As mentioned above, Coefficient Alpha (α) was used to check the internal consistency of the reliability of the modified SILL for the pilot study, which is .885. This is acceptable because of the acceptable reliability of .70 as rule of thumb for research purposes (Fraenkel & Wallen, 2007). In addition, after the piloting, comments on the SILL were examined and discussed with the researcher's supervisor for implications. It was found that most of the strategy items were acceptable regarding their clarity and familiarity to the participants. However, taking the

supervisor and the interviewees' suggestions into consideration, "39 I write email in English" and "47 I am in correspondence with my friends in English" were combined together to form "39 I get touch with my friends in English, for example, writing e-mails or letters"; and "48 I go to an English corner or English saloon and talk with others in English there" was deleted since it is part of the activities in "35 I practice speaking English with other students". Accordingly, "49 I do a lot of exam-oriented exercises before exams" was changed into "47", and "50 I always encourage myself not to be discouraged by poor exam results" changed into "48". Therefore, as a result of the item finalization, the questionnaire consists of 48 items of LLSs employed by learners in the Chinese context, which is the setting of the present study.

Meanwhile, 4 categories were differentiated according to the definitions, purposes and functions of the categories by Oxford (2011), among which there are 13 metastrategies (MET), 18 cognitive strategies (COG), 7 affective strategies (AFF), and 10 socio-cultural interactive strategies (SCI), as listed in the following Table 3.3:

Table 3.3 Summary of the Items in the Adapted SILL by Category

I. Metastrategies (MET)
9. I watch English-speaking movies or TV programs.
10. I read newspapers, magazines, and books in English.
12. I listen to English radio programs, news or English songs on Internet, by MP3/4, or by mobile phone.
22. I try to find out how to learn English well.
23. I plan my schedule so that I will have enough time to learn English.
24. I look for opportunities/chances to read as much as possible in English.
25. I have clear goals for improving my English skills.
26. I think about my progress in learning English.
38. I practice English reading on the Internet.
42. I systematically review vocabulary, texts and notes before exams.

Table 3.3 A Summary of the Items in the Adapted SILL by Category (Cont.)

44. I attend extra classes at a language school.

45. I improve my English from different websites.

47. I do a lot of exam-oriented exercises before exams.

II. Cognitive strategies (COG)

1. I think of relationships between what I already know and new things I learn in English.

2. I use new English words in a sentence so that I can remember them.

3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.

4. I use vocabulary books or electronic dictionaries to remember new English words.

5. I say or write new English words several times to remember them.

6. I review English lessons often.

7. I remember new English words or phrases by remembering the contexts in which they appear.

11. I write diaries or short articles in English.

13. I get the meaning of an English word by dividing it into parts that I understand, such as roots, prefixes, and suffixes.

14. I try not to translate word-for-word.

15. I guess the meaning of the unfamiliar English words.

17. I make up new words if I do not know the precise ones in English.

18. I read English without looking up every new word.

19. I try to predict what the other person will say next in English.

20. If I cannot think of an English word, I use a word or phrase that means the same.

21. I improve my English from my own mistakes.

40. I remember new expressions by two-way translation.

41. I try to understand the complex English sentences by analyzing their grammatical structures.

Table 3.3 A Summary of the Items in the Adapted SILL by Category (Cont.)

<p>III. Affective strategies (AFF)</p> <p>27. I try to relax whenever I feel afraid of using English.</p> <p>28. I encourage myself to speak English even when I am afraid of making mistakes.</p> <p>29. I give myself a reward or treat when I do well in English.</p> <p>30. I tell myself that there is always more to learn when learning English.</p> <p>31. I notice whether I am nervous or not when I am reading or using English.</p> <p>32. I talk to someone else about how I feel when I am learning English.</p> <p>48. I always encourage myself not to be discouraged by poor exam results.</p> <p>IV. Sociocultural-interactive strategies (SCI)</p> <p>8. I try to talk like native speakers.</p> <p>16. I use gestures to convey my meaning during a conversation in English.</p> <p>33. If I do not understand something in English, I ask the other person to slow down or say it again.</p> <p>34. I ask my English teacher or fluent speakers of English to correct me when I talk.</p> <p>35. I practice speaking English with other students.</p> <p>36. I ask for help from my English teacher or my friends.</p> <p>37. I try to learn about the culture of English-speaking countries.</p> <p>39. I get touch with my friends in English, for example, writing e-mails or letters.</p> <p>43. I participate in classroom activities in English classes.</p> <p>46. I participate in extra-curricular activities.</p>
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Besides ensuring the validity and making the language learning strategy items appropriate, the pilot study has helped to guarantee the quality of the final version of the modified SILL. To check the internal consistency of the reliability of the SILL, Alpha Coefficient 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 0 and +1, with a higher value of .70 or greater indicating a scale with satisfactory degree of reliability. The reliability estimate of the modified SILL according to the responses of 836 English-major pre-service teachers is demonstrated in Table 3.4 below.

Table 3.4: Reliability Estimate of LLS Questionnaire as a Whole and the Four Categories

LLS Categories	LLSs as a Whole (48 items)	Category 1 MET (13 items)	Category 2 COG (18 items)	Category 3 AFF (7 items)	Category 4 SCI (10 items)
Reliability Estimate (Alpha Coefficient)	.92	.83	.78	.70	.78

3.6.3 Strategy Awareness Questionnaire

3.6.3.1 Adopting the Strategy Awareness Questionnaire

A measurement of strategy awareness was added to the SILL for the first time by Lee and Oxford (2008). For the present study, the researcher followed the steps to add the measurement of strategy awareness to the modified SILL to discover whether the respondents are aware of the given strategy items. This basic strategy awareness proceed ‘metacognitive knowledge about specific strategies (the value of procedures as well as when and where to use strategies) (Pressley et. al., 1989, p.305)’, which plays a very important role in adequate transfer of strategy use.

Specifically, the participants were asked to respond to the question with regard to each item of LLSs: ‘Did you know or think about this strategy before?’ by making the dichotomous choice: ‘Yes’ or ‘No’ before making the choice of frequency of strategy use. If participants choose “Yes”, it means they have such strategy awareness and will get the score of “1”; if they choose “No”, it indicates they do not have such strategy awareness, and will get the score of “0”. The total score is

48, since there are altogether 48 strategy items. Participants who get the scores from “0” to “24” belong to those who have low strategy awareness, while participants who get the scores from “25” to “48” belong to those who have high strategy awareness.

3.6.3.2 Piloting the Strategy Awareness Questionnaire

The piloting of the strategy-awareness questionnaire was conducted to the same participants at the same time with the other questionnaires, with the aim to see whether the wording of the question is clear to the respondents. The results of the piloting showed that some students did not understand the question “Did you know or think about this strategy before?”, so that they misunderstood the choice of strategy awareness ‘yes’ as “I have used the strategy once”, and ‘no’ as “I have never used the strategy”. Therefore, it is useful and necessary to make sure the participants know what strategy awareness means and how to make the choices in the main study.

3.6.4 Personality Type Inventory

3.6.4.1 Adopting the Personality Type Inventory

The Myers-Briggs Type Indicator (MBTI) (Myers & Myers, 1980) was utilized to identify the participants’ personality types: extroversion-introversion scale and judging-perceiving scale. The MBTI has been widely used by many researchers to examine the relationship between personality types and language learning (Ehrman & Oxford, 1989, 1990; Oxford & Ehrman, 1995; Carrell, Prince, & Astika, 1996; Conti & Kolody, 1999; Sharp, 2008; Wakamoto, 2000). MBTI instrument is the most widely used personality inventory in the world (Myers et. al., 1998; Dörnyei, 2005), because its validity, reliability, easy scoring, and understanding have been proven by many studies (e.g. Tzeng et. al., 1984; Carlson, 1989; Thompson & Bing-You, 1998).

There are several different kinds of MBTI inventory. In China, MBTI-G has been translated into Chinese by Miao and Huang (2000), and MBTI-M into Chinese by Cai, Zhu and Yang (2001), checking the validity and reliability. The MBTI-M was selected for the present study because Form M is the most reliable form compared to other forms (Myers et. al., 1998).

MBTI-M is 'an instrument designed to measure four scales of an individual's personality types: sensing-intuitive, thinking-feeling, extroversion-introversion and judging-perceiving' (Capretz, 2003, p. 418). Since the present study only explores effects of two scales of personality types: extroversion-introversion and judging-perceiving on pre-service teachers LLS use, the items of the two scales were picked out from the whole MBTI-M items.

After the items of the extroversion-introversion scale and judging-perceiving scale were selected from the MBTI-M, one Chinese language expert and one psychology expert in Hunan First Normal University were asked to help check the wording to make sure of the content validity. The MBTI categorizes individuals based on preference or type, but not the strength or degree of preference nor degree of aptitude (Wadligton, 2008). The greater score in each indicator determines the direction of preference (Cai, 2001).

3.6.4.2 Piloting the Personality Type Inventory

The piloting of the personality type inventory was conducted to the same participants at the same time with the piloting of other questionnaires, with the purpose to see whether the wording of the question is clear to the respondents. Implications from the piloting were used to improve the questionnaire so that they did not cause misunderstanding or confusion in the actual administration.

The piloting of the strategy-awareness questionnaire was conducted to the same participants at the same time with the piloting of other questionnaires, with the aim to see whether the wording of the question is clear to the respondents. The results of the piloting showed that the students have no difficulty in understanding the meaning of the items and in making the choices.

3.6.5 Language Proficiency Test

Test for English Majors – Grade Four (TEM-4) is a national proficiency test for English majors in China. Candidates, i.e. English-major sophomores from different universities of the country are required to take the examination in May every year. It is a compulsory examination for English majors, which aims to assess students' knowledge of English and their ability to use English, to provide positive backwash effect on classroom teaching, and to help evaluate the implementation of the national teaching syllabus (Zhu, 2005). The total score in TEM-4 is 100. The structure of the test is showed below:

Table 3.5 The Structure of Test for English Majors – Grade Four (TEM-4)

Task	Percentage of total score
Listening	30%
Cloze Test	10%
Grammar and Vocabulary	15%
Reading Comprehension	20%
Writing	25%

As the national proficiency test, TEM-4's content, construct, predictive and concurrent validity and reliability are guaranteed (Zhu, 2005). Participants in this study are junior English-major pre-service teachers. Therefore, they have taken part in TEM-4 and got the scores of TEM-4. The national rating scale for the TEM-4 is as follows: Under 60 – Fail; From 60 to 69 – Pass; From 70 to 79 – Good; From 80 and above –

Excellent. For the present study, the participants with scores under 60 were graded as low language proficiency; with scores from 60 to 69 as moderate language proficiency; and with scores from 70 and above as high language proficiency, respectively.

3.6.6 Semi-structured Interview

3.6.6.1 Generating Semi-structured Interview Questions

The semi-structured interview was conducted after the questionnaires with the purpose of gaining further in-depth information about the participants' strategy use to answer Research Question 4: 'Why do pre-service teachers report employing certain strategies frequently and certain strategies infrequently?'

The questions of the semi-structured interview were designed based on the research purposes and research questions. They were cross-checked under the guidance of the researcher's supervisor and other 3 Ph.D students to ensure the content validity. In addition, to ensure accuracy of research results, the interview questions for the present study were translated into Chinese. Two of the researcher's colleagues who were experts in English teaching and translation helped discuss the Chinese wording of the translation and cross-check for the validity of the interview questions in order to avoid any ambiguity.

The interview began with questions about their background information in order to build the good relationship between the interviewer and the interviewee, and also reduce the interviewees' embarrassment in the interview environment (Intaraprasert, 2000), and then focus turned to the reasons why they use some strategies frequently and some strategies infrequently. What follow are the guide questions for the semi-structured interview:

- 1) What is your name?

- 2) Do you like English? Why?
- 3) How many hours do you learn English outside of class?
- 4) What is your self-rating English language proficiency? Why?
- 5) Are there some strategies that you did not have such strategy awareness before? If yes, why?
- 6) Why do you use certain strategies frequently?
- 7) Why do you use certain strategies infrequently?

3.6.6.2 Piloting the Semi-structured Interview

According to Intaraprasert (2000), the purposes of piloting an interview are to see whether there is anything wrong with the question items, question sequence, ways of interviewing, timing, recording, or other technical problems that may occur in the actual data collection scheme.

The interview piloting was carried out immediately after the piloting of all the questionnaires in two intact classes at Hunan First Normal University. Six volunteers took part in the semi-structured interview. Specifically, there were 2 males and 4 females, 2 with high language proficiency, 3 with moderate proficiency, and 1 with low proficiency. They were informed of the purpose of the interview. No specific time limit was set for each interview. Each interview lasted about 15 minutes. The interviews were recorded and transcribed to see whether anything needed improvement in terms of data elicitation. The interviewees' comments on the pilot study were also considered. After examining the interview transcriptions and the researcher's personal notes about the interviews, the researcher decided to follow the same interview guidance in the main stage, as it was clear to the interviewees and would help the researcher reach the goal of the interview.

3.7 Data Collection Procedure

For the present investigation, both quantitative data collection method and qualitative data collection method were implemented to gather data. There are two main steps as follows: Step 1 administering questionnaires and Step 2 conducting semi-structured interview.

When collecting the data at the first step, several English teachers teaching at the 6 normal universities were trained to assist to administer the questionnaires. The process was conducted in class for the hope that students would treat them seriously. The researcher explained the aim and the nature of the survey to the participants. Students were also informed that there is no right or wrong answers on the questionnaires and the respondents will not be affected personally, so they are urged to answer forthright (Dörnyei, 2003). Each student was given background information questionnaire, LLS questionnaire together with strategy awareness questionnaire, personality type questionnaire simultaneously. They were required to proceed to the questionnaires above sequentially. The whole process in each class was around 30 minutes in total. At last, 836 valid questionnaires were collected.

When collecting the data in Step 2, a semi-structured interview was conducted. 36 interviewees emerged according to the researcher's requirements and volunteers' real willingness. The framework for data collection process is summarized in Figure 3.3 as follows.

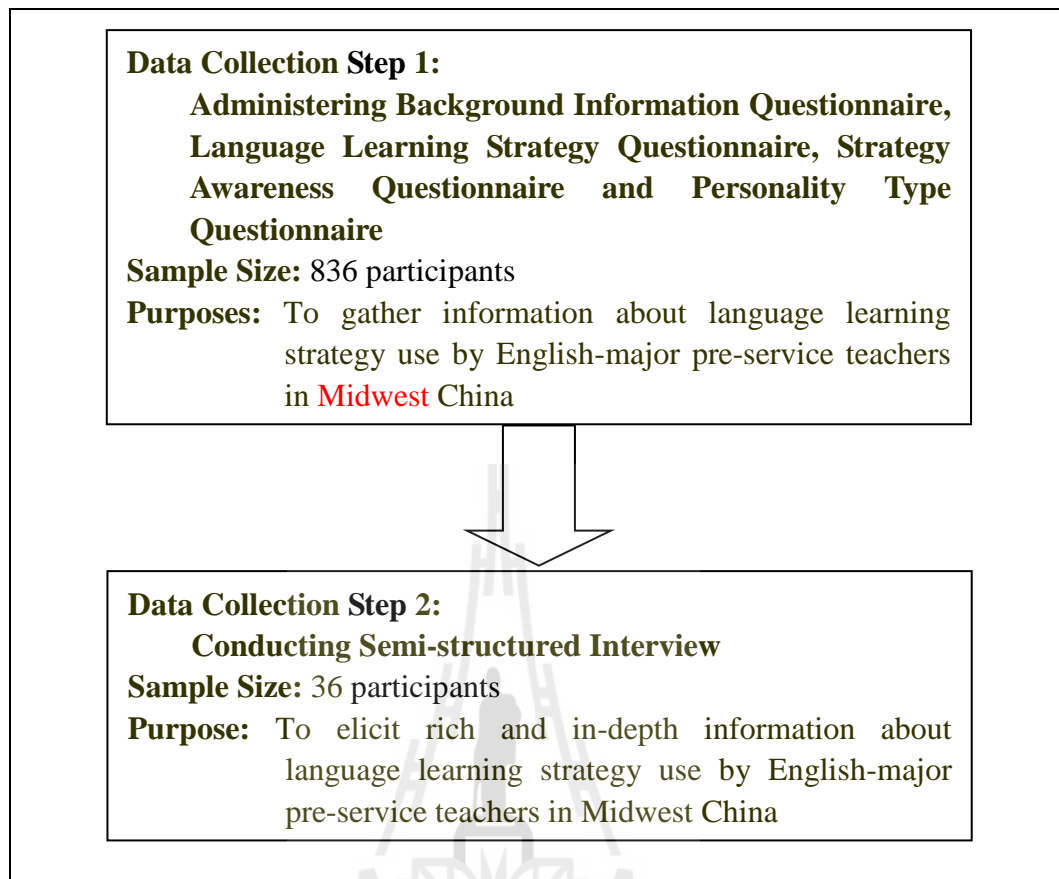


Figure 3.3 Framework of Data Collection Process

3.8 Analyzing, Interpreting and Reporting Data

The data obtained through the two steps of data collection is analyzed to answer the research questions of the present study. The data gathered from Background Information Questionnaire, LLS Questionnaire, Strategy Awareness Questionnaire and Personality Type Questionnaire was analyzed quantitatively, and the data yielded from semi-structured interview was analyzed qualitatively.

3.8.1 Quantitative Data Analysis

The purpose of the questionnaire analysis is to answer the Research Questions 1-3 in relation to use of language learning strategies of pre-service teachers

in Midwest China. The data gathered through the questionnaires was analyzed with the assistance of the SPSS program. The results achieved help to examine the effects of the 5 chosen variables on language learning strategy use in the present study, namely, learners' gender, language proficiency, enjoyment of English learning, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale. More detailed information about data analysis is described as follows.

- **Descriptive Statistics**

This descriptive statistics was used to describe the frequency distributions of pre-service teachers' LLS use. This helped to identify the strategies reported being employed frequently and infrequently by the pre-service teachers. The frequency of their strategy use can be classified into three levels according to their mean scores of strategy use: 'low use (1.00-2.49)', 'moderate use (2.50-3.49)' and 'high use (3.50-5.00)', based on the criterion proposed by Oxford (1990). The frequency levels of the overall strategy use, LLS categories, and individual strategy use were evaluated separately.

- **Analysis of Variance (ANOVA)**

An Analysis of Variance or ANOVA is used to test the significance of differences among the means of two or more groups of variables (Nunan, 1989). For the present study, ANOVA was adopted to examine the relationship between pre-service teachers' LLS use and the five selected independent variables: gender, enjoyment of English learning, language proficiency, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale at the overall level and at the category level. In addition, it was adopted to examine the

relationship between pre-service teachers' LLS use and the two variables: enjoyment of English learning and language proficiency at the individual level, as the two variables were classified into three levels, i.e., pre-service teachers who enjoy English learning at high, moderate and low level, and pre-service teachers with high, moderate and low language proficiency.

● **Post Hoc Multiple Comparison**

The post hoc multiple comparisons is performed after a mean comparison of more than two groups showing a significant difference in the analysis of variance (Mackey & Gass, 2005). That is, if the overall ANOVA is significant and a factor has more than two levels, follow-up tests are usually conducted (Green, Salkind & Akey, 2000). In the present investigation, as the two variables: enjoyment of English learning and language proficiency, were classified into three levels of high, moderate and low, the post hoc Fisher's LSD test was adopted to examine which pairs of the groups under the participants' levels of enjoyment of English learning and language proficiency contributing to the overall differences.

● **Chi-square Test**

This Chi-square test is used to analyze data to see whether there is a relationship between the chosen variables when the data are in the form of frequencies (Nunan, 1992). In the context of the present study, it was employed to check the significant variance patterns in the students' reported language learning strategy use at the individual item level by students' gender (male and female), strategy awareness (high and low), and personality types: extroversion- introversion scale and judging-perceiving scale.

This method was used to compare the actual frequencies with which the students give different responses on the 5-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 or almost never' and 'usually not') will be consolidated into a single 'low strategy use' category, response 3 ('sometimes') into a 'moderate use' category, and responses 4 and 5 ('usually' and 'always or almost always') have been combined into a single 'high strategy use' category. The purpose of consolidating the 5 response levels into three categories of language learning strategy use is to obtain cell sizes with expected values high enough to ensure a valid analysis (Green & Oxford, 1995).

● Factor Analysis

According to Cohen and Manion (1994), factor analysis is a way of determining the underlying patterns among a large number of variables. It provides an empirical basis for reducing a large number of variables to a small number of factors, with each factor representing a set of variables that are moderately or highly correlated with each other (Gall, Gall & Borg, 2007). For this present investigation, exploratory factor analysis was used to analyze the language learning strategy questionnaire obtained in Step 1 to explore the underlying factors as new categories of the language learning strategy items in the modified SILL.

In sum, to answer the first three research questions, different statistic methods were used to analyze the data. Descriptive analysis was used to examine the frequency of strategy use at overall, category, and individual levels to answer Research Question 1. To answer Research Question 2, ANOVA was adopted to check whether students' choices of LLSs vary significantly by the five variables, i.e.

students' gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale at the overall and category level; the Post Hoc Fisher's LSD Test was adopted after ANOVA to examine which pairs of the groups under the students' levels of language proficiency and enjoyment of English learning contributing to the overall differences and category differences; and Chi-square test was adopted to examine whether students' choices of LLSs vary significantly by the five variables at the individual level. Factor analysis was used to explore the underlying factors in language learning strategies employed by English-major pre-service teachers in Midwest China to answer Research Question 3.

3.8.2 Qualitative Data Analysis

The themes and coding categories in the qualitative part of the study emerged from an examination of the data rather than being determined beforehand and imposed on the data (Bogdan & Biklen, 1992). The results from analysis of data collected in interviews are to answer Question 4: 'Why do they report employing certain strategies frequently and certain strategies infrequently?'

Before the data analysis started, all the recorded interviews were transcribed by two experts in this field, and then checked by the researcher to ensure the content validity of the transcription. The translation from Chinese to English was done by the researcher, and cross-checked by two professors of English in her university for the content validity.

The translated interview data were analyzed qualitatively with content analysis and thematic analysis. Content analysis has been defined as a systematic, replicable technique for compressing many words of text into fewer content

categories based on explicit rules of coding (Weber, 1990). Thematic analysis refers to the process of analyzing data according to commonalities, relationships and differences across a data set, and coding is the main concept and specific procedure in thematic analysis (Gibson & Brown, 2009). Coding is the result of raising questions and giving provisional answers about categories and their relations (David, 2003). There are three types of coding: open coding, axial coding, and selective coding. Open coding finds the substantial codes. Axial coding uses theoretical codes to interconnect the main substantive codes. Selective coding isolates and elaborates the higher-order core category (Punch, 2005).

In the present study, open coding was first used to manage the data obtained through the semi-structured interviews. The aim of open coding is to begin the unrestricted labelling of all data and to assign representational and conceptual codes to each language learning strategy frequently or infrequently used together with their corresponding reasons highlighted within the data. Axial coding follows open coding. It identifies relationships between open codes, for the purpose of developing core codes. Once the initial open coding has been done, the researcher then regrouped the data. The strategies frequently or infrequently used by all the interviewees were grouped together separately together with their corresponding reasons, and were ranked in order. These strategies frequently or infrequently used were then singled out based on the emergent criteria. The reasons for frequent and infrequent use of strategies were then grouped by axial coding. Finally, selective coding was employed to require the selection of the focal core code, i.e., the reasons of the strategies frequently or infrequently used were regrouped separately in relation to the relationship among the reasons to get the higher-order core category. In the end, the

core categories emerged from the data were used as the main reasons for the interviewees' choices of frequent use and infrequent use of certain strategies.

3.9 Summary

This chapter has covered three main parts. First, it provides a background of research methodology, research methods in language learning strategy studies, and research methods for the present investigation: questionnaires and semi-structured interview. This is followed by a discussion of theoretical framework and selected variables investigated, research questions for the present study, sampling methods and rationals for choice of participants and characteristics of participants, data collection instruments, and data collection procedure. Finally, ways of analyzing, interpreting and reporting data have been looked into in terms of providing a clear picture to conduct the present research precisely and logically.

CHAPTER 4

QUANTITATIVE DATA ANALYSIS FOR LANGUAGE LEARNING STRATEGY USE

4.1 Introduction

The purpose of this chapter is to describe the results of the present study at different levels of data analysis. The frequency of respondents' reported use of language learning strategies (LLSs), significant variation patterns in frequency of respondents' reported LLS use at three different levels in terms of five independent variables are examined. Finally, the results of a factor analysis are presented.

As evidenced in the literature review in Chapter 2, there are many variables affecting the LLS use by language learners. 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 pre-service teachers' use of LLSs and their gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale.

In this Chapter, different levels of LLS use are taken into account in order to examine the respondents' strategy use in a more detailed manner. Firstly, the frequency of LLS use employed by 836 English-major pre-service teachers in the Midwest of China is explored at the three different levels, i.e. overall, category and individual. Then, the variation in frequency of students' reported strategy use is taken

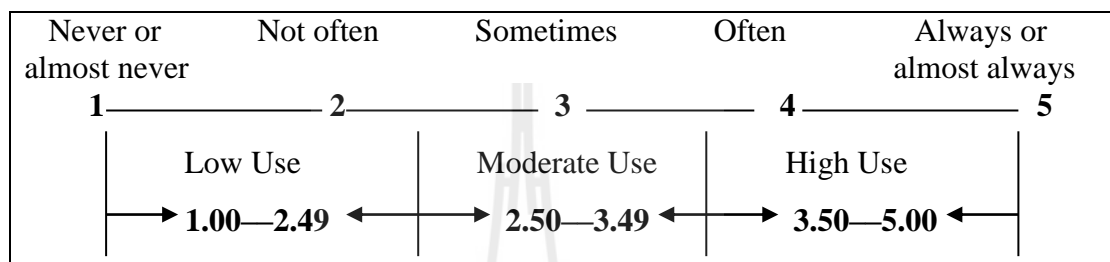
into consideration: 1) Variation in frequency of pre-service teachers' overall reported strategy use; 2) Variation in frequency of pre-service teachers' strategy use in the four main categories, i.e. metastrategies (MET), cognitive strategies (COG), affective strategies (AFF), and sociocultural-interactive strategies (SCI), according to the five variables, namely, their gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale; 3) Variation in frequency of pre-service teachers' individual strategy use according to the five variables. Finally, the results of a factor analysis are presented to explore the main underlying factors in language learning strategies employed by the 836 English-major pre-service teachers in Midwest China.

4.2 LLS Use Reported by 836 Pre-service Teachers in Midwest China

In this section, the descriptive statistics has been employed to analyze the data obtained from the English-major pre-service teachers in Midwest China to answer the first research question, i.e. 'What is the frequency of language learning strategy use employed by English-major pre-service teachers in Midwest China at different levels, i.e. overall, category and individuals?'

The description of pre-service teachers' reported frequency of LLS use at three different levels is the focal point of discussion. In doing so, the frequency of pre-service teachers' strategy use has been categorized as 'high', 'moderate' and 'low'. The frequency of strategy use is indicated on a five-point rating scale, ranging from 'never or almost never' valued as 1, 'often not' valued as 2, 'sometimes' valued as 3, 'often' valued as 4, and 'always or almost always' valued as 5. Consequently, the possible average values of frequency of LLS use can be from 1.00 to 5.00. The

mid-point of the minimum and the maximum values is 2.50. The mean frequency score is used to describe the frequency distributions of pre-service teachers' LLS use as follows: 'low use (1.00-2.49)', 'moderate use (2.50-3.49)', and 'high use (3.50-5.00)' based on the holistic mean frequency score of strategy use by the participants (Oxford, 1990). Figure 4.1 below presents the applied measure.



(Source: Modified from Oxford, 1990, p. 300)

Figure 4.1 Measure of Low, Moderate and High Use Level of LLS Use

4.2.1 Frequency of Overall LLS Use

The results of the holistic mean frequency score across the LLS questionnaire responded to by 836 English-major pre-service teachers in the Midwest of China are illustrated in Table 4.1 below.

Table 4.1 Frequency of Pre-service Teachers' Reported Overall LLS Use (n=836)

LLS Use	Mean Score (X)	Standard Deviation (S.D.)	Frequency Category
Overall	3.02	.47	Moderate Use

As presented in Table 4.1, the mean frequency score of pre-service teachers' reported overall LLS use was 3.02, indicating that, as a whole, the participants reported employing LLSs at the moderate level of use when dealing with language learning.

4.2.2 Frequency of LLS Use in the Four Categories

As mentioned earlier, the LLSs in the present study have been grouped into four main categories, i.e. metastrategies (MET), cognitive strategies (COG), affective strategies (AFF), and sociocultural-interactive strategies (SCI). Table 4.2 below shows the frequency of LLS use in the four categories.

Table 4.2 Frequency of LLS Use in MET, COG, AFF and SCI Categories (n=836)

Strategy Categories	Mean Score	Standard Deviation (S.D.)	Frequency Category
MET Category	3.06	.58	Moderate Use
COG Category	2.99	.46	Moderate Use
AFF Category	3.28	.62	Moderate Use
SCI Category	2.84	.59	Moderate Use

Table 4.2 above reveals that the 836 English-major pre-service teachers involved in the present study reported employing LLSs at the moderate frequency level in the MET, COG, AFF and SCI categories, with the mean scores of 3.06, 2.99, 3.28 and 2.84 respectively. The mean frequency scores illustrate that, of the four categories, AFF have been reported being used the most frequently, MET the second, COG the third, and SCI the least frequently used.

Section 4.2.1 presents the frequency of pre-service teachers' overall LLS use. Section 4.2.2 demonstrates the frequency of pre-service teachers' LLS use in the MET, COG, AFF and SCI categories. The next section (Section 4.2.3) is to give detailed description on the frequency of the pre-service teachers' individual LLS use.

4.2.3 Frequency of Individual LLS Use

This section focuses on 48 individual LLSs which 836 English-major pre-service teachers reported employing when learning English. 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 their reported frequency of each individual LLS use, these strategies are presented in order of their mean frequency scores, ranging from the highest to lowest. This may enable us to see a clearer picture of the strategies, which have been reported the most and least frequently. The high mean score of a strategy use implies that pre-service teachers reported employing that particular strategy frequently, and vice versa.

Table 4.3 Frequency of Pre-service Teachers' Individual LLS Use

Individual Strategy Use	Mean Score (x)	Standard Deviation (S.D.)	Frequency Category
COG 20 Using a circumlocution if one can't think of a precise English word	3.78	.87	High Use
AFF 48 Always encouraging oneself not to be discouraged by poor exam results	3.73	.96	High Use
MET 42 Systematically reviewing vocabulary, texts and notes before exams	3.67	1.02	High Use
AFF 30 Telling oneself that there is always more to learn when learning English	3.65	1.01	High Use
MET 9 Watching English-speaking movies or TV programs	3.63	.94	High Use
MET 22 Trying to find out how to learn English well	3.48	.98	Moderate Use
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	3.47	.99	Moderate Use
SCI 33 Asking the interlocutor to slow down or say it again if one doesn't understand	3.45	.97	Moderate Use
COG 15 Guessing the meaning of the unfamiliar English words	3.42	.89	Moderate Use
MET 47 Doing a lot of exam-oriented exercises before exams	3.39	1.07	Moderate Use
SCI 37 Trying to learn about the culture of English-speaking countries	3.30	.97	Moderate Use
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	3.29	.98	Moderate Use
COG 5 Saying or writing new English words several times	3.27	.97	Moderate Use
COG 18 Reading English without looking up every new word	3.26	1.05	Moderate Use
COG 41 Trying to understand the complex English sentences by analyzing their grammatical structures	3.24	1.09	Moderate Use
COG 4 Using vocabulary books or electronic dictionaries to remember new English words	3.23	1.06	Moderate Use

Table 4.3 Frequency of Pre-service Teachers' Individual LLS Use (Cont.)

Individual Strategy Use	Mean Score	Standard Deviation (S.D.)	Frequency Category
COG 21 Improving one's English from his/her own mistakes	3.20	1.01	Moderate Use
AFF 27 Trying to relax whenever feeling afraid of using English	3.20	.98	Moderate Use
MET 26 Thinking about one's progress in learning English	3.16	.92	Moderate Use
COG 14 Trying not to translate verbatim.	3.15	.97	Moderate Use
AFF 31 Noticing whether one is nervous or not when reading or using English	3.11	1.13	Moderate Use
COG 7 Remembering new English words or phrases by remembering the context in which they appear	3.10	.94	Moderate Use
SCI 43 Participating in English classroom activities.	3.10	1.02	Moderate Use
AFF 29 Giving oneself a reward or treat when one does well in English	3.07	1.13	Moderate Use
COG 1 Thinking of relationships between what one already knows and new things one learns in English	3.06	.80	Moderate Use
COG 13 Getting the meaning of an English word by dividing it into parts that one understands, such as roots, prefixes, and suffixes	3.03	1.05	Moderate Use
MET 25 Having clear goals for improving one's English skills	2.99	1.05	Moderate Use
SCI 36 Asking for help from one's English teacher or friends	2.96	.93	Moderate Use
MET 24. Looking for opportunities/chances to read as much as possible in English.	2.91	.98	Moderate Use
COG 3 Connecting the sound of a new English word and an image or picture of the word to help one remember the word	2.90	1.04	Moderate Use
COG 40 Remembering new expressions by two-way translation	2.90	1.06	Moderate Use
SCI 8 Trying to talk like native speakers	2.89	1.08	Moderate Use
MET 38 Practicing English reading on the Internet	2.89	1.05	Moderate Use
AFF 32 Talking to someone else about how one feels when learning English	2.88	1.09	Moderate Use
MET 10 Reading newspapers, magazines, and books in English	2.86	.94	Moderate Use
SCI 16 Using gestures to convey one's meaning during a conversation in English	2.79	1.07	Moderate Use
SCI 34 Asking one's English teacher or fluent speakers of English to correct when one is talking	2.75	1.10	Moderate Use
COG 6 Reviewing English lessons often	2.71	.90	Moderate Use
MET 23 Planning one's schedule so one will have enough time to learn English	2.69	1.06	Moderate Use
COG 2 Using new English words in a sentence so that one can remember them	2.67	.88	Moderate Use

Table 4.3 Frequency of Pre-service Teachers' Individual LLS Use (Cont.)

Individual Strategy Use	Mean Score	Standard Deviation (S.D.)	Frequency Category
MET 45 Improving one's English from different websites	2.66	1.08	Moderate Use
SCI 35 Practicing speaking English with other students	2.63	.95	Moderate Use
COG 19 Trying to predict what the other person will say next in English	2.54	1.08	Moderate Use
COG 11 Writing diaries or short articles in English	2.36	.94	Low Use
SCI 46 Participating in extra-curricular activities	2.35	1.02	Low Use
SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters	2.17	1.07	Low Use
COG 17 Making up new words if one does not know the precise ones in English	2.05	1.06	Low Use
MET 44 Attending extra classes at a language school	1.99	1.07	Low Use

Table 4.3 reveals that, as a whole, 5 strategies were reported being used at the high frequency level, 38 strategies at the moderate frequency level, and 5 strategies at the low frequency level. 'Using a circumlocution if one can't think of a precise English word' (COG 20) was the strategy that pre-service teachers reported employing the most frequently, with the mean score of 3.78. On the contrary, 'Attending extra classes at a language school' (MET 44) was the least frequently used strategy, with the mean score of 1.99.

The 5 strategies, which have been reported 'high use', include 2 affective strategies (AFF), i.e. 'Always encouraging oneself not to be discouraged by poor exam results' (AFF 48) and 'Telling oneself that there is always more to learn when learning English' (AFF 30); 2 metastrategies (MET), i.e. 'Systematically reviewing vocabulary, texts and notes before exams (MET 42)' and 'Watching English-speaking movies or TV programs' (MET 9); and 1 cognitive strategy (COG), i.e. 'Using a circumlocution if one can't think of a precise English word' (COG 20). The strategies

which have been reported 'low use' include 2 COG strategies, i.e. '*Writing diaries or short articles in English*' (COG 11) and '*Making up new words if one does not know the precise ones in English*' (COG 17); 2 SCI strategies, i.e. '*Participating in extra-curricular activities*' (SCI 46) and '*Getting in touch with one's friends in English, for example, writing e-mails or letters*' (SCI 39); and 1 MET strategy, i.e. '*Attending extra classes at a language school*' (MET 44). The strategies which have been reported 'moderate use' include 15 COG, 10 MET, 8 SCI and 5 AFF strategies.

To summarize, this section presents the frequency of LLS use at three different levels reported by 836 English-major pre-service teachers in the Midwest of China. The description of reported frequency of their strategy use has provided an overall picture of LLS use by Chinese English-major pre-service teachers. The next section will present the variation of LLSs at the three different levels in relation to the 5 independent variables, i.e. gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale.

4.3 Variation in Pre-service Teachers' Reported LLS Use

This section examines significant variations and patterns of variations in frequency of LLS use at each of the three different levels by 836 English-major pre-service teachers in Midwest China, with the primary purpose to investigate the relationship between the LLS use by these pre-service teachers and the five variables to answer the second research question, i.e. 'Do English-major pre-service teachers' choices of language learning strategies vary significantly according to the five variables, namely, their gender, enjoyment of learning English, language proficiency,

strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale? If they do, what are the main patterns of variation?’

The results were obtained through the ANOVA, post hoc Fisher’s LSD test and the Chi-square tests. As mentioned in Section 3.8.1, the ANOVA was used to determine the patterns of variation in pre-service teachers’ overall reported LLS use, and the use of strategies in the COG, AFF, MET, SCI categories according to the five variables. The post hoc Fisher’s LSD test was adopted to examine which pairs of the groups under the students’ levels of language proficiency and enjoyment of English learning contributing to the overall significant differences. Furthermore, the Chi-square tests were used to determine the significant variations in frequency of pre-service teachers’ reported LLS use of the 48 individual strategies. A level of significance of alpha (α) smaller than or equal .05 or .01 was adopted for the present investigation as suggested by Rubin and Babbie (2011). This means that at the level of .05, the chances are 5 in 100 or less that an observed difference could result when a variable is actually having no effect, and at the .01 level, the chances are 1 in 100 or less.

A top-down manner has been adopted In order to present the results of data analysis in this chapter. Firstly, variation in frequency of pre-service teachers’ overall reported LLS use according to the five variables as mentioned above will be described. Secondly, variation in frequency of pre-service teachers’ LLS use in the COG, AFF, MET, SCI categories according to the five variables as will be explored. Finally, an examination of individual LLS use in relation to the five variables will be presented. Figure 4.2 below illustrates a summary of the analysis of variation in frequency of different levels of LLS use in this chapter.

- Level 1:** Overall Reported LLS Use
- Level 2:** Use of LLS Use in the Four Categories (COG, AFF, MET and SCI)
- Level 3:** Use of Individual LLSs

Figure 4.2 Analysis of Variation in Frequency of Different Levels of LLS Use

4.3.1 Variation in Overall Reported LLS Use

This section involves variations in the frequency of pre-service teachers' reported LLS use as a whole based on the ANOVA. This statistical method demonstrates significant variation according to the five variables, i.e. their gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale. Table 4.4 below summarizes the results of the first level, that is, overall reported LLS use from the ANOVA. This table displays the variables, mean frequency score of LLS use (Mean), standard deviation (S. D.), level of significance (Sig. Level), and pattern of variation in frequency of pre-service teachers' LLS use (Variation Pattern), if a significant variation exists.

Table 4.4 Variation in Frequency of Pre-service Teachers' Overall LLS Use according to the Five Variables

Variables		N	Mean	S.D.	Sig. Level	Variation Pattern	
Gender	Male	78	2.89	.54	P < .05	Female > Male	
	Female	758	3.03	.46			
Enjoyment of English Learning	Low	178	2.80	.46	P < .001	High > Moderate > Low	
	Moderate	291	2.94	.40			
	High	367	3.19	.47			
Language Proficiency	Low	431	2.95	.48	P < .001	1. High > Low 2. Moderate > Low	
	Moderate	325	3.08	.46			
	High	80	3.16	.43			
Strategy Awareness	Low	23	2.30	.48	P < .001	High > Low	
	High	813	3.04	.45			
Personality Types	Extroversion-Introversion	Extroversion	496	3.09	.47	P < .001	Extroversion > Introversion
		Introversion	340	2.92	.45		
	Judging-Perceiving	Judging	655	3.05	.46	P < .01	Judging > Perceiving
		Perceiving	181	2.93	.48		

As can be seen in Table 4.4 above, the results from the ANOVA reveal that the frequency of pre-service teachers' overall LLS use varies significantly according to the five variables, that is, students' gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale.

In terms of students' gender, the result from ANOVA shows a significant difference between male and female pre-service teachers. The mean frequency scores of the female and male pre-service teachers are 3.03 and 2.89 respectively. This implies that in the overall use of LLSs, female pre-service teachers reported employing strategies significantly more frequently than did their male counterparts.

Regarding the pre-service teachers' enjoyment of English learning, by comparing the mean frequency scores of their enjoyment of English learning, the post hoc Fisher's LSD test shows the significant variations in the overall LLS use among pre-service teachers with 'high', 'moderate' and 'low' enjoyment of English learning.

The mean frequency scores are 3.19, 2.94 and 2.80 respectively. The significant variations were found in the overall LLS use among the 'high', 'moderate' and 'low' level of enjoyment of English learning pre-service teachers. The results indicate that the pre-service teachers who enjoyed learning English at the higher level reported employing significantly greater overall strategy use than those who enjoyed learning English at the lower level.

With regard to the language proficiency, the post hoc Fisher's LSD test shows the significant variations in the overall LLS use among pre-service teachers with 'high', 'moderate' and 'low' proficiency levels. Specifically, the mean frequency scores were 3.16, 3.08 and 2.95 respectively. The significant variations were found in the overall LLS use between the pre-service teachers at the 'high' and 'low' language proficiency levels, and between those at the 'moderate' and 'low' language proficiency levels.

With respect to the strategy awareness, the ANOVA result shows a significant difference between high and low strategy awareness pre-service teachers. Their mean frequency scores are 3.04 and 2.30 respectively. This indicates that in the overall use of LLSs, pre-service teachers with high strategy awareness reported employing strategies significantly more frequently than did the counterparts with low strategy awareness.

In terms of pre-service teachers' personality types, the ANOVA results show that there exist significant differences between extroverts and introverts, and between judgers and perceivers separately. Specifically, and the mean frequency scores by extroverts and introverts are 3.09 and 2.92 separately, and that of judgers and perceivers are 3.05 and 2.93 respectively. This shows that in the overall use of LLSs,

extroverts reported employing strategies significantly more frequently than did introverts, and judgers reported employing strategies significantly more frequently than did perceivers.

As a whole, the frequency of pre-service teachers' overall LLS use did vary according to all the five variables. The next section will demonstrate the results from the ANOVA for the frequency of the use of language learning strategies in the MET, COG, AFF, SCI categories.

4.3.2 Variation in LLS Use in the Four Categories by the Five Variables

As mentioned earlier, LLSs for the present study have been classified into four main categories, i.e. metastrategies (MET), cognitive strategies (COG), affective strategies (AFF), and sociocultural-interactive strategies (SCI). The ANOVA results show significant variations in frequency of pre-service teachers' reported LLS use by the four categories according to gender, enjoyment of English learning, language proficiency, strategy awareness and personality types as presented in Tables 4.5 to 4.10.

4.3.2.1 Variation in LLS Use in the Four Categories by Gender

Table 4.5 illustrates the significant variations in mean frequency of reported pre-service teachers' LLS use by the four categories according to gender.

Table 4.5 Variation in LLS Use in the Four Categories according to Gender

Strategy Categories	Femal (n=758)		Male (n=78)		Sig. Level	Variation Pattern
	Mean	S.D.	Mean	S.D.		
MET Category	3.07	.57	2.97	.65	N.S	—
COG Category	3.01	.45	2.82	.55	P<.01	Female>Male
AFF Category	3.29	.60	3.11	.80	P<.05	Female>Male
SCI Category	2.85	.59	2.77	.59	N.S.	—

The results of ANOVA in Table 4.5 reveal that significant variations were found in the COG and AFF categories. Female pre-service teachers reported employing LLSs significantly more frequently than their male counterparts. However, no significant variations were found in the MET and SCI categories.

4.3.2.2 Variation in LLS Use in the Four Categories by Enjoyment of English Learning

Table 4.6 presents the significant variations in the mean frequency scores of pre-service teachers' LLS use by the four categories according to enjoyment of English learning.

Table 4.6 Variation in LLS Use in the Four Categories by Enjoyment of English Learning

Strategy Categories	High (n=367)		Moderate (n=291)		Low (n=178)		Sig. Level	Variation Pattern
	Mean	S.D	Mean	S.D	Mean	S.D		
MET Category	3.27	.59	2.96	.48	2.79	.52	P<.001	High>Moderate >Low
COG Category	3.13	.47	2.93	.37	2.80	.49	P<.001	High>Moderate >Low
AFF Category	3.43	.62	3.20	.58	3.08	.62	P<.001	1. High>Moderate 2. High>Low
SCI Category	3.01	.60	2.77	.53	2.60	.55	P<.001	High>Moderate >Low

Based on the ANOVA results, Table 4.6 above presents that significant differences were found in the use of LLSs in all the four categories according to this variable. The post hoc Fisher's LSD test shows that in relation to the MET, COG and SCI categories, pre-service teachers who enjoy learning English at the higher level reported employing strategies significantly more frequently than those who enjoyed learning English at the lower levels; in the AFF category, pre-service teachers who enjoyed learning English at the high level reported employing strategies significantly

more frequently than those who enjoyed learning English at the moderate or low level.

4.3.2.3 Variation in LLS Use in the Four Categories according to Language Proficiency

Table 4.7 demonstrates the significant variations in the mean frequency score of students' LLS use by the four categories in terms of language proficiency.

Table 4.7 Variation in Frequency of LLS Use in Categories by Language Proficiency

Strategy Categories	High (n=80)		Moderate (n=325)		Low (n=431)		Sig. Level	Variation Pattern
	Mean	S.D	Mean	S.D	Mean	S.D		
MET Category	3.26	.58	3.11	.57	2.98	.57	P<.001	1. High>Low 2.Moderate>Low
COG Category	3.13	.40	3.06	.45	2.92	.47	P<.001	1.High>Low 2.Moderate>Low
AFF Category	3.29	.55	3.31	.64	3.25	.63	N.S.	—
SCI Category	3.00	.60	2.90	.55	2.77	.60	P<.001	1.High>Low 2.Moderate>Low

The results from ANOVA shown in Table 4.7 above demonstrate variations in students' LLS use in the MET, COG and SCI categories by language proficiency. The post hoc Fisher's LSD test results show significant differences among the students with different language proficiency levels. Specifically, students with the high language proficiency level reported employing strategies significantly more frequently than those with low proficiency and those with moderate language proficiency more frequently than those with low proficiency in the MET, COG and SCI categories. However, no significant variations were found in the AFF category.

4.3.2.4 Variation in LLS Use in the Four Categories by Strategy Awareness

The results from ANOVA in Table 4.8 show the significant variations in the mean frequency score of reported pre-service teachers' LLS use by the four categories in respect of strategy awareness.

Table 4.8 Variation in Frequency of LLS Use in Categories by Strategy Awareness

Strategy Categories	High (n=813)		Low (n=23)		Sig. Level	Variation Pattern
	Mean	S.D.	Mean	S.D.		
MET Category	3.08	.56	2.29	.59	P<.001	High>Low
COG Category	3.01	.45	2.31	.53	P<.001	High>Low
AFF Category	3.30	.61	2.46	.64	P<.001	High>Low
SCI Category	2.86	.58	2.19	.47	P<.001	High>Low

The results from ANOVA in Table 4.8 indicate that significant differences were found in LLS use in all the four categories. Pre-service teachers with high strategy awareness reported employing strategies significantly more frequently than those with low strategy awareness.

4.3.2.5 Variation in LLS Use in the Four Categories by Personality Types

Tables 4.9 and 4.10 reveal the significant variations in mean frequency score of reported pre-service teachers' LLS use by the four categories according to the two scales of personality types based on the ANOVA results.

4.3.2.5.1 Variation in LLS Use in the Four Categories by Extroversion-Introversion

Table 4.9 illustrates the significant variations in frequency of pre-service teachers' reported LLS use under the four categories according to extroversion- introversion scale of personality types based on the ANOVA results.

Table 4.9 Variation in LLS Use in the Four Categories according to Extroversion- Introversion

Strategy Categories	Extroversion (n=496)		Introversion (n=340)		Sig. Level	Variation Pattern
	Mean	S.D.	Mean	S.D.		
MET Category	3.13	.58	2.96	.56	P<.001	Extroversion > Introversion
COG Category	3.05	.47	2.91	.44	P<.001	Extroversion > Introversion
AFF Category	3.33	.59	3.20	.67	P<.01	Extroversion > Introversion
SCI Category	2.95	.59	2.68	.55	P<.001	Extroversion > Introversion

The ANOVA results in Table 4.9 above reveal that there exist significant variations in all the four MET, COG, AFF and SCI categories in association with extroversion-introversion, with extroverts reporting employing LLSs significantly more frequently than introverts.

4.3.2.5.2 Variation in LLS Use in the Four Categories by Judging-Perceiving

Tables 4.10 illustrates the significant variations in frequency of pre-service teachers' reported LLS use under the four categories according to judging-perceiving scale of personality types based on the ANOVA results.

Table 4.10 Variation in Frequency of LLS Use in Categories by Judging & Perceiving Scale

Strategy Categories	Judging (n=655)		Perceiving (n=181)		Sig. Level	Variation Pattern
	Mean	S.D.	Mean	S.D.		
MET Category	3.10	.57	2.94	.58	P<.01	Judging>Perceiving
COG Category	3.01	.47	2.93	.45	P<.05	Judging>Perceiving
AFF Category	3.30	.61	3.20	.67	N.S	—
SCI Category	2.87	.57	2.72	.63	P<.01	Judging>Perceiving

The results of ANOVA in Table 4.10 above show that significant variations were found in LLS use in the MET, COG and SCI categories, with judges reporting employing strategies significantly more frequently than perceivers. However, no significant variation was found in strategy use in the AFF category according to judging-perceiving scale.

In short, the variations in frequency of pre-service teachers' LLS use in the four categories according to the five variables based on the ANOVA results are summarized in Table 4.11 below.

Table 4.11 Summary of Significant Variations in LLS Use in the Four Categories according to the Five Variables

Strategy Categories	Students' Gender	Enjoyment of English Learning	Language Proficiency	Strategy Awareness	Personality Types	
					Extroversion-Introversion	Judging-Perceiving
MET Category	N.S.	YES	YES	YES	YES	YES
COG Category	YES	YES	YES	YES	YES	YES
AFF Category	YES	YES	N.S.	YES	YES	N.S.
SCI Category	N.S.	YES	YES	YES	YES	YES

In summary, pre-service teachers' LLS use varied significantly according to the enjoyment of English learning, strategy awareness, and personality type: extroversion-introversion scale. Meanwhile, significant variations were found in frequency of students' LLS use under the MET, COG and SCI categories according to language proficiency and personality type: judging-perceiving scale, while no significant variations under the AFF category. Significant variations were also found in frequency of students' LLS use under the COG and AFF categories related to gender, while no significant variations under the MET and SCI categories.

4.3.3 Variation in Pre-service Teachers' Individual LLS Use

In Sections 4.3.1 and 4.3.2, the significant variations in frequency of use of LLSs have been discussed based on the ANOVA results under the two levels: overall LLS use and LLS use in the four categories in relation to the five independent variables. This section is to present the results of the Chi-square tests and ANOVA, which were employed to determine the patterns of the significant variations in students' reported strategy use at the individual strategy item level in terms of the five variables. The Chi-square results were adopted to check the individual LLS items for significant variations with regard to gender, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale. To demonstrate the significant variation, the percentages of pre-service teachers in terms of each variable reported high strategy use (4 and 5 in the LLS questionnaire) and the observed Chi-square value (χ^2) which shows the strength of variation in each individual strategy use were identified. The individual strategies are presented in order of the percentage of the reported high use of LLSs (4 and 5 in the LLS questionnaire), ranking from the highest to the lowest. This makes it easier to see an overall picture of the LLSs, which

have been reported being frequently used, analyzed in terms of these three variables. The ANOVA results were adopted to check the individual LLS items for significant variations in respect of enjoyment of English learning and language proficiency. In the following subsections, the patterns of significant variations in frequency of learners' reported individual LLS use items will be presented according to the five variables.

4.3.3.1 Variation in Individual LLS Use by Gender

As mentioned in Sections 4.3.1 and 4.3.2.1, the ANOVA results show the significant variations in frequency of pre-service teachers' overall LLS use, and use of strategies in the COG and AFF categories according to their gender. In this section, the results from the Chi-square tests reveal that 16 out of 48 strategy items varied significantly according to this variable. Table 4.12 presents the variations in pre-service teachers' reported use of individual LLSs in terms of gender.

Table 4.12 Variation in Individual LLS Use by Gender

Individual LLSs	% of high use (4 and 5)		Observed χ^2
	Female	Male	p < .05
Used more by female (11 LLSs)			
COG 20 Using a circumlocution if one can't think of a precise English word	69.1	57.7	$\chi^2 = 8.93$ p < .05
AFF 30 Telling oneself that there is always more to learn when learning English	64.1	52.6	$\chi^2 = 16.57$ p < .001
MET 42 Systematically reviewing vocabulary, texts and notes before exams	63.3	48.7	$\chi^2 = 19.84$ p < .001
MET 9 Watching English-speaking movies or TV programs	59.5	52.6	$\chi^2 = 16.39$ p < .01
SCI 33 Asking the interlocutor to slow down or say it again if one doesn't understand	52.2	41.0	$\chi^2 = 19.27$ p < .001
MET 47 Doing a lot of exam-oriented exercises before exams	51.6	37.2	$\chi^2 = 9.41$ p < .01
MET 22 Trying to find out how to learn English well	50.8	42.3	$\chi^2 = 7.79$ p < .05
COG 15 Guessing the meaning of the unfamiliar English words	49.3	30.8	$\chi^2 = 12.11$ p < .01
COG 18 Reading English without looking up every new word	47.0	35.9	$\chi^2 = 7.59$ p < .05
COG 41 Trying to understand the complex English sentences by analyzing their grammatical structures	46.3	29.5	$\chi^2 = 11.81$ p < .01
COG 5 Saying or writing new English words several times	45.3	25.6	$\chi^2 = 18.33$ p < .01
Used more by Male (5 LLSs)	Male	Female	p < .05
AFF 27 Trying to relax whenever feeling afraid of using English	41.0	40.8	$\chi^2 = 11.58$ p < .01
MET 25 Having clear goals for improving one's English skills	39.7	28.9	$\chi^2 = 7.61$ p < .05
COG 14 Trying not to translate verbatim	38.5	36.5	$\chi^2 = 16.32$ p < .001
COG 1 Thinking of relationships between what one already knows and new things one learns in English	28.2	25.9	$\chi^2 = 26.15$ p < .01
COG 2 Using new English words in a sentence so that one can remember them	21.8	14.6	$\chi^2 = 8.46$ p < .05

As shown in Table 4.12 above, the Chi-square results reveal that significant variations in use of 16 individual LLSs were found by gender. Two variation patterns were found, i.e. 'female>male', and 'male>female'.

The first variation pattern, 'female>male', indicates that a significantly greater percentage of the female students than their male counterparts reported high

use of 11 LLSs, among which 7 strategies were reported high frequency of use by more than 50 percent of the female participants. Examples are, '*Using a circumlocution if one can't think of a precise English word*' (COG 20), '*Telling oneself that there is always more to learn when learning English*' (AFF 30), and '*Systematically reviewing vocabulary, texts and notes before exams*' (MET 42).

The second variation pattern is 'male>female', indicating a significantly greater percentage of the male students than their female counterparts, with high use of 5 LLSs. Examples are, '*Trying to relax whenever feeling afraid of using English*' (AFF 27), '*Having clear goals for improving one's English skills*' (MET 25), and '*Trying not to translate verbatim*' (COG 14). No LLS was found to have a high reported frequency of use by more than 50 percent of the male participants.

4.3.3.2 Variation in Individual LLS Use by Enjoyment of English

Learning

The ANOVA results in Sections 4.3.1 and 4.3.2.2 showed significant variations in frequency of students' overall LLS use, and LLS use in all the four categories regarding their enjoyment of English learning. In this section, the results from the ANOVA test and post hoc Fisher's LSD test shown in Table 4.13 reveal significant variations in use of 41 out of 48 individual LLSs related to this variable.

Table 4.13 Variation in Individual LLS Use by Enjoyment of English Learning

Individual LLSs	High (n=367)		Moderate (n=291)		Low (n=178)		Sig. Level	Variation Pattern
	Mean	S.D	Mean	S.D	Mean	S.D		
Used more by students who enjoy English learning at high level than at moderate and low level (26 LLSs)								
COG 20 Using a circumlocution if one can't think of a precise English word	3.92	.84	3.70	.84	3.61	.94	P < .001	1.H > M 2.H > L
AFF 30 Telling oneself that there is always more to learn when learning English	3.90	.88	3.52	1.02	3.35	1.13	P < .001	1.H > M 2.H > L
AFF 48 Always encouraging oneself not to be discouraged by poor exam results	3.89	.91	3.65	.98	3.54	1.00	P < .001	1.H > M 2.H > L
MET 42 Systematically reviewing vocabulary, texts and notes before exams	3.83	1.02	3.60	.97	3.47	1.05	P < .001	1.H > M 2.H > L
MET 9 Watching English-speaking movies or TV programs	3.82	.93	3.54	.88	3.40	1.01	P < .001	1.H > M 2.H > L
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	3.70	.97	3.37	.98	3.15	.94	P < .001	1.H > M 2.H > L
MET 22 Trying to find out how to learn English well	3.66	.97	3.42	.92	3.21	1.03	P < .001	1.H > M 2.H > L
COG 21 Improving one's English from his/her own mistakes	3.44	1.03	3.11	.905	2.88	1.02	P < .001	1.H > M 2.H > L
COG 41 Trying to understand the complex English sentences by analyzing their grammatical structures	3.42	1.11	3.15	1.02	3.00	1.09	P < .001	1.H > M 2.H > L
SCI 43. Participating in English classroom activities	3.37	1.06	2.93	.89	2.82	1.00	P < .001	1.H > M 2.H > L
COG 14 Trying not to translate verbatim	3.32	.93	3.10	.93	2.89	1.04	P < .001	1.H > M 2.H > L
MET 25 Having clear goals for improving one's English skills	3.30	1.10	2.82	.91	2.63	.96	P < .001	1.H > M 2.H > L
COG 13 Getting the meaning of an English word by dividing it into parts that one understands, such as roots, prefixes, and suffixes	3.25	1.07	2.88	.98	2.81	1.02	P < .001	1.H > M 2.H > L
MET 24 Looking for opportunities/ chances to read as much as possible in English	3.18	1.00	2.74	.90	2.63	.93	P < .001	1.H > M 2.H > L
SCI 36 Asking for help from one's English teacher or friends	3.16	.94	2.86	.90	2.74	.89	P < .001	1.H > M 2.H > L
COG 10 Reading newspapers, magazines, and books in English	3.14	.96	2.71	.83	2.56	.91	P < .001	1.H > M 2.H > L
MET 38 Practicing English reading on the Internet	3.10	1.09	2.79	1.01	2.63	.96	P < .01	1.H > M 2.H > L
AFF 32 I talk to someone else about how I feel when I am learning English	3.05	1.12	2.74	1.05	2.74	1.04	P < .001	1.H > M 2.H > L

Table 4.13 Variation in Individual LLS Use by Enjoyment of English learning**(Cont.)**

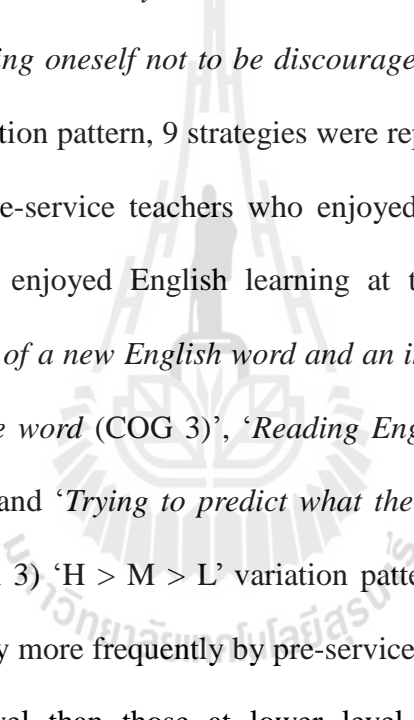
Individual LLSs	High (n=367)		Moderate (n=291)		Low (n=178)		Sig. Level	Variation Pattern
	Mean	S.D	Mean	S.D	Mean	S.D		
Used more by students who enjoy English learning at high level than at moderate and low level (26 LLSs)								
MET 23 Planning one's schedule so one will have enough time to learn English	2.96	1.12	2.56	.94	2.33	.98	P < .001	1.H > M 2.H > L
SCI 34 Asking one's English teacher or fluent speakers of English to correct when one is talking	2.94	1.11	2.68	1.06	2.49	1.09	P < .001	1.H > M 2.H > L
MET 45 Improving one's English from different websites	2.93	1.10	2.51	1.04	2.35	.98	P < .001	1.H > M 2.H > L
COG 2 Using new English words in a sentence so that one can remember them	2.87	.91	2.57	.82	2.38	.82	P < .001	1.H > M 2.H > L
COG 6 Reviewing English lessons often	2.87	.94	2.65	.80	2.50	.92	P < .001	1.H > M 2.H > L
SCI 35 Practicing speaking English with other students	2.80	.98	2.56	.91	2.42	.93	P < .001	1.H > M 2.H > L
SCI 46 Participating in extra-curricular activities	2.58	1.04	2.21	.99	2.08	.914	P < .001	1.H > M 2.H > L
COG 11 Writing diaries or short articles in English	2.54	.92	2.26	.93	2.14	.94	P < .001	1.H > M 2.H > L
Individual LLSs	High (n=367)		Moderate (n=291)		Low (n=178)		Sig. Level	Variation Pattern
Used more by students who enjoy English learning at high level than at low level (9 LLSs)	Mean	S.D	Mean	S.D	Mean	S.D		
COG 3 Connecting the sound of a new English word and an image or picture of the word to help one remember the word	3.04	1.09	2.85	.94	2.72	1.04	P < .001	H > L
COG 18 Reading English without looking up every new word	3.34	1.08	3.26	.96	3.08	1.11	P < .05	H > L
COG 19 Trying to predict what the other person will say next in English	2.66	1.14	2.47	1.00	2.39	1.03	P < .05	H > L
AFF 27 Trying to relax whenever feeling afraid of using English	3.27	.94	3.22	.98	3.04	1.03	P < .05	H > L
AFF 29 Giving oneself a reward or treat when one does well in English	3.20	1.16	3.02	1.10	2.88	1.09	P < .01	H > L
SCI 33 Asking the interlocutor to slow down or say it again if one doesn't understand	3.58	.99	3.40	.93	3.27	.97	P < .01	H > L

Table 4.13 Variation in Individual LLS Use by Enjoyment of English learning**(Cont.)**

SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters	2.26	1.09	2.19	1.05	1.96	1.04	P < .001	H > L
COG 40 Remembering new expressions by two-way translation	3.03	1.05	2.89	1.02	2.65	1.13	P < .001	H > L
MET 47 Doing a lot of exam-oriented exercises before exams	3.51	1.09	3.33	1.05	3.22	1.02	P < .01	H > L
Individual LLSs	High (n=367)		Moderate (n=291)		Low (n=178)		Sig. Level	Variation Pattern
Used more by students who enjoy English learning at higher level than at lower level (5 LLSs)	Mean	S.D	Mean	S.D	Mean	S.D		
COG 1 Thinking of relationships between what one already knows and new things one learns in English	3.26	.79	2.99	.71	2.76	.83	P < .001	H > M > L
SCI 8 Trying to talk like native speakers	3.10	1.11	2.84	1.01	2.58	1.04	P < .001	H > M > L
MET 26 Thinking about one's progress in learning English	3.35	.97	3.11	.85	2.86	.84	P < .001	H > M > L
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	3.50	.98	3.25	.93	2.92	.94	P < .001	H > M > L
SCI 37 Trying to learn about the culture of English-speaking countries	2.89	1.01	3.27	.91	2.89	1.01	P < .001	H > M > L
Individual LLSs	High (n=367)		Moderate (n=291)		Low (n=178)		Sig. Level	Variation Pattern
Used more by students who enjoy English learning at high and moderate level than at low level (1 LLS)	Mean	S.D	Mean	S.D	Mean	S.D		
COG 7 Remembering new English words or phrases by remembering the context in which they appear	3.20	.95	3.11	.89	2.86	.95	P < .001	1. H > L 2. M > L

Note: 'H' means 'high', 'M' means 'moderate', and 'L' means 'low'

We can see from Table 4.13 above, the ANOVA results reveal that significant variations were found in use of 41 individual LLSs, among which are 15 cognitive strategies (COG), 11 metacognitive strategies (MET), 8 affective strategies (AFF), and 7 sociocultural-interactive strategies (SCI).

The post hoc Fisher's LSD test shows that 4 variation patterns were found: 1) $H > M, H > L$; 2) $H > L$; 3) $H > M > L$; 4) $H > L, M > L$. In 1) ' $H > M, H > L$ ' variation pattern, 26 strategies were reported being used significantly more frequently by pre-service teachers who enjoyed English learning at the high level than those who enjoyed English learning at the moderate level and low level. Examples are: '*Using a circumlocution if one can't think of a precise English word*' (COG 20), '*Telling oneself that there is always more to learn when learning English*' (AFF 30), and '*Always encouraging oneself not to be discouraged by poor exam results*' (AFF 48). In 2) ' $H > L$ ' variation pattern, 9 strategies were reported being used significantly more frequently by pre-service teachers who enjoyed English learning at the high level than those who enjoyed English learning at the low level. Examples are: '*Connecting the sound of a new English word and an image or picture of the word to help one remember the word*' (COG 3)', '*Reading English without looking up every new word*' (COG 18)' and '*Trying to predict what the other person will say next in English*' (COG 19)'. In 3) ' $H > M > L$ ' variation pattern, 5 strategies were reported being used significantly more frequently by pre-service teachers who enjoyed English learning at higher level than those at lower level. Examples are: '*Thinking of relationships between what one already knows and new things one learns in English*' (COG 1)', and '*Trying to talk like native speakers*' (SCI 8)'. In 4) ' $H > L, M > L$ ' variation pattern, only 1 strategy was reported being used significantly more frequently by pre-service teachers who enjoyed English learning at both high level and moderate level than those at the low level. The strategy is: '*Remembering new English words or phrases by remembering the context in which they appear*' (COG 7)'.


4.3.3.3 Variation in Individual LLS Use by Language Proficiency

Regarding pre-service teachers' language proficiency, as mentioned in Sections 4.3.1 and 4.3.2.3, significant variations were found in student' reported overall LLS use and three categories: MET, COG and SCI. In this section, learners' individual LLS use was explored. As suggested by Green and Oxford (1995), the patterns of variation can be classified as 'positive', indicating that strategies are used significantly more frequently by students with higher language proficiency level than those with lower proficiency level; or 'negative', showing that strategies are used significantly more frequently by students with lower language proficiency level than those with higher proficiency level; or 'mixed', showing that there is a curvilinear relationship between strategy use and language proficiency.

The results from the ANOVA test and post hoc Fisher's LSD test shown in Table 4.14 reveal that 23 individual LLSs varied significantly by language proficiency. All of the 23 strategies could be taken as 'positive' variation pattern. No strategies have been classified as negative or mixed pattern of variation.

Table 4.14 Variation in Individual LLS Use by Language Proficiency Classified as ‘Positive’

Individual LLSs	High (n=80)		Moderate (n=325)		Low (n=431)		Sig. Level	Variation Pattern
	Mean	S.D	Mean	S.D	Mean	S.D		
Used more by students with high and moderate language proficiency than with low proficiency (9 LLSs)								
COG 14 Trying not to translate verbatim	3.48	.842	3.28	.959	2.99	.969	P < .001	1. H > L 2. M > L
SCI 43 Participating in English classroom activities	3.45	1.07	3.21	.97	2.95	1.02	P < .001	1. H > L 2. M > L
COG 7 Remembering new English words or phrases by remembering the context in which they appear	3.35	.98	3.18	.88	2.99	.96	P < .01	1. H > L 2. M > L
SCI 8 Trying to talk like native speakers	3.30	.97	2.99	1.08	2.75	1.07	P < .001	1. H > L 2. M > L
COG 3 Connecting the sound of a new English word and an image or picture of the word to help one remember the word	3.09	.98	2.97	1.06	2.82	1.02	P < .05	1. H > L 2. M > L
COG 6 Reviewing English lessons often	2.95	.94	2.82	.91	2.59	.87	P < .001	1. H > L 2. M > L
COG 2 Using new English words in a sentence so that one can remember them	2.89	.96	2.80	.88	2.52	.84	P < .001	1. H > L 2. M > L
SCI 46 Participating in extra-curricular activities	2.61	1.03	2.52	1.01	2.17	.99	P < .001	1. H > L 2. M > L
SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters	2.39	1.18	2.30	1.05	2.03	1.05	P < .01	1. H > L 2. M > L
Individual LLSs	High (n=80)		Moderate (n=325)		Low (n=431)		Sig. Level	Variation Pattern
Used more by students with high language proficiency than with low proficiency (6 LLSs)	Mean	S.D	Mean	S.D	Mean	S.D		
MET 9 Watching English- speaking movies or TV programs	3.88	.86	3.69	.86	3.55	1.00	P < .01	H > L
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	3.74	.92	3.51	.97	3.38	1.01	P < .01	H > L
COG 21 Improving one's English from his/her own mistakes	3.45	1.01	3.25	.96	3.12	1.04	P < .05	H > L
MET 24 Looking for opportunities/ chances to read as much as possible in English	3.22	.97	2.97	1.00	2.81	.95	P < .01	H > L
MET 25 Having clear goals for improving one's English skills	3.22	1.19	3.06	1.06	2.90	1.00	P < .05	H > L
MET 23 Planning one's schedule so one will have enough time to learn English	3.02	1.13	2.73	1.10	2.60	1.00	P < .01	H > L

Table 4.14 Variation in Individual LLS Use by Language Proficiency Classified as ‘Positive’ (Cont.)

Individual LLSs	High (n=80)		Moderate (n=325)		Low (n=431)		Sig. Level	Variation Pattern
	Mean	S.D	Mean	S.D	Mean	S.D		
Used more by students with higher language proficiency than with lower proficiency (4 LLSs)								
COG 1 Thinking of relationships between what one already knows and new things one learns in English	3.48	.73	3.13	.76	2.93	.80	P < .001	H > M > L
MET 38 Practicing English reading on the Internet	3.30	.89	2.96	1.01	2.77	1.09	P < .001	H > M > L
MET 10 Reading newspapers, magazines, and books in English	3.26	1.03	2.94	.90	2.74	.92	P < .001	H > M > L
MET 45 Improving one’s English from different websites	3.26	.94	2.75	1.08	2.48	1.06	P < .001	H > M > L
Individual LLSs	High (n=80)		Moderate (n=325)		Low (n=431)		Sig. Level	Variation Pattern
Used more by students with moderate language proficiency than with low proficiency (3 LLSs)	Mean	S.D	Mean	S.D	Mean	S.D		
COG 15 Guessing the meaning of the unfamiliar English words	3.49	.99	3.53	.85	3.33	.90	P < .05	M > L
COG 18 Reading English without looking up every new word	3.40	1.07	3.34	1.01	3.17	1.07	P < .05	M > L
COG 11 Writing diaries or short articles in English	2.50	.96	2.45	.91	2.26	.95	P < .01	M > L
Individual LLSs	High (n=80)		Moderate (n=325)		Low (n=431)		Sig. Level	Variation Pattern
Used more by students with high language proficiency than with moderate and low proficiency (1 LLS)	Mean	S.D	Mean	S.D	Mean	S.D		
MET 47 Doing a lot of exam-oriented exercises before exams	3.01	1.10	3.43	1.08	3.43	1.04	P < .01	1. H > M 2. H > L

Note: ‘H’ means ‘high’, ‘M’ means ‘moderate’, and ‘L’ means ‘low’

Based on the ANOVA results, Table 4.14 above presents that significant differences were found in the use of 23 individual LLSs, among which there are 10 COG strategies, 9 MET strategies, and 4 SCI strategies. The post hoc Fisher’s LSD test shows that all the variation patterns of the 23 strategies were on the ‘positive’ direction, with 5 patterns of variation: 1) H > L, M > L; 2) H > L; 3) H > M > L; 4) M > L; and 5) H > M, H > L. In the ‘H > L, M > L’ variation pattern, 9 strategies were

reported being used significantly more frequently by the pre-service teachers with both high and moderate language proficiency than those with low language proficiency. Examples are: *'Trying not to translate verbatim (COG 14)'*, *'Participating in English classroom activities (SCI 43)'*, and *'Remembering new English words or phrases by remembering the context in which they appear (COG 7)'*. In the 'H > L' variation pattern, 6 strategies were reported being used significantly more frequently by the participants with high language proficiency than those with low proficiency. Examples are: *'Watching English-speaking movies or TV programs (MET 9)'*, *'Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone (MET 12)'*, and *'Improving one's English from his/her own mistakes (COG 21)'*. In the 'H > M > L' variation pattern, 4 strategies were reported being used significantly more frequently by pre-service teachers with higher language proficiency than those with lower proficiency. Examples are: *'Thinking of relationships between what one already knows and new things one learns in English (COG 1)'*, and *'Practicing English reading on the Internet (MET 38)'*. In the 'H > L' variation pattern, 3 strategies were reported being used significantly more frequently by the participants with moderate language proficiency than those with low proficiency. Examples are: *'Guessing the meaning of the unfamiliar English words (COG 15)'*, and *'Reading English without looking up every new word (COG 18)'*. In the 'H > M, H > L' variation pattern, only 1 strategy was reported being employed significantly more frequently by the participants with high language proficiency than those with moderate and low proficiency. The strategy item is *'Doing a lot of exam-oriented exercises before exams (MET 47)'*.

4.3.3.4 Variation in Individual LLS Use by Strategy Awareness

Regarding strategy awareness, as can be seen in Sections 4.3.1 and 4.3.2.4, there were significant variations in pre-service teachers' reported use of overall LLS, as well as in LLS use in all the 4 categories: MET, COG, AFF and SCI. In this section, the results from the Chi-square tests shown in Table 4.15 varied significantly in use of 37 out of 48 individual LLSs related to this variable.

Table 4.15 Variation in Individual LLS Use by Strategy Awareness

Individual LLSs	% of high use (4 and 5)		Observed χ^2
	High	Low	$p < .05$
Used more by pre-service teachers with high strategy awareness (37 LLSs)			
COG 20 Using a circumlocution if one can't think of a precise English word	69.0	34.8	$\chi^2 = 21.76$ $p < .001$
AFF 48 Always encouraging oneself not to be discouraged by poor exam results	66.3	34.8	$\chi^2 = 18.43$ $p < .001$
AFF 30 Telling oneself that there is always more to learn when learning English	64.5	13.0	$\chi^2 = 31.16$ $p < .001$
MET 42 Systematically reviewing vocabulary, texts and notes before exams	62.7	34.8	$\chi^2 = 9.76$ $p < .01$
MET 9 Watching English-speaking movies or TV programs	59.4	39.1	$\chi^2 = 9.87$ $p < .01$
MET 47 Doing a lot of exam-oriented exercises before exams	51.0	21.7	$\chi^2 = 9.94$ $p < .01$
MET 22 Trying to find out how to learn English well	50.9	17.4	$\chi^2 = 36.24$ $p < .001$
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	49.8	34.8	$\chi^2 = 10.70$ $p < .01$
COG 4 Using vocabulary books or electronic dictionaries to remember new English words	48.3	21.7	$\chi^2 = 13.79$ $p < .01$
COG 15 Guessing the meaning of the unfamiliar English words	48.0	34.8	$\chi^2 = 9.16$ $p < .05$
COG 18. Reading English without looking up every new word	46.7	17.4	$\chi^2 = 22.94$ $p < .001$
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	45.1	13.0	$\chi^2 = 20.80$ $p < .001$
COG 41 Trying to understand the complex English sentences by analyzing their grammatical structures	45.1	30.4	$\chi^2 = 16.72$ $p < .001$
COG 5 Saying or writing new English words several times	44.0	21.7	$\chi^2 = 9.73$ $p < .01$
SCI 37 Trying to learn about the culture of English-speaking countries	42.8	26.1	$\chi^2 = 10.58$ $p < .01$

Table 4.15 Variation in Individual LLS Use by Strategy Awareness (Cont.)

Individual LLSs	% of high use (4 and 5)		Observed χ^2
	High	Low	p < .05
AFF 27 Trying to relax whenever feeling afraid of using English	41.5	17.4	$\chi^2 = 14.27$ p < .01
COG 21 Improving one's English from his/her own mistakes	40.0	8.7	$\chi^2 = 13.96$ p < .01
AFF 29 Giving oneself a reward or treat when one does well in English.	40.0	13.0	$\chi^2 = 7.80$ p < .05
COG 14 Trying not to translate verbatim	37.4	13.0	$\chi^2 = 18.51$ p < .001
MET 26 Thinking about one's progress in learning English	35.2	17.4	$\chi^2 = 13.32$ p < .01
COG 7 Remembering new English words or phrases by remembering the context in which they appear	35.1	8.7	$\chi^2 = 15.74$ p < .001
SCI 43 Participating in English classroom activities	34.1	13.0	$\chi^2 = 11.27$ p < .01
COG 13 Getting the meaning of an English word by dividing it into parts that one understands, such as roots, prefixes, and suffixes	33.1	21.7	$\chi^2 = 6.90$ p < .05
MET 25 Having clear goals for improving one's English skills	30.4	13.0	$\chi^2 = 10.98$ p < .01
SCI 8 Trying to talk like native speakers	30.3	0.0	$\chi^2 = 18.52$ p < .001
AFF 32 Talking to someone else about how one feels when learning English	30.1	13.0	$\chi^2 = 11.68$ p < .01
MET 38 Practicing English reading on the Internet	28.8	13.0	$\chi^2 = 6.69$ p < .05
MET 24 Looking for opportunities/chances to read as much as possible in English	27.6	13.0	$\chi^2 = 14.18$ p < .01
COG 1 Thinking of relationships between what one already knows and new things one learns in English	26.7	4.3	$\chi^2 = 17.76$ p < .001
SCI 34 Asking one's English teacher or fluent speakers of English to correct when one is talking	25.1	4.3	$\chi^2 = 10.95$ p < .01
MET 10 Reading newspapers, magazines, and books in English	24.1	13.0	$\chi^2 = 12.43$ p < .01
MET 23 Planning one's schedule so one will have enough time to learn English.	22.0	0.0	$\chi^2 = 7.55$ p < .05
MET 45 Improving one's English from different websites	21.4	0.0	$\chi^2 = 9.72$ p < .01
COG 6 Reviewing English lessons often	20.2	4.3	$\chi^2 = 11.54$ p < .01
SCI 35 Practicing speaking English with other students	16.9	8.7	$\chi^2 = 6.08$ p < .05
COG 2 Using new English words in a sentence so that one can remember them	15.6	4.3	$\chi^2 = 8.67$ p < .05
SCI 46 Participating in extra-curricular activities	14.8	0.0	$\chi^2 = 6.10$ p < .05

As shown in Table 4.15 above, the Chi-square results reveal that significant variations in use of 37 individual LLSs were found in terms of pre-service teachers' strategy awareness, with the only variation pattern of 'high>low', indicating that a significantly greater percentage of participants with high strategy awareness reported high use of 37 strategies than those with low strategy awareness, among which there are 13 cognitive strategies (COG), 12 metastrategies (MET), 6 sociocultural-interactive strategies (SCI), and 6 affective strategies (AFF). Of the 37 strategies, 7 strategies were reported high frequency of use by more than 50 percent of the participants with high strategy awareness. Examples are, '*Using a circumlocution if one can't think of a precise English word*' (COG 20), '*Always encouraging oneself not to be discouraged by poor exam results*' (AFF 48), and '*Telling oneself that there is always more to learn when learning English*' (AFF 30).

4.3.3.5 Variation in Individual LLS Use by Personality Types

As shown in sections 4.3.1 and 4.3.2.5, based on the ANOVA results, the frequency of pre-service teachers' overall LLS use varies significantly according to personality types. There exist significant variations in all the four categories according to students' extroversion-introversion scale and significant variations in strategy use in MET, COG and SCI categories in respect of judging-perceiving scale. In this section, the results from the Chi-square tests reveal that 27 individual strategies varied significantly in terms of extroversion-introversion, and 13 individual strategies varied significantly in relation to judging-perceiving.

4.3.3.5.1 Variation in Individual LLS Use by Extroversion-Introversion

In this section, the results from the Chi-square tests reveal that 28 out of 48 individual LLSs varied significantly according to extroversion-introversion scale of personality types. Table 4.16 below presents the variations in pre-service teachers' reported strategy use.

Table 4.16 Variation in Individual LLS Use by Extroversion and Introversion

Individual LLSs	% of high use (4 and 5)		Observed χ^2
	Extroversion	Introversion	
Used more by extroverts (27 LLSs)			
SCI 33 Asking the interlocutor to slow down or say it again if one doesn't understand	55.6	44.7	$\chi^2 = 10.15$ $p < .01$
MET 12. Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	53.8	42.9	$\chi^2 = 11.38$ $p < .01$
COG 15 Guessing the meaning of the unfamiliar English words	51.2	42.4	$\chi^2 = 7.37$ $p < .05$
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	51.2	34.1	$\chi^2 = 24.76$ $p < .001$
SCI 37 Trying to learn about the culture of English-speaking countries	45.2	38.2	$\chi^2 = 8.51$ $p < .05$
AFF 29 Giving oneself a reward or treat when one does well in English	42.7	34.1	$\chi^2 = 28.76$ $p < .001$
SCI 43 Participating in English classroom activities	41.7	21.5	$\chi^2 = 48.88$ $p < .001$
COG 13 Getting the meaning of an English word by dividing it into parts that one understands, such as roots, prefixes, and suffixes	37.1	26.5	$\chi^2 = 10.37$ $p < .01$
MET 25 Having clear goals for improving one's English skills	33.5	24.7	$\chi^2 = 12.59$ $p < .01$
AFF 32 Talking to someone else about how one feels when learning English	32.9	25.0	$\chi^2 = 13.11$ $p < .01$
SCI 8 Trying to talk like native speakers	31.3	26.8	$\chi^2 = 17.29$ $p < .001$
MET 38 Practicing English reading on the Internet	30.8	24.7	$\chi^2 = 10.64$ $p < .01$
MET 24 Looking for opportunities/ chances to read as much as possible in English	30.6	22.1	$\chi^2 = 9.98$ $p < .01$
SCI 36 Asking for help from one's English teacher or friends	30.0	22.9	$\chi^2 = 9.90$ $p < .01$

Table 4.16 Variation in Individual LLS Use by Extroversion and Introversion**(Cont.)**

SCI 16 Using gestures to convey one's meaning during a conversation in English	29.4	21.2	$\chi^2 = 12.34$ $p < .01$
COG 1 Thinking of relationships between what one already knows and new things one learns in English	29.0	21.8	$\chi^2 = 6.04$ $p < .05$
SCI 34 Asking one's English teacher or fluent speakers of English to correct when one is talking	28.0	19.4	$\chi^2 = 9.92$ $p < .01$
MET 23 Planning one's schedule so one will have enough time to learn English	25.8	15.0	$\chi^2 = 16.07$ $p < .001$
MET 45 Improving one's English from different websites.	23.6	16.8	$\chi^2 = 13.82$ $p < .01$
Individual LLSs	% of high use (4 and 5)		Observed χ^2
Used more by extroverts (27 LLSs)	Extroversion	Introversion	
COG 6 Reviewing English lessons often	23.2	14.7	$\chi^2 = 11.35$ $p < .01$
SCI 35 Practicing speaking English with other students	21.6	9.4	$\chi^2 = 31.13$ $p < .001$
COG 2 Using new English words in a sentence so that one can remember them	17.7	11.8	$\chi^2 = 12.06$ $p < .01$
SCI 46 Participating in extra-curricular activities	16.3	11.5	$\chi^2 = 25.12$ $p < .001$
COG 17 Making up new words if one does not know the precise ones in English	14.9	9.1	$\chi^2 = 11.27$ $p < .01$
SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters	14.9	9.1	$\chi^2 = 9.95$ $p < .01$
MET 44 Attending extra classes at a language school	13.3	6.8	$\chi^2 = 21.42$ $p < .001$
COG 11 Writing diaries or short articles in English	11.5	10.6	$\chi^2 = 6.15$ $p < .05$
Used more by introverts (1 LLS)	Introversion	Extroversion	
AFF 31 Noticing whether one is nervous or not when reading or using English	43.2	37.9	$\chi^2 = 7.24$ $p < .05$

The Chi-square results in Table 4.16 above demonstrate that significant variations in use of 28 individual LLSs were found. Two variation patterns were found, i.e. 'extroversion > introversion', and 'introversion > extroversion'.

The first variation pattern ‘extroversion>introversion’ indicates that a significantly higher percentage of extroverts reported high use of 27 strategies than introverts, among which 4 strategies were reported high frequency of use by more than 50 percent of the extroverts: ‘*Asking the interlocutor to slow down or say it again if one doesn’t understand*’ (SCI 33), ‘*Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone*’ (MET 12), ‘*Guessing the meaning of the unfamiliar English words*’ (COG 15), and ‘*Encouraging oneself to speak English even when one is afraid of making mistakes*’ (AFF 28).

The second variation pattern is ‘introversion>extroversion’. A significantly higher percentage of introverts reported high use of only 1 strategy than extroverts, which is ‘*Noticing whether one is nervous or not when reading or using English*’ (AFF 31).

4.3.3.5.2 Variation in Individual LLS Use by Judging-Perceiving

In this section, the Chi-square tests results show that 13 out of 48 individual LLSs varied significantly by extroversion-introversion of personality types. Table 4.17 below presents the variations in pre-service teachers’ reported strategy use.

Table 4.17 Variation in Individual LLS Use by Judging and Perceiving

Individual LLSs	% of high use (4 and 5)		Observed χ^2
	Judging	Perceiving	p < .05
Used more by judgers (12 LLSs)			
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	51.3	42.5	$\chi^2 = 6.00$ p ≤ .05
COG 41 Trying to understand the complex English sentences by analyzing their grammatical structures	46.7	37.6	$\chi^2 = 8.64$ p < .05
AFF 28 Encouraging oneself to speak English even when being afraid of making mistakes	46.6	35.9	$\chi^2 = 6.52$ p < .05
COG 7 Remembering new English words or phrases by remembering the context in which they appear	36.5	26.5	$\chi^2 = 6.38$ p < .05
SCI 43 Participating in English classroom activities	35.9	24.9	$\chi^2 = 7.12$ p < .05
MET 26 Thinking about one's progress in learning English	35.7	30.9	$\chi^2 = 9.94$ p < .01
MET 25 Having clear goals for improving one's English skills	32.1	22.1	$\chi^2 = 10.84$ p < .01
SCI 36 Asking for help from one's English teacher or friends	27.2	27.1	$\chi^2 = 7.39$ p < .05
SCI 34 Asking one's English teacher or fluent speakers of English to correct when one is talking	26.4	17.7	$\chi^2 = 6.81$ p < .05
MET 23 Planning one's schedule so one will have enough time to learn English	23.5	13.8	$\chi^2 = 13.25$ p < .01
COG 6 Reviewing English lessons often	22.1	11.0	$\chi^2 = 12.71$ p < .01
MET 45 Improving one's English from different websites	21.8	17.1	$\chi^2 = 8.60$ p < .05
Used more by perceivers (1 LLS)	Perceiving	Judging	
COG 17 Making up new words if one does not know the precise ones in English	14.4	12.1	$\chi^2 = 13.31$ p < .01

As shown in Table 4.17 above, the Chi-square results demonstrate that significant variations in use of 13 individual LLSs were found according to judging-perceiving. Two variation patterns were found, i.e. 'judgers>perceivers', and 'perceivers > judgers'.

The first variation pattern is 'judgers>perceivers'. A significantly greater percentage of the judgers reported high use of 12 strategies than the perceivers,

among which 1 strategy was reported high frequency of use by more than 50 percent of the extroverts, which is, '*Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone*' (MET 12).

The second variation pattern is 'perceivers >judgers'. A significantly greater percentage of perceivers reported high use of only 1 strategy than judges, which is, '*Making up new words if one does not know the precise ones in English*' (COG 17), reported high frequency of use by much less than 50 percent of the perceivers.

4.4 Factor Analysis Results

Factor analysis is another approach to allow a research to make sense of a large number of correlations between variables, or a complex set of variables, by reducing them to a smaller number of factors which account for many of the original variables (Howitt & Cramer, 2000). It is particularly appropriate in exploratory research where the researcher aims to impose an orderly simplification upon a number of interrelated measures (Cohen & Mansion, 1994). However, it is more subjective and judgmental than most statistical techniques due to the subjectivity of interpreting the meaning of factors and the many possible variants of factor analysis (Howitt & Cramer, 2011).

For the present study, factor analysis were used to help the researcher seek the underlying structure of the whole set of LLSs in the SILL. It is exploratory rather than confirmatory, as the researcher does not have a clear idea or pre-assumption about what the factor structure might be.

In seeking the underlying structure of the LLSs across the SILL, a principle component factor analysis and varimax rotation was conducted on the correlations of the 48 LLSs, which varied significantly by the 5 independent variables. Initially, 12 factors were extracted with the eigenvalues equal to or greater than 1.00. Table 4.18 shows the eigenvalues or the sums of squared loadings of the extracted 12 factors.

Table 4.18 Sums of the Squared Factor Loadings of the Initial 12 Factors

Factors	Extraction Sums of Squared Loadings (Eigenvalues)		
	Total	% of Variance	Cumulative %
1	10.99	22.89	22.89
2	2.90	6.05	28.94
3	1.82	3.79	32.73
4	1.68	3.50	36.23
5	1.50	3.13	39.36
6	1.36	2.82	42.18
7	1.26	2.63	44.80
8	1.22	2.55	47.35
9	1.14	2.38	49.73
10	1.07	2.23	51.96
11	1.03	2.14	54.09
12	1.00	2.09	56.18

As can be seen in Table 4.18 above, the 12 factors accounted for 56.18% of the variability among the 48 LLSs. In fact, there could be as many factors as variables which a researcher started off with and this could make it difficult to interpret. Therefore, the researcher decided to explore further reducing the number of factors to 4, 5, 6, and 7. The results of the varimax rotation showed slightly different groupings of LLSs by these different numbers of factors. They were slightly different in terms of internal relationship among the strategies emerging under the same factors. However, when initial 5 factors were examined, 2 strategy items were excluded, and 1 item excluded when initial 7 factors were examined. Having also taken the factor interpretation and balance of items in each factor into consideration, the researcher

found that it would be more straightforward and appropriate to interpret the extracted 6 factors rather than 4 factors. The percentage of variance in Table 4.19 reveals that the first 6 principal components can explain about 42 percent of the total variation between the frequency of LLS use, meaning that about 58 percent of the variability was not explained by the 6 factors. Therefore, other influences may cause differences in LLS use.

For the present study, each factor has been described in terms of the content or relationship of the majority of the LLS items which appear under the same factor. Table 4.19 below gives a whole picture of the 6 extracted factors, the factor loadings on each strategy item, and the percentage of variance accounted for by each factor.

Table 4.19 List of the Six Extracted Factors

Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	% of variance
MET 26 Thinking about one's progress in learning English	.621	22.89
MET 23 Planning one's schedule so one will have enough time to learn English	.610	
MET 24 Looking for opportunities/chances to read as much as possible in English	.603	
MET 25 Having clear goals for improving one's English skills	.592	
MET 22 Trying to find out how to learn English well	.516	
AFF 27 Trying to relax whenever one feels afraid of using English	.507	
AFF 29 Giving oneself a reward or treat when one does well in English	.495	
COG 21 Improving one's English from his/her own mistakes	.477	
AFF 30 Telling oneself that there is always more to learn when learning English	.428	
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	.419	
COG 6 Reviewing English lessons often	.365	

Table 4.19: List of the Six Extracted Factors (Cont.)

Factor 2: Strategies for improving communication (9 items)	Factor Loading	% of variance
SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters	.674	6.05
MET 44 Attending extra classes at a language school	.641	
SCI 46 Participating in extra-curricular activities	.641	
SCI 35 Practicing speaking English with other students	.617	
COG 11 Writing diaries or short articles in English	.478	
SCI 34 Asking one's English teacher or fluent speakers of English to correct when one is talking	.452	
COG 17 Making up new words if one does not know the precise ones in English	.420	
SCI 43 Participating in English classroom activities	.369	
COG 40 Remembering new expressions by two-way translation	.311	
Factor 3: Strategies for breaking down obstacles and self-motivation (9 items)	Factor Loading	% of variance
SCI 33 Asking the interlocutor to slow down or say it again if one doesn't understand	.640	3.79
MET 47 Doing a lot of exam-oriented exercises before exams	.508	
MET 42 Systematically reviewing vocabulary, texts and notes before exams	.469	
SCI 36 Asking for help from one's English teacher or friends	.468	
AFF 32 Talking to someone else about how one feels when learning English	.440	
AFF 31 Noticing whether one is nervous or not when reading or using English	.432	
AFF 48 Always encouraging oneself not to be discouraged by poor exam results	.386	
COG 4 Using vocabulary books or electronic dictionaries to remember new English words	.378	
COG 5 Saying or writing new English words several times	.366	
Factor 4: Strategies for getting meaning (6 items)	Factor Loading	% of variance
COG 15 Guessing the meaning of the unfamiliar English words	.671	3.50
COG 18 Reading English without looking up every new word	.590	
COG 19 Trying to predict what the interlocutor will say	.512	
COG 14 Trying not to translate verbatim	.508	
COG 20 Using a circumlocution if one can't think of a precise English word	.467	
SCI 16 Using gestures to convey one's meaning during a conversation in English	.428	
Factor 5: Authentic language exposure strategies (7 items)	Factor Loading	% of variance
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	.638	3.13
MET 9 Watching English-speaking movies or TV programs	.631	
MET 45 Improving one's English from different websites	.574	
MET 38 Practicing English reading on the Internet	.521	
MET 10 Reading newspapers, magazines, and books in English	.512	
SCI 37 Trying to learn about the culture of English-speaking countries	.414	
SCI 8 Trying to talk like native speakers	.389	

Table 4.19: List of the Six Extracted Factors (Cont.)

Factor 6: Strategies for meaning retention (6 items)	Factor Loading	% of variance
COG 3 Connecting the sound of a new English word and an image or picture of the word to help one remember the word	.597	
COG 1 Thinking of relationships between what one already knows and new things one learns in English	.586	
COG 41 Trying to understand the complex English sentences by analyzing their grammatical structures	.480	2.82
COG 13 Getting the meaning of an English word by dividing it into parts that one understands, such as roots, prefixes, and suffixes	.473	
COG 7 Remembering new English words or phrases by remembering the context in which they appear	.466	
COG 2 Using new English words in a sentence so that one can remember them	.465	

Table 4.19 above provides the details of the six extracted factors as the results of the factor analysis, from which we can have the description as follows:

- Factor 1, termed as ‘strategies for providing general management and giving moral support’, accounted for 22.89 percent of the variance among the LLSs in the strategy questionnaire for the present investigation. It comprises eleven strategies, among which there are five metastrategies, 4 affective strategies and two cognitive strategies. Examples of metastrategies are: ‘MET 26 Thinking about one’s progress in learning English’, ‘MET 23 Planning one’s schedule so one will have enough time to learn English’, and ‘MET 24 Looking for opportunities/chances to read as much as possible in English’. Examples of affective strategies are: ‘AFF 27 Trying to relax whenever one feels afraid of using English’ and ‘AFF 29 Giving oneself a reward or treat when one does well in English’. The two of the affective strategies are ‘COG 21 Improving one’s English from his/her own mistakes’ and ‘COG 6 Reviewing English lessons often’.

- Factor 2, 'Strategies for improving communication' accounted for 6.05 percent of the whole strategy variance. It consists of nine LLSs, among which five are socio-cultural interactive strategies, three cognitive strategies and 1 metastrategy. Examples of socio-cultural interactive strategies are 'SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters', 'SCI 46 Participating in extra-curricular activities', and 'SCI 35 Practicing speaking English with other students'. Examples of cognitive strategies are 'COG 11 Writing diaries or short articles in English' and 'COG 17. Making up new words if one does not know the precise ones in English'. The only one metastrategy is 'MET 44 Attending extra classes at a language school'.
- Factor 3, 'Strategies for breaking down obstacles and self-motivation' accounted for 3.79 percent of the variance of the LLS items. It includes nine learning strategies, with three affective strategies, two socio-cultural interactive strategies, two metastrategies, and two cognitive strategies. The affective strategies are as follows: 'AFF 32 Talking to someone else about how one feels when learning English', 'AFF 31. Noticing whether one is nervous or not when reading or using English', and 'AFF 48 Always encouraging oneself not to be discouraged by poor exam results'. The socio-cultural interactive strategies are 'SCI 33. Asking the interlocutor to slow down or say it again if one doesn't understand', 'SCI 46 Participating in extra-curricular activities', and 'SCI 36 Asking for help from one's English teacher or friends'. The metastrategies are 'MET 47 Doing a lot of exam-oriented exercises before exams' and 'MET 42.

Systematically reviewing vocabulary, texts and notes before exams'. The cognitive strategies are COG 4 'Using vocabulary books or electronic dictionaries to remember new English words' and 'COG 5 Saying or writing new English words several times'.

- Factor 4, which is termed 'Strategies for getting meaning', accounted for 3.50 percent of the variance of the strategy items. This factor comprises seven LLSs together, with five cognitive strategies and one socio-cultural interactive strategy. Examples of cognitive strategies are 'COG 15 Guessing the meaning of the unfamiliar English words', 'COG 18 Reading English without looking up every new word', and 'COG 19 Trying to predict what the interlocutor will say'. The only one socio-cultural interactive strategy is 'SCI 16 Using gestures to convey one's meaning during a conversation in English'.
- Factor 5, 'Authentic language exposure strategies' accounted for 3.13 percent of the variance of strategy items. Among the seven strategies, five belong to metastrategies and two socio-cultural interactive strategies. Examples of metastrategies are 'MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone', 'MET 9 Watching English-speaking movies or TV programs', and 'MET 45 Improving one's English from different websites'. The two socio-cultural interactive strategies are 'SCI 37 Trying to learn about the culture of English-speaking countries' and 'SCI 8 Trying to talk like native speakers'.
- Factor 6, 'Strategies for meaning retention' accounted for 2.82 percent of the whole strategy variance. In this factor, all the six strategy items

categorize in cognitive strategies. Examples are ‘COG 3 Connecting the sound of a new English word and an image or picture of the word to help one remember the word’, ‘COG 1 Thinking of relationships between what one already knows and new things one learns in English’, and ‘COG 41 Trying to understand the complex English sentences by analyzing their grammatical structures’.

Above are the results of the factor analysis, through which the underlying factors of the LLSs, the factor loading for each strategy item, and the percentage of variance of each factor have been identified. The next step is to examine which of these factors are strongly related to each of the five variables in the present investigation.

To determine such a relationship, factors which are strongly related to a particular variable are emphasized. With the aim to discuss the factor analysis results in the following section, the criteria for strong relation between the factors and each of the variables suggested by Seliger and Shohamy (1989) are followed, i.e. a factor can be taken into consideration to be strongly related to a variable if half or more of the language learning strategies in that particular factor have a loading of .50 or above, showing a significant variation in relation to that variable.

In the present study, the results of the varimax rotation show that 2 extracted factors appeared to have strong relationship with ‘gender’, 3 factors were strongly related to ‘enjoyment of English learning’, ‘language proficiency’ and ‘strategy awareness’, 1 factor strongly related to personality type judging and perceiving scale, and 2 factors strongly related to personality type extroversion and introversion scale. Following are the full details of factors which were found strongly related to each of the variables.

4.4.1 Factors Strongly Related to ‘Gender’

Table 4.20 below demonstrates two factors which were strongly related to pre-service teachers’ ‘gender’. As reported in the previous sections 4.3.1 and 4.3.2.1, the ANOVA results reveal significant variations in pre-service teachers’ reported use of language learning strategies in overall and under the COG and AFF categories according to their ‘gender’. Meanwhile, the results of factor analysis reveal that two factors, namely Factors 1 and 4, were found having strong relationship with this variable, which have confirmed the ANOVA results in terms of variations in their reported use of LLSs. The three factors which were found to be strongly related to gender are presented in Table 4.20 below.

Table 4.20 Factors Strongly Related to ‘Gender’

Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	Comment
MET 26 Thinking about one’s progress in learning English	.621	N.S.
MET 23 Planning one’s schedule so one will have enough time to learn English	.610	N.S.
MET 24 Looking for opportunities/chances to read as much as possible in English	.603	N.S.
MET 25 Having clear goals for improving one’s English skills	.592	Male >Female
MET 22 Trying to find out how to learn English well	.516	Female > Male
AFF 27 Trying to relax whenever one feels afraid of using English	.507	Male >Female
AFF 29 Giving oneself a reward or treat when one does well in English	.495	N.S.
COG 21 Improving one’s English from his/her own mistakes	.477	N.S.
AFF 30 Telling oneself that there is always more to learn when learning English	.428	Female > Male
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	.419	N.S.
COG 6 Reviewing English lessons often	.365	N.S.

Table 4.20 Factors Strongly Related to ‘Gender’ (Cont.)

Factor 4: Strategies for getting meaning (6 items)	Factor Loading	Comment
COG 15 Guessing the meaning of the unfamiliar English words	.671	Female > Male
COG 18 Reading English without looking up every new word	.590	Female > Male
COG 19 Trying to predict what the interlocutor will say	.512	N.S.
COG 14 Trying not to translate verbatim	.508	Male >Female
COG 20 Using a circumlocution if one can't think of a precise English word	.467	Female > Male
SCI 16 Using gestures to convey one's meaning during a conversation in English	.428	N.S.

4.4.2 Factors Strongly Related to ‘Enjoyment of English Learning’

Table 4.21 below shows that three factors were strongly related to ‘enjoyment of English learning’. As reported in the previous sections 4.3.1 and 4.3.2.2, the ANOVA results reveal significant variations in pre-service teachers’ reported use of LLSs in overall and under all the four categories: MET, COG, AFF and SCI, according to their ‘enjoyment of English learning’. Meanwhile, the results of factor analysis reveal that three factors, namely Factors 1, 4 and 5, were found having strong relationship with this variable, which have confirmed the ANOVA results in terms of variations in their reported use of LLSs. The three factors which were found to be strongly related to enjoyment of English learning are presented in Table 4.21 below.

Table 4.21 Factors Strongly Related to ‘Enjoyment of English Learning’

Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	Comment
MET 26 Thinking about one’s progress in learning English	.621	high > moderate > low
MET 23 Planning one’s schedule so one will have enough time to learn English	.610	high > moderate > low
MET 24 Looking for opportunities/chances to read as much as possible in English	.603	high > moderate > low
MET 25 Having clear goals for improving one’s English skills	.592	high > moderate > low
MET 22 Trying to find out how to learn English well	.516	high > moderate > low
AFF 27 Trying to relax whenever one feels afraid of using English	.507	N.S.
AFF 29 Giving oneself a reward or treat when one does well in English	.495	N.S.
COG 21 Improving one’s English from his/her own mistakes	.477	high > moderate > low
AFF 30 Telling oneself that there is always more to learn when learning English	.428	high > moderate > low
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	.419	high > moderate > low
COG 6 Reviewing English lessons often	.365	high > moderate > low
Factor 4: Strategies for getting meaning (6 items)	Factor Loading	Comment
COG 15 Guessing the meaning of the unfamiliar English words	.671	high > low > moderate
COG 18 Reading English without looking up every new word	.590	high > moderate > low
COG 19 Trying to predict what the interlocutor will say	.512	high > moderate > low
Factor 4: Strategies for getting meaning (6 items)	Factor Loading	Comment
COG 14 Trying not to translate verbatim	.508	high > moderate > low
COG 20 Using a circumlocution if one can’t think of a precise English word	.467	high > low > moderate
SCI 16 Using gestures to convey one’s meaning during a conversation in English	.428	N.S.
Factor 5: Authentic language exposure strategies (7 items)	Factor Loading	Comment
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	.638	high > moderate > low
MET 9 Watching English-speaking movies or TV programs	.631	high > low > moderate
MET 45 Improving one’s English from different websites	.574	high > moderate > low
MET 38 Practicing English reading on the Internet	.521	high > moderate > low
MET 10 Reading newspapers, magazines, and books in English	.512	high > moderate > low
SCI 37 Trying to learn about the culture of English-speaking countries	.414	high > moderate > low
SCI 8 Trying to talk like native speakers	.389	high > moderate > low

4.4.3 Factors Strongly Related to ‘Language Proficiency’

Table 4.22 below demonstrates all the 6 factors were strongly related to ‘language proficiency’. As reported in the sections 4.3.1 and 4.3.2.3, the ANOVA results reveal significant variations in students’ reported LLS use in overall and under the MET, COG and SCI categories. Meanwhile, Factors 1, 4 and 5 were found having strong relationship with this variable, which have confirmed the ANOVA results. The 3 factors strongly related to language proficiency are presented in Table 4.22.

Table 4.22 Factors Strongly Related to ‘Language Proficiency’

Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	Comment
MET 26 Thinking about one’s progress in learning English	.621	N.S.
MET 23 Planning one’s schedule so one will have enough time to learn English	.610	high>moderate>low
MET 24 Looking for opportunities/chances to read as much as possible in English	.603	high>moderate>low
MET 25 Having clear goals for improving one’s English skills	.592	high>moderate>low
MET 22 Trying to find out how to learn English well	.516	N.S.
AFF 27 Trying to relax whenever one feels afraid of using English	.507	N.S.
Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	Comment
AFF 29 Giving oneself a reward or treat when one does well in English	.495	N.S.
COG 21 Improving one’s English from his/her own mistakes	.477	N.S.
AFF 30 Telling oneself that there is always more to learn when learning English	.428	N.S.
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	.419	moderate>high>low
COG 6 Reviewing English lessons often	.365	high>moderate>low

Table 4.22 Factors Strongly Related to ‘Language Proficiency’ (Cont.)

Factor 4: Strategies for getting meaning (6 items)	Factor Loading	Comment
COG 15 Guessing the meaning of the unfamiliar English words	.671	moderate > high > low
COG 18 Reading English without looking up every new word	.590	N.S.
COG 19 Trying to predict what the interlocutor will say	.512	N.S.
COG 14 Trying not to translate verbatim	.508	high > moderate > low
COG 20 Using a circumlocution if one can't think of a precise English word	.467	N.S.
SCI 16 Using gestures to convey one's meaning during a conversation in English	.428	N.S.
Factor 5: Authentic language exposure strategies (7 items)	Factor Loading	Comment
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	.638	N.S.
MET 9 Watching English-speaking movies or TV programs	.631	high > moderate > low
MET 45 Improving one's English from different websites	.574	high > moderate > low
MET 38 Practicing English reading on the Internet	.521	high > moderate > low
MET 10 Reading newspapers, magazines, and books in English	.512	high > moderate > low
SCI 37 Trying to learn about the culture of English-speaking countries	.414	N.S.

4.4.4 Factors Strongly Related to ‘Strategy Awareness’

Table 4.23 below demonstrates all the 6 factors strongly related to ‘strategy awareness’. As reported in sections 4.3.1 and 4.3.2.4, the ANOVA results reveal significant variations in pre-service teachers’ reported use of LLSs in overall and under all the four categories according to their ‘strategy awareness’. Meanwhile, the results of factor analysis reveal that three factors, i.e., Factors 1, 4 and 5, were found having strong relationship with this variable, which have confirmed the ANOVA results in terms of variations in their reported LLS use. The 3 factors which were found to be strongly related to strategy awareness are presented in Table 4.23 below.

Table 4.23 Factors Strongly Related to ‘Strategy Awareness’

Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	Comment
MET 26 Thinking about one’s progress in learning English	.621	High > low
MET 23 Planning one’s schedule so one will have enough time to learn English	.610	High > low
MET 24 Looking for opportunities/chances to read as much as possible in English	.603	High > low
MET 25 Having clear goals for improving one’s English skills	.592	High > low
MET 22 Trying to find out how to learn English well	.516	High > low
AFF 27 Trying to relax whenever one feels afraid of using English	.507	High > low
AFF 29 Giving oneself a reward or treat when one does well in English	.495	High > low
COG 21 Improving one’s English from his/her own mistakes	.477	High > low
AFF 30 Telling oneself that there is always more to learn when learning English	.428	High > low
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	.419	High > low
COG 6 Reviewing English lessons often	.365	High > low
Factor 4: Strategies for getting meaning (6 items)	Factor Loading	Comment
COG 15 Guessing the meaning of the unfamiliar English words	.671	High > low
COG 18 Reading English without looking up every new word	.590	High > low
COG 19 Trying to predict what the interlocutor will say	.512	N.S.
COG 14 Trying not to translate verbatim	.508	High > low
COG 20 Using a circumlocution if one can’t think of a precise English word	.467	High > low
SCI 16 Using gestures to convey one’s meaning during a conversation in English	.428	N.S.
Factor 5: Authentic language exposure strategies (7 items)	Factor Loading	Comment
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	.638	High > low
MET 9. Watching English-speaking movies or TV programs	.631	High > low
MET 45 Improving one’s English from different websites	.574	High > low
MET 38 Practicing English reading on the Internet	.521	High > low
MET 10 Reading newspapers, magazines, and books in English	.512	High > low
SCI 37 Trying to learn about the culture of English-speaking countries	.414	High > low
SCI 8 Trying to talk like native speakers	.389	High > low

4.4.5 Factors Strongly Related to ‘Personality Types’

4.4.5.1 Factors Strongly Related to ‘Extroversion and Introversion’

Table 4.24 below demonstrates five factors were strongly related to personality type ‘extroversion and introversion’ scale. As reported in the previous sections 4.3.1 and 4.3.2.5.2, the ANOVA results reveal significant variations in pre-service teachers’ reported use of language learning strategies in overall and under all the four MET, COG, AFF and SCI categories in terms of their personality type ‘extroversion and introversion’ scale. Meanwhile, the results of factor analysis reveal that two factors, i.e., Factors 1 and 5 were found having strong relationship with this variable. These factors which were found to be strongly related to ‘extroversion and introversion’ are presented in Table 4.24 below.

Table 4.24 Factors Strongly Related to ‘Extroversion and Introversion’

Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	Comment
MET 26 Thinking about one’s progress in learning English	.621	N.S.
MET 23 Planning one’s schedule so one will have enough time to learn English	.610	Extroversion> Introversion
MET 24 Looking for opportunities/chances to read as much as possible in English	.603	Extroversion> Introversion
MET 25 Having clear goals for improving one’s English skills	.592	Extroversion> Introversion
MET 22 Trying to find out how to learn English well	.516	N.S.
AFF 27 Trying to relax whenever one feels afraid of using English	.507	N.S.
AFF 29 Giving oneself a reward or treat when one does well in English	.495	Extroversion> Introversion
COG 21 Improving one’s English from his/her own mistakes	.477	N.S.
AFF 30 Telling oneself that there is always more to learn when learning English	.428	N.S.
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	.419	Extroversion> Introversion
COG 6 Reviewing English lessons often	.365	Extroversion> Introversion

Table 4.24 Factors Strongly Related to ‘Extroversion and Introversion’ (Cont.)

Factor 5: Authentic language exposure strategies (7 items)	Factor Loading	Comment
MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone	.638	Extroversion> Introversion
MET 9 Watching English-speaking movies or TV programs	.631	N.S.
Factor 5: Authentic language exposure strategies (7 items)	Factor Loading	Comment
MET 45 Improving one’s English from different websites	.574	Extroversion> Introversion
MET 38 Practicing English reading on the Internet	.521	Extroversion> Introversion
MET 10 Reading newspapers, magazines, and books in English	.512	N.S.
SCI 37 Trying to learn about the culture of English-speaking countries	.414	Extroversion> Introversion
SCI 8 Trying to talk like native speakers	.389	Extroversion> Introversion

4.4.5.2 Factors Strongly Related to ‘Judging and Perceiving’

Table 4.25 below shows Factor 1 was strongly related to judging-perceiving scale. As reported in 4.3.1 and 4.3.2.5.1, the ANOVA results reveal significant variations in pre-service teachers’ reported use of LLSs in overall and under MET, COG and SCI categories by this variable. Meanwhile, the results of factor analysis reveal that only Factor 1 was found having strong relationship with this variable. This factor strongly related to judging-perceiving is presented below.

Table 4.25 Factors Strongly Related to ‘Judging and Perceiving’

Factor 1: Strategies for providing general management and giving moral support (11 items)	Factor Loading	Comment
MET 26 Thinking about one’s progress in learning English	.621	Judging > Perceiving
MET 23 Planning one’s schedule so one will have enough time to learn English	.610	Judging > Perceiving
MET 24 Looking for opportunities/chances to read as much as possible in English	.603	N.S.
MET 25 Having clear goals for improving one’s English skills	.592	Judging > Perceiving
MET 22 Trying to find out how to learn English well	.516	N.S.
AFF 27 Trying to relax whenever one feels afraid of using English	.507	N.S.
AFF 29 Giving oneself a reward or treat when one does well in English	.495	N.S.
COG 21 Improving one’s English from his/her own mistakes	.477	N.S.
AFF 30 Telling oneself that there is always more to learn when learning English	.428	N.S.
AFF 28 Encouraging oneself to speak English even when one is afraid of making mistakes	.419	Judging > Perceiving
COG 6 Reviewing English lessons often	.365	Judging > Perceiving

In conclusion, six factors were extracted as the results of factor analysis. Factors 1 and 4 were found to be strongly related to pre-service teachers’ gender. Factors 1, 4 and 5 were found having strong relationship with enjoyment of English learning, language proficiency and strategy awareness. For personality types, Factor 1 is strongly related to judging and perceiving scale, and Factors 1 and 5 were found having strong relationship with extroversion and introversion scale. Table 4.26 below summarizes the strong relationship between the factors and the variables for the present investigation.

Table 4.26 Summary of Factors Strongly Related to Different Variables

Extracted Factors	Gender	Enjoyment of English Learning	Language Proficiency	Strategy Awareness	Personality Types	
					Judging & Perceiving	Extroversion & Introversion
Factor 1	YES	YES	YES	YES	YES	YES
Factor 2	No	No	No	No	No	No
Factor 3	No	No	No	No	No	No
Factor 4	YES	YES	YES	YES	No	No
Factor 5	No	YES	YES	YES	No	YES
Factor 6	No	No	No	No	No	No

4.5 Summary

In sum, this chapter has specified the analysis of data obtained through the 48-item LLS questionnaire of language learning strategy use. Firstly, the frequency of language learning strategy use at three different levels reported by 836 English-major pre-service teachers in Midwest China is presented. Secondly, the variations in frequency of pre-service teachers' reported LLS use at three different levels related to the five investigated variables: gender, enjoyment of English learning, language proficiency, strategy awareness and personality types have been systematically examined. An analysis of Variance (ANOVA) and Chi-square tests were adopted as the main statistical methods of data analysis. At last, factor analysis was adopted to explore the underlying factors underlying factors in LLSs reported employed by these pre-service teachers. The research results presented in this chapter can be summarized as follows.

1. 836 pre-service teachers reported employing language learning strategies at the moderate level in terms of the frequency of the overall LLS use and the frequency of strategy use in the MET, COG, AFF and SCI categories. Regarding the frequency of use of the individual LLSs, they reported

employing 38 strategies at the moderate level, 5 strategies at the high level and 5 at the low level.

2. Based on the ANOVA results, the significant variations in frequency of pre-service teachers' overall strategy use were found in relation to all the five investigated variables. Significant differences were found in LLS use in the COG and AFF categories according to gender, in all the four MET, COG, AFF and SCI categories according to enjoyment of English learning, strategy awareness, and personality type extroversion and introversion scale, and in the MET, COG and SCI categories in terms of language proficiency and personality type judging and perceiving scale.
3. For the significant variations in pre-service teachers' use of individual LLSs, based on the results of the Chi-square tests, 16 strategies varied significantly according to gender; 37 strategies varied significantly regarding strategy awareness; and with regard to personality types, significant variations exist in 27 strategies by extroversion-introversion scale, and in 13 strategies by judging-perceiving scale. The results of ANOVA test showed that 41 individual strategies varied significantly according to enjoyment of English learning, and 23 strategies varied significantly in terms of language proficiency.
4. Six factors (Factor 1 – Factor 6) were extracted as the results of factor analysis. The results of the factor analysis provide parallel evidence to the findings obtained through the different levels of an analysis of variance. Generally speaking, the results of the factor analysis demonstrate that language proficiency and strategy awareness show the greatest relationship

to pre-service teachers' use of LLSs, then enjoyment of English learning and personality type extroversion and introversion scale, then gender, and at last personality type judging and perceiving scale. Factors 1 and 4 were found to be strongly related to pre-service teachers' gender, Factors 1, 4 and 5 strongly related to enjoyment of English learning, language proficiency and strategy awareness, Factor 1 strongly related to personality type judging and perceiving scale, and Factors 1 and 5 were found having strong relationship with personality type extroversion and introversion scale.

To sum up, the results of the quantitative data analysis have provided us with a clear picture in the frequency of LLS use by English-major pre-service teachers in Midwest China ranging from their overall strategy use to the use of individual strategies in relation to the five variables. Chapter 5 will report the research results from another aspect: the qualitative analysis of data obtained through the semi-structured interviews.

CHAPTER 5

QUALITATIVE DATA ANALYSIS FOR LANGUAGE LEARNING STRATEGY USE

5.1 Introduction

The purpose of this chapter is to report the results of the qualitative data obtained through the semi-structured interviews conducted with 36 English-major pre-service teachers in Midwest China to explore why they reported employing certain language learning strategies frequently and certain strategies infrequently.

As mentioned in Section 3.7, the quantitative data were collected and analyzed to investigate the frequency of informants' reported use of LLSs, significant variation and variation patterns in frequency of respondents' reported LLS use at 3 different levels by the 5 independent variables, i.e. gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion–introversion scale and judging–perceiving scale, which aimed to elicit in-depth information for the reasons behind the pre-service teachers' strategy choices.

The interviewees provided a wide range of reasons for using LLSs frequently or infrequently. The strategies frequently or infrequently used were picked out in terms of the criterion emerging according to the frequency of strategy choice in real situations as follows: any strategies reported frequently used by over one third of the 36 interviewees were considered being frequently used, and any strategies reported infrequently used by over 12 interviewees were considered being infrequently used.

Finally, the results showed that the majority of the pre-service teachers reported employing 10 LLSs frequently and 7 LLSs infrequently. Finally, the reasons for these strategies frequently or infrequently used emerged. The results of the participants' semi-structured interview are presented in the subsequent sections.

5.2 Reasons for the Frequent Use of Certain Strategies

After analyzing the data, the 10 reported frequently used strategies emerged, which are: 1) '*Watching English-speaking movies or TV programs*' (MET 9), 2) '*Improving one's English from his/her own mistakes*' (COG 21); 3) '*Telling oneself that there is always more to learn when learning English*' (AFF 30); 4) '*Trying to learn about the culture of English-speaking countries*' (SCI 37); 5) '*Always encouraging oneself not to be discouraged by poor exam results*' (AFF 48); 6) '*Asking the interlocutor to slow down or say it again if one doesn't understand*' (SCI 33); 7) '*Trying to talk like native speaker*' (SCI 8); 8) '*Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone*' (MET12); 9) '*Remembering new English words or phrases by remembering the context in which they appear*' (COG 7); and 10) '*Using a circumlocution if one cannot think of a precise English word*' (COG 20).

Different reasons given by the 36 interviewees were checked and compared for the similarities and differences to generate the categories of reasons. At last, 5 refined reasons for pre-service teachers' frequent use of LLSs emerged. These include: 1) Having belief about effectiveness of the strategy; 2) Having interest or habit; 3) Aiming to improve language proficiency; 4) Enhancing communication ability; and 5) Having positive attitudes towards English learning. Following are the details of the

reasons for frequently used LLSs.

1) Having Belief about Effectiveness of the Strategy

Some pre-service teachers reported that some strategies are effective, helpful, beneficial, impressive, or easy to remember. All these have been categorized into this reason: having belief about effectiveness of the strategy. There are four strategies that the pre-service teachers reported using frequently because of this reason. Following are some examples of the interviewees' reasons.

● MET 9 Watching English-speaking movies or TV programs

S 18: ... *I prefer those who have wonderful oral English. I watch often and find that there's perfect efficiency, especially for expressions of daily English....*

S 23: ... *There's some effectiveness [after watching English-speaking movies or TV programs]. Only if I can put it into practice, I think it will be interesting and have some motivation to learn it....*

S 34: ... *I feel it's very helpful watching [English] movies, because if I have watched movies for a period of time, it's very easy for me to express myself....*

● COG 21 Improving one's English from his/her own mistakes

S 15: ...*I think it's very useful. Practice is the sole criterion of truth. Only find out mistakes in practice can I have improvements....*

S 24: ... *It is effective. If you find your mistakes and correct them continually, you can make yourself understood....*

S 31: ... I feel it is effective and makes me improve, mainly in the aspect of spoken English...

S 34: ... *I think the best way to improve myself is to correct mistakes. It's very helpful....*

S 36: ... *I think it's effective in doing exercises. I'm that kind of person who will remember the exercises which once had mistakes It is of great use....*

- **AFF 48 Always encouraging oneself not to be discouraged by poor exam results**

S 4: ... *In my opinion, it's good for me to encouraging myself appropriately....*

S 13: ...*I take it as a way of gathering experience. I try harder next time if I don't have a good result this time....*

- **COG 7 Remembering new English words or phrases by remembering the context in which they appear**

S 6: ... *Yes, I often do like this [Remember new English words or phrases by remembering the context in which they appear]. It's easier to remember....*

S 16: ... *Usually I remembering new English words or phrases by making sentences or remembering the context in which they appear. It's better to remember by making sentences....*

S 17: ... *It's easier to remember. Sometimes when I watch an English movie, I think it's easier to remember the new words or expressions in that context, so I remember this....*

S 18: ... *I think words are rather important. You can't learn English well without the good base of vocabulary. ... It's very effective to remember vocabulary by association or by remembering the context in which they appear....*

S 23: ... *Yes, I pay more attention to how a sentence is used, for I feel that it's useless to remember [some words or phrases] isolately, without any contexts....*

S 34: ... *Yes, it's impressive to remember new English words or phrases by remembering the context in which they appear. Otherwise, if you remember words or phrases isolately, it's mandatory memory, which will not last long....*

2) **Having Interest or Habit**

Some pre-service teachers have some interest or habit to use some strategies.

There are three strategies that the pre-service teachers reported using frequently because of this reason. Following are some examples of the interviewees' reasons.

● **MET 9 Watching English-speaking movies or TV programs**

S 2: ... I love this [watching English-speaking movies or TV programs]! ...

S 18: ... I think it's due to my interest. I love watching English-speaking movies or TV programs, especially those with wonderful oral English....

S 20: ... I watch American TV series everyday. ... It is due to my interest, interest of culture, for example, cultural allusions....

S 23: ... Yes, I love this [watching English-speaking movies or TV programs]...

S 31: ... Just because I love it [watching English-speaking movies or TV programs]. I prefer the way they speak (in the English movies). It's so natural, which I can't learn in class....

S 34: ... Yes, I love English movies, especially movies with interesting plots, such as "Vampires' Diaries". It's good to watch....

S 35: ... I kind of enjoy it [watching English-speaking movies or TV programs]....

● **SCI 37 Trying to learn about the culture of English-speaking countries**

S 7: ... Yes, I think it's interesting and important [to learn about the culture of English-speaking countries]....

S 8: ... Because I like it [to learn about the culture of English-speaking countries]. We have the course of British and American Culture in Grade Two, which is interesting and enables me to enrich my cognition....

S 9: ... Yes, I'm interested in culture (in English-speaking countries), such as food and drink, historical relic and dress. Learning this is practical....

S 16: ... I like it [to learn about the culture of English-speaking countries]. I think it's interesting to know culture and customs in different countries....

S 18: ... Maybe it's because of my interest. We once had a course of 'Introduction of Culture in China and Western Countries'. I'm interested in the contents, which are related to history....

S 28: ... Yes, because when I began to learn English, I considered job employment first and my interest in British and American culture second....

S 36: ... I'm curious and interested in it [to learn about the culture of English-speaking countries]....

● **MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone**

S 7: ... Yes, I often do this [Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone], since I have such interest. It's good. You can not only learn many new words but also speak English fluently....

S 10: ... Because I love it [Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone]. I hope to be more in the English-speaking language environments....

S 17: ... Yes, I love English songs. It's useful. I love to follow when listen and also write down good expressions. Interest is good to everyone... .

S 21: ... Listening to English radio programs, news or songs can help me improve my pronunciation and intonation, since English is not our language, we'd better learn from native speakers. What's more, I think it's interesting to do this, as is boring if only studying in class....

S 36: ... Listening to English radio programs, news or songs have become my habit, part of my life, because I love it....

3) Aiming to Improve Language Proficiency

Some pre-service teachers hope to improve their pronunciation and intonation, vocabulary, listening, or expression to improve their language proficiency; or to use some strategies to learn more knowledge or understand culture or customs in English-speaking countries, which were categorized into this reason: aiming to improve language proficiency. There are 3 strategies they reported using frequently because of this reason. Following are some examples of the interviewees' reasons.

- **MET 9 Watching English-speaking movies or TV programs**

S 2: ... *I feel they have wonderful pronunciation and follow them, then I feel my pronunciation and intonation has been improved rapidly....*

S 27: ... *I often watch English movies and listen to English songs, and now I have found some improvement, mainly in the aspect of pronunciation....*

S 29: ... *Yes, I love watching English movies and American TV series. ... I can learn a lot of authentic spoken language and know their cultures and living habits....*

S 32: ... *I have watched more than 500 English movies. ... I think it's helpful for my pronunciation....*

S 34: ... *I feel it's very helpful watching (English) movies, because if I have watched movies for a period of time, it's very easy for me to express oneself....*

- **SCI 8 Trying to talk like native speakers**

S 17: ... *[I try to talk like native speakers] with the aim to learn their appropriate expressions. ... I'll write down good expressions from English magazines or movies to have a look at them time and time again....*

S 27: ... *Because I prefer American's pronunciation. I feel it's fluent, appropriate, and sounds beautiful when I watch English movies and programs. I hope to speak like native speakers!...*

S 32: ... *I always try to talk like native speakers, for example, I pay attention to their nominalization as I say 'You have my support' instead of 'I support you' to make my expressions more appropriate'*

- **MET 12 Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone**

S 1: ... *I think the pronunciation and intonation [in English radio programs, news or songs] is good. I follow the pronunciation and intonation when I read texts. I feel I've made some improvement. I pay more attention to intonation....*

S 7: ... *It's good. You can not only learn many new words but also speak English fluently. Sometimes I imitate [native speakers' pronunciation and intonation] purposively....*

S 21: ... *Listening to English radio programs, news or songs can help me improve my pronunciation and intonation, since English is not our language, we'd better learn from native speakers....*

S 25: ... *Yes, I always do like this [Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone], because it makes me feel good to be in good language environments, which helps me improve my pronunciation, intonation and language senses....*

4) **Enhancing Communication Ability**

Some pre-service teachers think that they use some strategies frequently because they are lacking of some abilities. There are two strategies that the pre-service teachers reported using frequently because of this reason. Following are some examples of the interviewees' reasons.

- **SCI 33 Asking the interlocutor to slow down or say it again if one doesn't understand**

S 7: ... *[I ask the interlocutor to slow down or say it again] to make me understand what he is speaking....*

S 11: ... *Yes, it [asking the interlocutor to slow down or say it again] is not for correctness, but for understanding....*

S 13: ... *Because if the interlocutor slows down or says it again, I may understand during the process. What's more, when he speaks again, he may change to simpler expressions to help you understand.*

S 14: ... *Yes, the purpose is to understand.... If people can't understand each other, they can not communicate with each other....*

S 16: ... *Yes, I'll ask him to say it again if he speaks too fast or I don't catch the point, which aims to understand, keeping away from communicating obstacles....*

S 22: ... *[I ask the interlocutor to slow down or say it again] because of my poor listening comprehension. I have no choice....*

S 29: ... *[I ask the interlocutor to slow down or say it again] in order to develop my understanding to improve communication....*

● **COG 20 Using a circumlocution if one can't think of a precise English word**

S 1: ... *I always do like this, since I have to express myself. ... If I can't speak in this way, I change to another way....*

S 31: ... *Yes, if I can't use a superior word, I can use another lifelized word instead....*

S 34: ... *Yes, for example, if I can't use the precise English word, I can use a simpler one instead. ... I'll ease my embarrassment by some clever methods....*

5) Having Positive Attitudes towards English Learning

Some pre-service teachers have positive attitudes towards English learning, for example, having good mood of English learning, or having motivation to learn English. Those reasons are categorized into the reason: having positive attitudes towards English learning. There are two strategies that the pre-service teachers reported using frequently because of this reason. Following are some examples of the interviewees' reasons.

● **AFF 30 Telling oneself that there is always more to learn when learning English**

S 5: ... *I take this [Telling oneself that there is always more to learn] as a motivation, since I think that English is a broad and profound language, there is always more to learn, and I need to pay more attention....*

S 10: ... *Because I think learning English is a progressive process. You have to learn the knowledge in some specific step well and then go to the higher step....*

S 11: ... *It [Telling oneself that there is always more to learn] is to alleviate the mood, or do some autosuggestion, like self-motivation....*

S 23: ... *Yes, I feel what I focus more is to know the history, humanities, customs, etiquettes and the situations of their social development of English-speaking countries. I hope to know all this....*

S 24: ... *We are not native speakers. If we don't know its culture, we can't translate the expressions appropriately. There's both pressure and motivation, but motivation stands out....*

● **AFF 48 Always encouraging oneself not to be discouraged by poor exam results**

S 15: ... *I pay more attention to what I have learned rather than results of examinations. Learning is a long progressive process. Failing in one test doesn't mean anything. If you have grasped well, you'll have good results in next test....*

S 16: ... *I never thought of discouragement or not when I fail in tests. If I haven't got good results, I can try harder and do better next time....*

S 18: ... *That [Always encouraging oneself not to be discouraged by poor exam results] is because of my good mood of learning....*

S 19: ... *The most I'm afraid of is failing all the time. I'm always hopeful [to learn English better]. I just keep fighting despite repeated defeats....*

S 31: ... *I think it's nothing serious if I haven't got a good result for the test. You can make some analysis to improve yourself. It's better for people to be optimistic....*

S 32: ... *I feel that it's not enough to just get a test result as a reward, so I sometimes comfort myself not only to take testing as a criterion....*

5.3 Reasons for the Infrequent Use of Certain Strategies

After analyzing the data, the 7 reported infrequently used strategies emerged, which are: 1) MET 44 Attending extra classes at a language school; 2) COG 11 Writing diaries or short articles in English; 3) SCI 35 Practicing speaking English with other students; 4) COG 17 Making up new words if one does not know the precise ones in English; 5) COG 2 Using new English words in a sentence so that one

can remember them; 6) COG 4 Using vocabulary books or electronic dictionaries to remember new English words; and 7) SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters.

Different reasons given by the 36 interviewees were checked and compared for the similarities and differences to generate the categories of reasons. At last, 5 refined reasons for pre-service teachers' frequent use of LLSs emerged, which include: This process revealed 5 reasons for pre-service teachers' infrequent use of LLSs as follows: 1) Having no strategy awareness; 2) Not having belief about effectiveness of the strategy; 3) Having no interest or habit; 4) Lacking ability; and 5) Having no good outside-the-class English learning environments. The following is the details of the reasons for frequently used LLSs.

1) Having No Strategy Awareness

Some pre-service teachers tell the truth that they do not have awareness of some strategies. There are seven strategies that the pre-service teachers reported using infrequently because of this reason. Following are some examples of the interviewees' reasons.

● MET 44 Attending extra classes at a language school

S 13: ... *It seems that I've never thought of this [Attending extra classe]....*

S 15: ... *I have no such awareness [as attending extra classes]....*

S 28: ... *Neither did I have such awareness [as attending extra classes] nor did I try any strategy before....*

S 30: ... *I don't have such awareness [as attending extra classes].....*

● COG 11 Writing diaries or short articles in English

S 7: ... *I don't have such awareness [as writing diaries or short articles in English].... I have no such habit....*

S 19: ... I don't have such awareness [as writing diaries or short articles in English]....

● **SCI 35 Practicing speaking English with other students**

S 29: ... I seldom do this, since I have neither such awareness nor chances [Practicing speaking English with other students]....

S 32: ... I have no such awareness [Practicing speaking English with other students]. In my opinion, it is very strange for us to communicate in English in China....

S 36: ... It seems I have never thought of this [Practicing speaking English with other students]....

● **COG 17 Making up new words if one does not know the precise ones in English**

S 3: ... I've never made up new words, since I never thought of this....

S 4: ... I never know it [Making up new words] is a strategy. I don't think it is a strategy....

S 8: ... I might use another word instead, but I never thought of making up a new word....

S 14: ... I didn't realize this. I never thought of making up a new word, for I don't believe I can make up a word....

S 18: ... I don't have such awareness. When I can't recall some word, I'll use other word or phrase instead of making up a new word....

S 19: ... I have no such awareness. I don't think I'm clever enough to make up new words... .

S 34: ... I never take this as a strategy, because I think everything goes with its own rules, it's unnecessary to create this rule, and I have no ability to create the rule till now....

S 35: ... I've never thought of this[Making up new words]... .

- **COG 2 Using new English words in a sentence so that one can remember them**

S 8: ... I have no such awareness. Usually the teacher makes sentences in English class. It's unnecessary for me to make sentences by myself....

S 22: ... I don't have such awareness [as using new English words in a sentence]. I only memorize words by rote memory....

S 35: ... I seldom make sentences to keep new word. It seems I have no such idea....

- **COG 4 Using vocabulary books or electronic dictionaries to remember new English words**

S 7: ... I seldom do like this. The new English words I remember almost come from the textbooks. I never have such awareness....

- **SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters**

S 19: ... I seldom do like this... I haven't realized this [Getting in touch with one's friends in English]....

S 28: ... I haven't realized this and thought of this [Getting in touch with one's friends in English]....

S 35: ... I have no such awareness [as getting in touch with one's friends in English] Maybe there seldom exist such conditions in China...

S 36: ... I have no such awareness. ...I usually write diaries in English, but I seldom get touch with my friends by writing e-mails or letters in English....

2) Not Having Belief about Effectiveness of the Strategy

Some pre-service teachers do not think some strategies are effective. There are five strategies that the pre-service teachers reported using infrequently because of this reason. Following are some examples of the interviewees' reasons.

- **MET 44 Attending extra classes at a language school**

S 2: ...I don't believe that I can have some improvement [by attending extra classes], either. Maybe it's because we've already known that language proficiency is less likely to get improved through short-term training. Instead it depends more on regular, long term practice....

S 5: ... Firstly, I feel that it may be not so effective; Secondly, I think that the fee is important....

- **SCI 35 Practicing speaking English with other students**

S 18: ... I think speaking with other students is only limited to convey information, without considering the expressions, pronunciation and intonation. So there's no efficiency to improve my English....

S 20: ... We hardly realize the mistakes when talking to each other as we are at the same level. So I don't think it's a good method, even a vicious spiral....

S 32: ... To me there is no improvement for oral English by talking with other students in English, for they can't tick out the mistakes when we are talking....

- **COG 17 Making up new words if one does not know the precise ones in English**

S 1: ... I think even if I speak [with the making-up words], people may not understand....

S7: ... To me, the words made up by myself are wrong....

S 13: ... It is meaningless to make up words since others can't understand....

S 15: ... I think what I make up is definitely of no use....

- **COG 4 Using vocabulary books or electronic dictionaries to remember new English words**

S 3: ... I feel there's no evident efficiency to memorize new English words (by vocabulary books or electronic dictionaries) deliberately....

S 9: ... I feel it's not effective to memorize new English words by electronic dictionaries. It's not appropriate to me....

S 15: ... Information in electronic dictionaries is limited. If you want to go deeper, you need to go for the paper dictionaries....

- **SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters**

S 31: ... Because all my good friends are not English majors, and I have to give enough explanation if I get in touch with them by writing e-mails or letters in English. What's more, I feel I can't express my feeling appropriately in English because of my poor vocabulary. So, I think it's better get in touch with them in Chinese....

S 32: ... I tried before, but I stopped since my friends didn't understand. Because when we talk about daily things by writing e-mails or letters in English, it's possible that some useful information will be lost and some opinions can't be expressed. It's troublesome....

3) Having no interest or habit

Some pre-service teachers do not have interest or habit to use some strategies. There are four strategies that the pre-service teachers reported using infrequently because of this reason. Following are some examples of the interviewees' reasons.

- **COG 11 Writing diaries or short articles in English**

S 3: ... I have no such habit [as writing diaries or short articles in English]. I only write when our teacher gives us such a task....

S 14: ... I have no such a habit to write diaries, neither in Chinese nor in English....

S 16: ... I even seldom write diaries in Chinese. First, I have limited vocabulary that I can't express myself in English sometimes; Second, I have no interest to write....

S 20: ... I have no interest to write diaries. I hardly write diaries in English....

S 24: ... I have no interest to write diaries, let alone that in English....

S 26: ... I have no interest in English learning. I don't want to learn English....

- **SCI 35 Practicing speaking English with other students**

S 12: ... I don't deliberately ask someone to practice English with me. To tell you the truth, I have no interest to learn English....

S 26: ... I have no interest in English learning. I don't want to learn English....

- **COG 4 Using vocabulary books or electronic dictionaries to remember new English words**

S 6: ... I don't like to memorize new English words without context. I get used to remembering them in some specific content....

S 17: ... I seldom use electronic dictionaries, for I don't like this and I like memorizing (new English words) by copying....

S 26: ... I have no interest in English learning. I don't want to learn English....

S 34: ... I feel it's boring to memorize new English words by using vocabulary books or electronic dictionaries. I prefer learning consciously....

- **SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters**

S 26: ... I have no interest in English learning. I don't want to learn English....

4) Lacking Ability

Some pre-service teachers think that they cannot use some strategies because they are lacking of some abilities to use them. There are two strategies that the pre-service teachers reported using infrequently because of this reason. Following are some examples of the interviewees' reasons.

- **COG 11 Writing diaries or short articles in English**

S 8: ... I don't know what to write. To tell you the truth, I think it's useless....

S 12: ... I often find myself in a lost to match what I think in Chinese with certain English words. So I don't want to write any more....

S 13: ... I'm poor in writing and reading. I feel so frustrated that I can only write simple sentences when writing....

S 16: ... I even seldom write diaries in Chinese. First, I have limited vocabulary that I can't express myself in English sometimes; Second, I have no interest to write....

- **COG 17 Making up new words if one does not know the precise ones in English**

S 19: ... I have no such awareness. I think I'm not clever enough to make up new words.....

S 34: ... I never take this as a strategy, because I think everything has its own rules, it's unnecessary to create this rule, and I have no ability to create the rule till now....

5) Having No Good Outside-the-class English Learning Environments

Some pre-service teachers think that they cannot use some strategies because they are lacking of opportunities, or cannot take some chances, or have no good outside-of-class English exposure to learn English, which is categorized into the reason that they do not have good outside-of-class English learning environments. There are three strategies that the pre-service teachers reported using infrequently because of this reason. Following are some examples of the interviewees' reasons.

- **MET 44 Attending extra classes at a language school**

S 13: ... The best foreign language school here is Xi'an Foreign Language University, but it is too far away. I never thought of going there to be a learner in the class or attend some activities, since I don't have enough time....

S 14: ... I don't have such chances nor time [Attending extra classes at a language school]I have neither good economic conditions nor enough time....

S 15: ... I don't have economic conditions [Attending extra classes at a language school]

S 27: ... Yes. What I consider most is that it [Attending extra classes at a language school] is beyond what my family can afford....

S 33: ...Considering the factors of time and economic conditions, I think that self-study will save me both money and time....

● **SCI 35 Practicing speaking English with other students**

S 5: ... Usually it is seldom to have such chances. Usually I just read by myself...

S 13: ... The point is we don't have good language learning environments. ... And when we speak, we often speak in Chinglish (Chinese English)....

S 17: ... There are no good language environments. People feel that it is strange to speak English after class....

S 28: ... I never did this, since we are boys and boys seldom use English in dormitory....

● **SCI 39 Getting in touch with one's friends in English, for example, writing e-mails or letters**

S 3: ... It seems there are no targets to communicate with [in English]....

S 10: ... I only occasionally get touch with foreign teachers[in English]....

S 14: ... I seldom do this except to my foreign friends. I haven't found Chinese friends I can get touch with by writing e-mails or letters in English yet....

5.4 Summary

As mentioned earlier, this chapter has reported the results of the qualitative analysis of the data obtained through the semi-structured interviews. The interviews were conducted to collect data in order to answer Research Question 4: 'Why do they report employing certain strategies frequently and certain infrequently?' This research

question aimed to elicit in-depth information and to triangulate the data obtained in Phase 1. It provided further insights into the LLS employment of English-major pre-service teachers in Midwest of China.

From the qualitative data analysis, 10 strategies frequently used and 7 strategies infrequently used have emerged. Reasons for using these strategies frequently or infrequently were summarized. Reasons for using the 10 strategies frequently are: 1) Having belief about effectiveness of the strategy; 2) Having interest or habit; 3) Aiming to improve language proficiency; 4) Enhancing communication abilities; and 5) Having positive attitudes towards English learning. Reasons for using the 7 strategies infrequently are: 1) Having no strategy awareness; 2) Not having belief about effectiveness of the strategy; 3) Having no interest or habit; 4) Lacking ability; and 5) Having no good outside-the-class English learning environments.

By revealing the reasons for the pre-service teachers' reported frequency of LLS use, the qualitative data analysis of the present study has provided the researcher with useful information for another perspective of research in the area of language learning strategies. It helps explain the results of the quantitative data analysis in Chapter 4. In Chapter 6, which is the last chapter, the researcher summarizes the research findings in response to the research questions proposed in Chapter 3. It also presents the discussions of the research findings, the implications, the limitations of the present study, and suggestions for future research.

CHAPTER 6

SUMMARY OF RESEARCH FINDINGS, DISCUSSION AND CONCLUSION

6.1 Introduction

The main purpose of this chapter is to summarize the principal findings of the present investigation in response to the research questions, and to give a discussion of the research findings. Then it will put forward the implications arising from the research for language learning and teaching for undergraduate students in the Chinese context, and to present the limitations of the present investigation and recommendations for future research.

Based on the analysis of the data obtained through the language learning strategy questionnaire, the researcher has systematically presented the reported frequency of use of LLSs by 836 English-major pre-service teachers in the Midwest of China in Chapter 4. Chapter 4 also describes the significant variations in frequency of pre-service teachers' reported LLS use at three different levels: overall use of LLSs, use of LLSs in the MET, COG, AFF and SCI categories, and use of individual LLSs, related to the five investigated variables, namely gender, enjoyment of English learning, language proficiency, strategy awareness and personality types. Chapter 5 mainly focuses on exploring the reasons for pre-service teachers reporting employing certain strategies frequently and certain strategies infrequently. In Chapter 6, the researcher will make a summary of the above research findings and suggest reasons

for the existing variations, as well as other apparent significant differences in relation to each variable in subsequent discussion section in order to give the reader a better understanding of those significant variations.

6.2 Summary of the Research Findings

The results in Chapters 4 and 5 provide responses to the research questions for the present investigation. The results are summarized as follows.

6.2.1 Research Question 1: What is the frequency of language learning strategy use employed by English-major pre-service teachers in Midwest China at different levels, i.e. overall, category and individual ?

In response to Research Question 1, the research findings reveal that the pre-service teachers' reported overall use of language learning strategies was of the moderate frequency with the mean score 3.02. The frequency of use of LLSs in the MET, COG, AFF and SCI categories are at the moderate frequency level with the mean scores of 3.06, 2.99, 3.28 and 2.84 respectively.

According to the individual LLS level, five strategies were reported the high frequency of use, five strategies the low frequency of use, and the others the moderate frequency of use. Specifically, the five high frequency use strategies are: *'Using a circumlocution if one can't think of a precise English word'* (COG 20) with the mean score of 3.78; *'Always encouraging oneself not to be discouraged by poor exam results'* (AFF 48) with the mean score of 3.73; *'Systematically reviewing vocabulary, texts and notes before exams'* (MET 42) with the mean score of 3.67; *'Telling oneself that there is always more to learn when learning English'* (AFF 30) with the mean score of 3.65; and *'Watching English-speaking movies or TV programs'* (MET 9)

with the mean score of 3.63. The five low frequency use strategies are: ‘*Attending extra classes at a language school*’ (MET 44) with the mean score of 1.99; ‘*Making up new words if one does not know the precise ones in English*’ (COG 17) with the mean score of 2.05; ‘*Getting in touch with one’s friends in English, for example, writing e-mails or letters*’ (SCI 39) with the mean score of 2.17; ‘*Participating in extra-curricular activities*’ (SCI 46) with the mean score of 2.35; and ‘*Writing diaries or short articles in English*’ (COG 11) with the mean score of 2.36.

6.2.2 Research Question 2: Do English-major pre-service teachers’ choices of language learning strategies vary significantly according to the five variables, namely, their gender, enjoyment of learning English, language proficiency, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale? If they do, what are the main patterns of variation?

In response to Research Question 2, the significant variations as well as patterns of variation have been examined. The summary of the results at three different levels in relation to pre-service teachers’ gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale are presented as follows.

6.2.2.1 Variation Patterns by Pre-Service Teachers’ Gender

The results at three different levels of data analysis according to pre-service teachers’ gender are summarized below.

● **Overall Strategy Use**

In respect of pre-service teachers’ gender, the result from ANOVA (Table 4.4) shows a significant variation in pre-service teachers’ reported frequency of

overall strategy use. The significant variation reveals that female pre-service teachers generally reported more frequent overall strategy use than did their male counterparts.

- **Use of Strategies in the MET, COG, AFF, and SCI Categories**

Based on the results of ANOVA (Table 4.5), significant variations were found in the use of LLSs in the COG and AFF categories according to pre-service teachers' gender. The variation pattern is that female pre-service teachers reported more frequent use of strategies than did their male counterparts. However, no significant variations were found in strategy use in the MET and SCI categories according to this variable.

- **Use of Individual LLSs**

The results of the Chi-square tests (Table 4.12) reveal that the use of 16 out of 48 individual LLSs varied significantly according to pre-service teachers' gender, with two different patterns of variation: 1) Female > Male, and 2) Male > Female. The first variation pattern illustrates that a significantly higher percentage of female pre-service teachers than their male counterparts reported high employment of 11 LLSs. Examples are: *'Using a circumlocution if one can't think of a precise English word'* (COG 20), *'Telling oneself that there is always more to learn when learning English'* (AFF 30), and *'Systematically reviewing vocabulary, texts and notes before exams'* (MET 42). The second variation pattern shows that a significantly greater percentage of male pre-service teachers than their female counterparts reported employing high use of strategies than did their female counterparts. Examples are: *'Trying to relax whenever feeling afraid of using English'* (AFF 27), *'Having clear goals for improving one's English skills'* (MET 25), and *'Trying not to translate verbatim'* (COG 14).

6.2.2.2 Variation Patterns by Enjoyment of English Learning

Following is the summary of the results at three different levels of data analysis according to pre-service teachers' enjoyment of English learning.

- **Overall Strategy Use**

In respect of pre-service teachers' enjoyment of English learning, the result from ANOVA (Table 4.4) shows a significant variation in pre-service teachers' reported frequency of overall strategy use. The significant variation reveals that the higher enjoyment of English learning pre-service teachers generally reported significantly more frequent overall strategy use than did the lower enjoyment of English learning counterparts.

- **Use of Strategies in the MET, COG, AFF, and SCI Categories**

Based on the results of ANOVA (Table 4.6), significant variation was found in the use of LLSs in the all four categories in association with pre-service teachers' enjoyment of English learning. The results of post-hoc Fisher's LSD test shows that: 1) In relation to the MET, COG and SCI categories, pre-service teachers who enjoyed learning English at higher level reported employing strategies significantly more frequently than those who enjoyed learning English at the lower levels; 2) In the AFF category, those who enjoyed learning English at the high level reported employing strategies significantly more frequently than those who enjoyed learning English at the moderate or low level.

- **Use of Individual LLSs**

The results of the ANOVA test and post hoc Fisher's LSD test (Table 4.13) show significant variations in use of individual LLSs in terms of pre-service teachers' enjoyment of English learning with 41 out of 48 LLS items varying

significantly. Four significant variation patterns in pre-service teachers' use of individual LLSs according to this variable were revealed.

The first variation pattern is 'H > M, H > L', indicating that 26 strategies were reported being used significantly more frequently by pre-service teachers who enjoyed English learning at the high level than those who enjoyed English learning at the moderate level and low level. Examples are: '*Using a circumlocution if one can't think of a precise English word*' (COG 20), '*Telling oneself that there is always more to learn when learning English*' (AFF 30), and '*Always encouraging oneself not to be discouraged by poor exam results*' (AFF 48). The second variation pattern is 'H > L', showing that 9 strategies were reported being used significantly more frequently by pre-service teachers who enjoyed English learning at the high level than those who enjoyed English learning at the low level. Examples are: '*Connecting the sound of a new English word and an image or picture of the word to help one remember the word*' (COG 3), '*Reading English without looking up every new word*' (COG 18) and '*Trying to predict what the other person will say next in English*' (COG 19). The third is 'H > M > L' variation pattern, in which 5 strategies were reported being used significantly more frequently by pre-service teachers who enjoyed English learning at higher level than those at lower level. Examples are: '*Thinking of relationships between what one already knows and new things one learns in English*' (COG 1), and '*Trying to talk like native speakers*' (SCI 8). The fourth is 'H > L, M > L' variation pattern. Only 1 strategy was reported being used significantly more frequently by pre-service teachers who enjoyed English learning at both high level and moderate level than those at the low level. The strategy is: '*Remembering new English words or phrases by remembering the context in which they appear*' (COG 7).

6.2.2.3 Variation Patterns by Language Proficiency

Following is the summary of the results at three different levels of data analysis according to pre-service teachers' language proficiency.

- **Overall Strategy Use**

The results from ANOVA (Table 4.4) demonstrate significant differences among the mean frequency scores of LLSa employed by pre-service teachers' with high, moderate and low language proficiency levels. The results of post hoc Fisher's LSD test indicate that pre-service teachers with both high and moderate language proficiency reported employing LLSs significantly more frequently than those with low proficiency levels. However, no significant differences in the use of LLSs were found between those with high and moderate language proficiency levels.

- **Use of Strategies in the MET, COG, AFF, and SCI Categories**

The results of ANOVA in Table 4.7 reveal significant variations among the mean frequency scores of pre-service teachers' use of LLSs in the MET, COG and SCI categories according to this variable. The results of post-hoc Fisher's LSD test demonstrate that pre-service teachers with both high and moderate language proficiency reported employing LLSs significantly more frequently than those with low proficiency levels in the MET, COG and SCI categories. However, no significant differences in the use of LLSs were found in the AFF category.

- **Use of Individual LLSs**

The results of the ANOVA test and post hoc Fisher's LSD test (Table 4.14) reveal that 23 out of 48 individual LLSs varied significantly according to pre-service teachers' language proficiency. All of the 23 strategies were on the direction of 'positive' variation pattern, with 5 patterns of variation: 1) $H > L, M > L$; 2) $H > L$; 3)

H > M > L; 4) M > L; and 5) H > M, H > L.

The first variation pattern is 'H > L, M > L'. It indicates that 9 strategies were reported being used significantly more frequently by pre-service teachers with both high and moderate language proficiency than those with low language proficiency. Examples are: '*Trying not to translate verbatim (COG 14)*', and '*Participating in English classroom activities (SCI 43)*'. The second is 'H > L' variation pattern, showing that 6 strategies were reported being used significantly more frequently by pre-service teachers with high language proficiency than those with low proficiency. Examples are: '*Watching English-speaking movies or TV programs (MET 9)*', and '*Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone (MET 12)*'. The third variation pattern is 'H > M > L', which reveals that 4 strategies were reported being used significantly more frequently by pre-service teachers with higher language proficiency than those with lower proficiency. Examples are: '*Thinking of relationships between what one already knows and new things one learns in English (COG 1)*', and '*Practicing English reading on the Internet (MET 38)*'. The fourth is 'H > L' variation pattern. Three strategies were reported being used significantly more frequently by pre-service teachers with moderate language proficiency than those with low proficiency. Examples are: '*Guessing the meaning of the unfamiliar English words (COG 15)*', and '*Reading English without looking up every new word (COG 18)*'. The last variation pattern is 'H > M, H > L'. Only 1 strategy was reported being employed significantly more frequently by participants with high language proficiency than those with moderate and low proficiency. The strategy item is '*Doing a lot of exam-oriented exercises before exams (MET 47)*'.

6.2.2.4 Variation Patterns by Strategy Awareness

Following is the summary of the results at three different levels of data analysis according to pre-service teachers' strategy awareness.

- **Overall Strategy Use**

In response to pre-service teachers' strategy awareness, the result from ANOVA (Table 4.4) shows a significant variation in pre-service teachers' reported frequency of overall strategy use, with the pre-service teachers with high strategy awareness reporting significantly more frequent overall strategy use than those with low strategy awareness.

- **Use of Strategies in the MET, COG, AFF, and SCI Categories**

Based on the results of ANOVA (Table 4.8), significant variations were found in the use of LLSs in all the four categories: MET, COG, AFF and SCI according to pre-service teachers' strategy awareness, with the pre-service teachers with high strategy awareness reporting significantly more frequent strategy use than those with low strategy awareness.

- **Use of Individual LLSs**

The results of the Chi-square tests (Table 4.15) demonstrate that the use of 37 out of 48 individual LLSs varied significantly by strategy awareness. The variation pattern illustrates that a significantly higher percentage of pre-service teachers with high strategy awareness reported high employment of 37 LLSs than those with low strategy awareness. Examples are: '*Using a circumlocution if one can't think of a precise English word*' (COG 20); '*Always encouraging oneself not to be discouraged by poor exam results*' (AFF 48); and '*Telling oneself that there is always more to learn when learning English*' (AFF 30).

6.2.2.5 Variation Patterns by Personality Types

Following is the summary of the results at the three different levels of data analysis in terms of pre-service teachers' personality types: extroversion-introversion scale and judging-perceiving scale separately.

6.2.2.5.1 Variation Patterns by Extroversion-Introversion

- **Overall Strategy Use**

The results of the ANOVA (Table 4.4) show a significant variation in pre-service teachers' reported frequency of overall strategy use with reference to pre-service teachers' personality type judging and perceiving scale. The significant variation indicates that the extroversion pre-service teachers reported employing strategies significantly more frequently than did their introversion counterparts.

- **Use of Strategies in the MET, COG, AFF, and SCI Categories**

Based on the results of ANOVA (Table 4.9), significant variations were found in the use of LLSs in all the four categories: MET, COG, AFF and SCI according to pre-service teachers' extroversion and introversion scale of personality type, with the extroverts reporting employing strategies significantly more frequently than the introverts.

- **Use of Individual LLSs**

The results of the Chi-square tests (Table 4.16) demonstrate that the use of 28 out of 48 individual LLSs varied significantly according to extroversion-introversion scale of personality types, with two different patterns of variation: 1) Extroversion>Introversion; and 2) Introversion> Extroversion.

The former illustrates that a significantly higher percentage of extroverts reported employing significantly more frequently LLSs than introverts

reported high employment of 27 strategies. Example of these strategies are: *'Asking the interlocutor to slow down or say it again if one doesn't understand'* (SCI 33), *'Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone'* (MET 12), *'Guessing the meaning of the unfamiliar English words'* (COG 15), etc.

The latter pattern of variation indicates that a significantly higher percentage of introverts than extroverts reported high use of only 1 strategy, which is *'Noticing whether one is nervous or not when reading or using English'* (AFF 31).

6.2.2.5.2 Variation Patterns by Judging-Perceiving

- **Overall Strategy Use**

The results of the ANOVA (Table 4.4) show a significant variation in pre-service teachers' reported frequency of overall strategy use with reference to the judging-perceiving scale of personality types. The significant variation indicates that judgers reported employing strategies significantly more frequently than did the perceivers.

- **Use of Strategies in the MET, COG, AFF, and SCI Categories**

In respect of pre-service teachers' judging and perceiving scale of personality type, the results of ANOVA (Table 4.10) show that significant differences were found in LLS use in the MET, COG and SCI categories, with judgers reporting employing strategies significantly more frequently than perceivers. However, no significant variations were found in strategy use in the AFF category according to this judging-perceiving scale.

● Use of Individual LLSs

The results of the Chi-square tests (Table 4.17) demonstrate that the use of 13 out of 48 individual LLSs varied significantly according to judging-perceiving scale of personality types, with two different patterns of variation: 1) Judging>Perceiving; and 2) Perceiving > Judging.

The former illustrates that a significantly higher percentage of judges reported high employment of 12 strategies than perceivers. Example of these strategies are: *'Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone'* (MET 12), *'Trying to understand the complex English sentences by analyzing their grammatical structures'* (COG 41), *'Encouraging oneself to speak English even when being afraid of making mistakes'* (AFF 28), etc.

The latter pattern of variation indicates that a significantly higher percentage of perceivers than judges reported high employment of 1 strategy, which is *'Making up new words if one does not know the precise ones in English'* (COG 17).

6.2.3 Research Question 3: What are the main underlying factors in language learning strategies employed by English-major pre-service teachers in Midwest China? Are there any factors strongly related to the five variables? If so, what are they?

The results of the factor analysis indicate that there are six main underlying factors in language learning strategies employed by English-major pre-service teachers: Factor 1: Strategies for providing general management and giving moral support; Factor 2: Strategies for improving communication; Factor 3: Strategies for breaking down obstacles and self-motivation; Factor 4: Strategies for getting meaning; Factor 5: Authentic language exposure strategies; and Factor 6: Strategies for meaning retention.

The results of the factor analysis also show that there are some factors strongly related to the five variables. Specifically, Factors 1 and 4 were found to have strong relationship with 'gender'; Factors 1, 4 and 5 were strongly related to 'enjoyment of English learning', 'language proficiency' and 'strategy awareness'; Factor 1 was found strongly related to personality type judging and perceiving scale; and Factors 1 and 5 were found strongly related to personality type extroversion and introversion scale.

6.2.4 Research Question 4: Why do they report employing certain strategies frequently and certain strategies infrequently?

In response to Research Question 4, the researcher has explored the reasons why the pre-service teachers reported employing certain strategies frequently and certain infrequently. As emerged from the data obtained through the semi-structured interviews conducted with 36 informants, the reasons related to the research questions are summarized as follows:

There are 5 reasons for pre-service teachers' using certain strategies frequently: 1) Having belief about effectiveness of the strategy; 2) Having interest or habit; 3) Aiming to improve language proficiency; 4) Enhancing communication ability; and 5) Having positive attitudes towards English learning. There are also 5 reasons for pre-service teachers' infrequent use of strategies: 1) Having no strategy awareness; 2) Not having belief about effectiveness of the strategy; 3) Having no interest or habit; 4) Lacking ability; and 5) Not having good out-of-class English learning environments.

6.3 Discussion of the Research Findings

Based on the responses to the four research questions in the previous sections, the relationship of language learning strategy use at different levels and the five independent variables have been examined and described. In this section, the research findings in association with the five variables investigated are discussed, and this will present the possible explanations for what have been discovered. The focused point for discussion concerns possible reasons hypothesized by the researcher to where significant variations in certain strategy use with reference to each variable become evident. However, it may not be easy to compare strategy use by students in the very detailed manner of the present study with previous studies (Intaraprasert, 2000), as the present study has a different method of classifying language learning strategies, and the results have to be examined according to the strategy classifications. What follow are discussions of the research findings in relation to frequency of pre-service teachers' LLS use, and then the use of LLSs in association with the five variables, i.e., gender, enjoyment of English learning, language proficiency, strategy awareness, and personality types.

6.3.1 Overall LLS Use and Use of LLSs by the Four Categories

Some previous studies examined frequency of English learners' LLS use. Chang, Liu and Lee (2007) investigated Taiwanese college students' strategy use, and found that they reported moderate frequency of overall LLS use and use of strategies at the category level. According to the rank order of the frequency of use, the most frequently used strategy was compensation strategies and followed by memory strategies, metacognitive strategies, social strategies, cognitive strategies and affective strategies. Rao (2008) carried out a study with 225 non-English majors in Jiangxi

Normal University. The results revealed that students reported overall strategy use and strategy use in category at the moderate level. Kavasoglu (2009) investigated the strategy use by pre-service teachers of English Language at Mersin University. The participants reported having moderate to high frequency use of each of the six categories of strategy, with metacognitive strategies being the most frequently used, and affective strategies the least frequently used. Yu and Wang (2009) examined the LLS use by junior secondary school students in Northeast China. The results indicated that they used strategies at the moderate level, using memory and cognitive strategies most frequently and social and affective strategies least frequently. Zhou (2010) examined the LLS use by 150 senior high school students in Zhejiang province in China. The participants reported moderate frequency of overall LLS use, and also moderate use of strategies at the category level, which was ranked in the following frequency order of LLS use: compensation, affective, metacognitive, cognitive, memory and social strategies.

The results of the present study revealed that English-major pre-service teachers in Midwest China reported moderate frequency of the overall LLS use and use of strategies at the category level. The results were consistent with the previous studies mentioned above, i.e. the studies by Chang, Liu and Lee (2007), Rao (2008), Yu and Wang (2009), and Zhou (2010). It indicates that the pre-service teachers are not so skillful in employing LLSs to enhance their English language learning. One factor might be helpful to explain this kind of phenomenon.

The possible factor for explaining this might be the pre-service teachers' language proficiency. According to Gerami and Baighlou (2011), successful EFL students use a wider range of learning strategies. According to Wharton (2000),

successful language learners who are more motivated tend to use more strategies than unsuccessful students. For the present study, there are 431 pre-service teachers with low language proficiency, 325 with moderate proficiency, and only 80 with high proficiency, based on the TEM-4 results and the national criteria of students' different language proficiency levels. In addition, there are 813 participants with high strategy awareness and only 23 with low strategy awareness. It means that although the pre-service teachers have high strategy awareness, they just use the strategies at the moderate frequency level, which might be due to their moderate or low language proficiency.

The results of the present study also revealed that for the strategy use at the category level, pre-service teachers reported using affective strategies most frequently (Mean = 3.28), metastrategies the second frequently (Mean=3.06), cognitive strategies the third (Mean=2.99), and sociocultural-interactive strategies the least frequently (Mean=2.84). Since the researcher adopted Oxford's (2011) 4 categories, while the other researchers followed Oxford's (1990) 6 categories, it is hard to make one-to-one comparison with the previous studies. Some possible factors might give explanations to the frequency order of the strategy use by category.

Pre-service teachers reported using affective strategies the most frequently. It is contrary to the previous studies by Chang, Liu and Lee (2007), Kavasoglu (2009), and Yu and Wang (2009), which revealed that learners used affective strategies the least frequently. According to Oxford (2011), affective strategies help learners create positive emotions and attitudes and stay motivated with the purpose of handling emotions, beliefs, attitudes, and motivations in L2 learning. The possible explanation for the contradiction of the results mentioned above might be attributed to learners'

different beliefs or attitudes towards English learning aroused in different learning environments. Some research results from the qualitative data analysis in the present study could give some support for this. The participants in the semi-structured interview reported frequent use of the affective strategy: '*Always encouraging oneself not to be discouraged by poor exam results*' (AFF 48), with the reason: having beliefs about effectiveness of the strategy; and reported frequent use of the two affective strategies: '*Telling oneself that there is always more to learn when learning English*' (AFF 30) and '*Always encouraging oneself not to be discouraged by poor exam results*' (AFF 48), with the reason: having positive attitudes towards English learning.

Pre-service teachers reported the least frequent use of sociocultural-interactive strategies. This is relatively consistent with the studies by Yu and Wang (2009) and Zhou (2010). Their studies proved the least frequent use of social strategies. The least frequent use of sociocultural-interactive strategies indicates that the pre-service teachers in Midwest China do not favor using sociocultural- interactive strategies in learning English. According to Oxford (2011), sociocultural- interactive strategies help learners with communication, sociocultural contexts and identity with the aims to deal with issues of contexts, communication, and culture in L2 learning. The explanation for the least frequent use of sociocultural-interactive strategies might be due to pre-service teachers' learning contexts in general and classroom pedagogy in particular (Yu & Wang, 2009). Chinese students' English learning is more or less confined to the classroom settings and traditional teacher-centered classroom teaching practiced (Zhou, 2010). Students hardly have chances to learn English in real social context to practice the use of social strategies. Therefore, it seems reasonable they use sociocultural- interactive strategies the least frequently.

6.3.2 Use of LLSs in association with Gender

The findings demonstrated that female pre-service teachers showed significantly higher frequency of overall strategy use, use of strategies in the COG and AFF categories, and use of 11 individual LLSs than their male counterparts. In addition, 5 individual strategies were reported being used significantly more frequently by male pre-service teachers than their female counterparts.

Firstly, the research results indicate that there is a relationship between pre-service teachers' use of LLSs and their gender, which is consistent with the results of many previous studies. Oxford and Nyikos (1989) found that gender had 'a profound effect on strategy choice' in their study of university students learning foreign languages, and Intaraprasert (2000) pointed out that males and females have their own ways of using strategies to learn a foreign or second language. Kyungsim and Leavell (2006) discovered statistically significant difference in the use of affective strategies between male and female, and Radwan (2011) found significant difference between male students and female students in using social strategies.

Secondly, the results reveal that female pre-service teachers employ strategies generally significantly more frequently than their male counterparts, which is partly proved by some previous studies. According to Green and Oxford (1995), women use more strategies than men, especially in the use of affective and social strategies. Sheorey's (1999) study on Indian college students studying English reported that female samples use strategies significantly more frequently than male students. Hong-Nam and Leavell (2006) find that females report employing affective and social strategies more frequently than male learners. Ghee, Ismail and Kabilan (2010) determine that female students use more learning strategies than the male students in affective strategies.

In explaining the higher frequency of strategy use by females, Oxford and Ehrman (1995) argued that both learning results and learning strategies could well be a function of social expectations, attitudes, motivation, and learning styles. Oxford (1995) pointed out that both hemisphericity and socialization differences between male and female have attributed to the differences in strategy use. Regarding the differences in the pre-service teachers' LLS use in relation to gender in the present study, a few tentative explanations could be hypothesized to interpret the variations, i.e. the worldwide belief that females are superior to males in language learning, females' need for social approval, females' sociability, and males' social position.

The possible factor which may explain why female pre-service teachers reported employing LLS use more frequently than their male counterparts in the overall strategy use and use of strategies in the COG and AFF categories is the worldwide belief that females are superior to males in language learning (Rao, 2008), as Oxford, Nyikos and Ehrman (1998) put forward that the language learning folklore that women learn languages better than men. Dai and Lynn (1994) also pointed out that the high level of cross-cultural consistency in the strategy use by gender lends support to the possibility that females have a greater potential in language learning than males by birth.

The second possible explanation for such significant differences is females' need for social approval (Nyikos, 1990). Several distinctive features emerged from the LLSs used significantly frequently by the female pre-service teachers, which are specified as follows: 1) It is related to the female pre-service teachers' desire for good grades according to Kramarae (1981). The two strategies are: '*Systematically reviewing vocabulary, texts and notes before exams*' (MET 42) and '*Doing a lot of*

exam-oriented exercises before exams' (MET 47). 2) It is concerned with female pre-service teachers' special interest in rule-related practice and rote memory, as in the two strategies: *'Trying to understand the complex English sentences by analyzing their grammatical structures*' (COG 41) and *'Saying or writing new English words several times*' (COG 5), which could also be related to females' desire for good grades and may reflect a need for social approval (Nyikos, 1990). 3) It is related to females' motivation to learn English in order to satisfy their social expectations, as expressed in the two strategies: *'Telling oneself that there is always more to learn when learning English*' (AFF 30) and *'Trying to find out how to learn English well*' (MET 22). All the above explanations are well suited to the Chinese context where social approval is of utmost important for females (Rao, 2008).

The third possible explanation for such significant differences is females' sociability. Oxford (1995) pointed out that both brain hemisphericity and socialization differences between male and female have attributed to the differences in strategy use. Two LLSs *'Using a circumlocution if one can't think of a precise English word*' (COG 20) and *'Asking the interlocutor to slow down or say it again if one doesn't understand*' (SCI 33) showed their strong desire for sociability, which was consistent with what Ok (2003, p. 26) mentioned, "females are superior to, or at least very different from, males in many social skills with females showing a greater social orientation". A popular belief is that females are better L2 learners than males. If so, it probably resulted from the development of more effective social interaction skills and strategies in female than male students (Hall, 2011).

In another aspect, according to Ghani (2003, p. 33), "males do better than females in the use of some strategies", which is supported by the findings of the

present study where male pre-service teachers did report using five strategies significantly than did their female counterparts. The possible explanation for this is males' social position in China. Rao (2008, p. 261) put forward the concept of male-dominated social structure, as "from childhood onwards, a Chinese man is nurtured not to be in front of difficulties. No matter how difficult it would be, a man should never be discouraged and try his best to reach his goal." That is consistent with what Maubach and Morgan (2001) claimed that male pre-service teachers had greater willingness to manage anxiety while interacting in English than female counterparts, thus males are quite self-confident and risk-taking. Therefore, male pre-service teachers could manage to control their anxiety as in strategy '*Trying to relax whenever feeling afraid of using English*' (AFF 27), could feel so confident and take risk to learn English in ways of association or creation as in strategies '*Trying not to translate verbatim*' (COG 14), '*Thinking of relationships between what one already knows and new things one learns in English*' (COG 1), and '*Using new English words in a sentence so that one can remember them*' (COG 2), and could have the ability to have their clear goals in English learning as in strategy '*Having clear goals for improving one's English skills*' (MET 25).

In sum, the four hypothesized explanations: the worldwide belief that females are superior to males in language learning, females' need for social approval, females' sociability, and males' social position are possibly attributed to the significant variations in pre-service teachers' LLSs use according to their gender. Nevertheless, there has been no definite evidence for what really caused these significant differences. Therefore, investigation of these aspects is still necessary.

6.3.3 Use of LLSs in association with Enjoyment of English Learning

Enjoyment of English learning is one of the factors that affect learners' choices of language learning strategies (Mochizuki, 1999). Mochizuki (1999) examined Japanese university students' strategy use by enjoyment of English learning and finds that students who enjoy learning English use more strategies in the overall strategy use, and in the cognitive, metacognitive, and social strategies by category. Rao (2008) examined the strategy use of a group of non-English majors in a Chinese university in terms of enjoyment of English learning, and finds that that enjoyment of English learning exhibits a significant effect on frequency of overall strategy use across the entire SILL; students who enjoy English learning report using strategies significantly more frequently than those who do not enjoy English learning. Wong and Nunan (2011) explored whether more effective and less effective learners differ in their enjoyment of learning English. The results show that the aspect of enjoyment of learning English reveals a significant difference between more and less effective students. Seventy-eight per cent of more effective but only twenty-seven per cent of less effective students report enjoying English a great deal, and twenty-four per cent of less effective students report that they do not like learning English at all.

The findings of the present study demonstrate that pre-service teachers with higher enjoyment of English learning reported employing strategies more frequently than did the counterparts with lower enjoyment of English learning in the overall strategy use and strategy use in the MET, COG and SCI categories, and for the AFF category, those who enjoy learning English at the high level reported employing strategies significantly more frequently than those at the moderate or low level. The results are consistent with the results of the studies by Mochizuki (1999), Rao (2008), and Wong and Nunan (2011).

The findings also reveal that 41 out of 48 individual LLSs varied significantly according to pre-service teachers' enjoyment of English learning, with 4 different patterns of variations: 1) high > moderate, high > low. Twenty-six strategies fall into this variation pattern; 2) high > low. Nine strategies fall into this variation pattern; 3) high > moderate > low, with 5 strategies; and 4) high > low, moderate > low, with only 1 strategy. Since there are very few studies on the effects of enjoyment of English learning on learners' language learning strategy use, it is difficult to make more comparisons with previous studies.

The first possible reason which may explain the high frequency of strategy use by pre-service teachers with high enjoyment of English learning is the role of enjoyment of English learning. According to Griffin (2005, p. 141), "enjoyment colors the learner's world and fills experience with positive energy and hope", insisting that learning should be fun, utilizing a 'pedagogy of enjoyment'. Jacky (2011) put forward that students' lack of enjoyment of learning has been mooted as a cause of multiple failures in education, and much discussion of the relationship of enjoyment to learning assumes that learning is contingent on a willingness to engage and to persist, which will not be forthcoming unless the learning task is assessed as potentially enjoyable, resulting in motivation to start, and experienced as enjoyable, resulting in persistence.

The second possible reason is because of language proficiency. It means that learners with higher language proficiency will have higher enjoyment of English learning, which will have effects on their strategy choice, as Wong and Nunan (2011)'s results showed that the aspect of enjoyment of learning English reveals a significant difference between more and less effective students, with seventy-eight per

cent of more effective but only twenty-seven per cent of less effective students report enjoying English a great deal, and twenty-four per cent of less effective students report that they do not like learning English at all.

In summary, the two hypothesized reasons: 1) the role of enjoyment of English learning, and 2) pre-service teachers with higher language proficiency will have higher enjoyment of English learning, which will have effects on their strategy choice. Nevertheless, there has been no definite evidence for what really caused these significantly variations. Therefore, investigation of these aspects is still necessary.

6.3.4 Use of LLSs in association with Language Proficiency

Some previous language learning strategy studies have consistently established a positive link between language proficiency and strategy use, suggesting that more proficient learners usually use more strategies than less proficient learners (Radwan, 2011). Examples are Oxford and Nyikos (1989), Intraprasert (2000), Wharton (2000), Griffiths (2003), Wu (2008), Anugkakul (2011), Gerami and Baighlou (2011), and Minh (2012). However, Hong-Nam and Leavell (2006) have found a curvilinear relationship between LLS use and language proficiency that students in the intermediate level report more use of strategies than beginning and advanced levels, and Magogwe and Oliver (2007) have also claimed that language proficiency influences strategy use at the primary level but not at the secondary or the tertiary level.

Based on the findings of the present investigation, both high and moderate proficiency pre-service teachers reported more frequent overall strategy use than did the low proficiency counterparts, while no significant differences between high and moderate proficiency pre-service teachers were found. This is consistent with

Wharton's (2000) study that students with good and fair proficiency use strategies significantly more often than those with poor proficiency. For the MET, COG and SCI categories, the variation pattern is the same as that of the overall strategy use as above. This is relatively consistent with the results of the previous study, which shows the positive variation pattern, that is, the higher proficiency level learners use more strategies than the lower proficiency learners.

One possible explanation for the findings above is the pre-service teachers' capability of English learning, as Chamot (1987) suggested that effective learners and ineffective learners are different in that the former are able to use strategies appropriately, while the latter use a number of strategies as well but inappropriately, and Vann and Abraham (1990) reported that unsuccessful language learners appeared to be active strategy users, but sometimes they applied strategies inappropriately. In other words, strategy use and proficiency are both causes and outcomes of each other; active use of strategies help students attain high proficiency, which in turn makes it likely that students will select these active use strategies (Prakongchati, 2007). On the other hand, the reason for no significant variation for the high and moderate language proficiency pre-service teachers may be that both of these groups of learners have some capability of language learning, except for the low proficiency learners.

At the of individual LLS use level, 23 out of 48 individual strategies varied significantly with positive patterns of variation, among which are 10 cognitive strategies, 9 metastrategies, and 4 sociocultural-interactive strategies. The possible factor for explaining this is also due to the pre-service teachers' capability of English learning, as Gerami and Baighlou (2011) indicated that successful EFL students use a wider range of learning strategies and are different from those often preferred by their

unsuccessful peers, with the former often using metacognitive strategies and the latter tending to use surface level cognitive strategies. As can be seen above, the higher language proficiency learners use more metastrategies in the present study, which provide general management/control of metacognitive, meta-affective and metasocial strategies, aiming to understand one's own needs, using and adjusting the other strategies to meet those needs. Those metastrategies are: '*Watching English-speaking movies or TV programs*' (MET 9), '*Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone*' (MET 12), '*Looking for opportunities/chances to read as much as possible in English*' (MET 24), '*Having clear goals for improving one's English skills*' (MET 25), '*Planning one's schedule so one will have enough time to learn English*' (MET 23), '*Practicing English reading on the Internet*' (MET 38), '*Reading newspapers, magazines, and books in English*' (MET 10), and '*Improving one's English from different websites*' (MET 45).

Another possible factor hypothesized by the researcher to explain the positive pattern of variation is due to the pre-service teachers' motivation. Ellis (1994, p. 715) defined 'motivation' as 'the effort which learners put into learning an L2 as a result of their need or desire to learn it'. Motivation is considered one of the essential variables on which good language learning depends (Rubin, 1975). According to Yule (1996, p. 195), "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". Wharton (2000) claimed that successful language learners who are more motivated tend to use more strategies than unsuccessful students. Ushioda (2008) also put forward that good language learners are motivated. In the present investigation, personal motivation is assumed to be one of the factors that drive pre-service teachers

with both high and moderate language proficiency employ a more variety and a greater frequency of LLSs than the counterparts with low proficiency at the overall and category LLS levels, and higher language proficiency to employ significantly more strategies than the counterparts with lower proficiency at the individual LLS level.

One more possible factor which could explain the higher use of LLSs reported by pre-service teachers with higher language proficiency is the high awareness of LLSs. According to Lee and Oxford (2008), strategy awareness is the best predictor of strategy use. Chamot (1998) has found that more successful learners have more and better metacognitive awareness. When taking a closer look at the individual LLS level, it is found that a significantly greater percentage of pre-service teachers with higher proficiency than those with lower proficiency levels try to obtain and use resources, such as *'Watching English-speaking movies or TV programs'* (MET 9), *'Reading newspapers, magazines, and books in English'* (MET 10), *'Practicing English reading on the Internet'* (MET 38), *'Improving one's English from different websites'* (MET 45); or try to create good English learning environments for themselves, such as *'Participating in English classroom activities'* (SCI 43), *'Getting in touch with one's friends in English, for example, writing e-mails or letters'* (SCI 39), and *'Participating in extra-curricular activities'* (SCI 46); or try to use the senses to understand and remember, such as *'Trying not to translate verbatim'* (COG 14), *'Thinking of relationships between what one already knows and new things one learns in English (COG 1)'*, and *'Remembering new English words or phrases by remembering the context in which they appear'* (COG 7).

In sum, language proficiency has strong effect on the choice of pre-service teachers' language learning strategies, with the main positive variation patterns. The possible reasons for this may be due to the pre-service teachers' capability of English learning, their motivation, and their high awareness of language learning strategies.

6.3.5 Use of LLSs in association with Strategy Awareness

According to Lee and Oxford (2008), strategy awareness is the best predictor of strategy use. Most investigators have agreed that awareness helps students learn a language and use strategies, at least in the earlier stages of learning (Oxford, 1990; Oxford & Cohen, 1992; O'Malley & Chamot, 1990; Cohen, 1995; Chamot, 1998). Many researchers believe that learner awareness is a necessary feature of strategy use (e.g., Carrell, 1989; Cohen, 1995).

For the current study, the results show that pre-service teachers with high strategy awareness employ more significantly frequent strategy use than those with low strategy awareness in the overall strategy use, and all the four categories, with 12 out of 13 metastrategies (MET), 6 out of 7 affective strategies (AFF), 13 out of 18 cognitive strategies (COG), and 6 out of 10 sociocultural-interactive strategies (SCI), altogether 37 out of 48 individual strategies. This is consistent with most previous studies (e.g. Oxford, 1990; O'Malley & Chamot, 1990; Oxford & Cohen, 1992; Cohen, 1995; Chamot, 1998; Lee & Oxford, 2008).

The significant variation between pre-service teachers' strategy awareness and strategy choice might be due to learners' language proficiency level, the role of strategy awareness, and the nature of the metastrategies, which are specified as follows:

One possible reason for explaining the significant variations between learners with high and low strategy awareness is learners' language proficiency level, as Radwan (2011) stated that more proficient learners usually use more strategies than less proficient learners, and Chamot (1998) claimed that awareness of one's own strategies is closely related to metacognition, therefore, more successful learners have more and better metacognitive awareness.

Another possible explanation for the significant variation between pre-service teachers' strategy awareness and strategy choice is the role of strategy awareness, which is supported by what Pressley et. al. (1989) noted that the learner can actively transfer a given strategy to a new learning situation only when the strategy is in awareness, what Allwright (1990) and Little (1991) stated that learning strategies can enable students to become more independent, autonomous, lifelong learners, and what Wichadee (2011) declared that strategic awareness is a prerequisite for strategy use. Generally speaking, only when learners have strategy awareness can they use the language learning strategies. The reason: 'having no strategy awareness', for which pre-service teachers reported infrequent use of certain strategies, gives support of this.

Metastrategies are the most frequently used by pre-service teachers with high strategy awareness. Examples are: '*Systematically reviewing vocabulary, texts and notes before exams*' (MET 42) for implementing plans, '*Trying to find out how to learn English well*' (MET 22) for evaluating, and '*Having clear goals for improving one's English skills*' (MET 25) with the aim of planning. The possible explanation for the high use of metastrategies is to do with the nature of the metastrategies. Metastrategies refers to strategies that provide general management/control of

cognitive strategies, including metacognitive, meta-affective and metasocial strategies, with the purpose of managing and controlling L2 learning in a general sense (Oxford, 2011), as Lee and Oxford (2008) claimed that metacognitive strategies involve awareness of cognitive processes, so it is not surprising to have the strongest relationship between strategy awareness and metacognitive strategies.

6.3.6 Use of LLSs in association with Personality Types

The findings of the present investigation indicate that significant variations in pre-service teachers' choices of LLS use exist in respect of personality types: extroversion-introversion scale and judging-perceiving scale. This finding is consistent with some previous studies, showing evidence of significant relationships between personality types and language learning strategies. This means that certain personality types appear to be related to the choice of language learning strategies, and language learners' personalities affect their preference and avoidance of strategy use (Ehrman & Oxford, 1990; Ellis, 1994; Oxford & Ehrman, 1995; Wakamoto, 2000; Liyange, 2004; Li & Qin, 2006; Sharp, 2008). However, it does not fit in with some other studies, which have failed to find relationships between personality and strategy use (Carrell, Prince & Astika, 1996; Conti & Kolody, 1999; Sharp, 2008; Conti & McNeil, 2011). The contradiction of the results may be due to various methodological deficiencies or because the effects of personality types may be situation-dependent or mediated by other variables (Dörnyei, 2005).

When taking the two scales into consideration, we found that significant variations exist in students' strategy use in all the four categories: MET, COG, AFF and SCI in terms of extroversion and introversion scale, while no significant variation in the AFF category according to judging-perceiving scale were found. The results

also show that significant variations exist in the use of 28 out of 48 individual strategies in terms of extroversion-introversion, while only 13 out of 48 individual strategies in relation to judging-perceiving were found significant. We can come to a conclusion that extroversion-introversion scale has more influence on LLS choice than judging- perceiving scale. This is not consistent with Li and Qin (2006), who claimed that judging-perceiving has more influence on strategy choice than extroversion- introversion. The inconsistency of the findings may be because of the different participants and research instruments in the two studies.

6.3.6.1 LLS Use in association with Extroversion-Introversion

Extroversion has been one of the most discussed personality factors in language learning and the findings of previous studies on extroversion appear to be varied (Kang, 2012). The extroversion-introversion scale references a tendency to prefer stimulation, company of others, and engagement with the external world (Costa & McCrae, 1992). The majority of findings from previous studies on the relationships between extroversion-introversion and LLSs have reported that extroverted students preferred to use social strategies (Ehrman & Oxford, 1989, 1990; Li & Qin, 2006; Sharp, 2008), functional practice and social-affective strategies (Wakamoto, 2000; Liyanage, 2004), and affective and visualization strategies (Ehrman & Oxford, 1989). In comparison, introverted students preferred to use metacognitive strategies while avoiding using social strategies (Ehrman & Oxford, 1990; Sharp, 2008) and strategies for searching for and communicating meaning (Ehrman & Oxford, 1989).

The current study found that there exist significant variations in their reported frequency of in all the four categories: MET (metastrategies), COG (cognitive strategies), AFF (affective strategies) and SCI (sociocultural-interactive

strategies) in terms of extroversion-introversion. The main variation pattern is that extroverts reported employing strategies significantly more frequently than did the introverts, with 27 out of 28 individual strategies reporting this, among which there are 7 out of 13 MET, 7 out of 18 COG, 3 out of 7 AFF, and 10 out of 10 SCI. The second variation pattern is that introverts reported employing strategies significantly more frequently than did the extroverts, only 1 strategy reporting this.

For the main variation pattern, the most significant frequent strategy use by extroverts is SCI (sociocultural-interactive strategies). The possible reason to explain this is extroverts' sociability, an essential feature of extroversion (Ellis, 2008). According to Eysenck and Chan (1982, p. 154), "extroverts are sociable, like parties, have many friends and need excitement; they are sensation-seeker and risk-takers, like practical jokes and are lively and active." In accordance with Wakamoto (2000), extroverts prefer social strategies, like cooperation with others or asking for clarification, and functional practice strategies like seeking practice opportunities outside class. The essential feature of extroversion: sociability, just matches with the contents of sociocultural-interactive strategies, which are for contexts, communication, and culture, with the functions of interacting to learn and communicate, overcoming knowledge gaps in communicating, and match with the functions of dealing with sociocultural contexts and identities, etc (Oxford, 2011). The examples of SCI are: "*Asking the interlocutor to slow down or say it again if one doesn't understand*" (SCI 33), "*Participating in English classroom activities*" (SCI 43), and "*Asking for help from one's English teacher or friends*" (SCI 36).

Another significant frequent strategy use by extroverts is MET (metastrategies). This is in accordance with Li and Zhang's (2009) and Kang's (2012)

study that extroverts showed more frequent use of metacognitive strategies, while it is contrary to what Ehrman and Oxford (1990) and Sharp (2008) found that introverted students preferred to use metacognitive strategies. The possible explanation for the contradiction of the results could be attributed to learners' learning environments (Kang, 2012), or situation-dependence of the effects on strategy choice of personality types (Dörnyei, 2005).

For the present study, extroverts use metastrategies significantly more frequently than introverts as follows: “*Practicing English reading on the Internet*” (MET 38), “*Improving one’s English from different websites*” (MET 45), “*Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone*” (MET 12), obtaining and using resources : “*Having clear goals for improving one’s English skills*” (MET 25), and “*Planning one’s schedule so one will have enough time to learn English*” (MET 23), planning or organizing: “*Looking for opportunities/ chances to read as much as possible in English*” (MET 24), monitoring: “*Attending extra classes at a language school*” (MET 44) implementing plans: since extroverted pre-service teachers prefer to use MET to deal with the environment rather than with themselves (Ehrman & Oxford, 1990), or to cope with the educational contexts (Sharp, 2008) in which extroverts prefer to use these strategies to succeed in school exams and university exams. According to Li and Zhang (2009), metacognitive strategies require learners to interact with outer world, since metacognitive strategies are concerned with controlling and regulating strategy use and learning processes. Oxford (2011) considers metastrategies as strategies that provide general management/ control of cognitive strategies, including metacognitive, meta-affective and metasocial strategies, with the functions of paying attention,

planning, obtaining and using resources, organizing, implementing plans, orchestrating strategy use, monitoring, evaluating, etc.

The second variation pattern shows that introverts reported employing strategies significantly more frequently than did the extroverts. The only strategy reported this is “*Noticing whether one is nervous or not when reading or using English*” (AFF 31). The possible explanation for this could be introverted learners’ natural preference that they prefer more to learning alone best, avoiding social contact and surprise (Wakamoto, 2000), so that they are more easily become nervous and pay attention to the feelings of nervousness.

6.3.6.2 LLS Use in association with Judging-Perceiving

Ehrman and Oxford’s (1989) study showed that for the judging-perceiving scale, judges report using general strategies significantly more frequently than perceivers, but do not use independent strategies and self-management strategies significantly more often, while perceivers show an advantage over judges in the use of strategies for searching for and communicating meaning. According to Li and Qin (2006), judging is found to significantly influence seven strategies, namely, the cognitive strategies of practicing, rehearsal and summarizing, the metacognitive strategies of arranging and planning, self-evaluating and monitoring and the social strategy of cooperation, turning out to be the most influential personality type affecting the use of learning strategies in the present analysis. Judging learners indicate clear preference for the metacognitive strategy.

In this present investigation, the judges reported employing strategies significantly frequently than perceivers in all the four categories except AFF category, with 5 metastrategies, 3 cognitive strategies, 3 socio-cultural interactive strategies,

and 1 affective strategy. The main variation pattern is that judges reported employing strategies significantly more frequently than did perceivers, with 12 out of 28 individual strategies reporting this, among which there are 5 out of 13 MET, 3 out of 18 COG, 3 out of 10 SCI, and 1 out of 7 AFF. The second variation pattern is that introverts reported employing strategies more frequently than judges, concerned with only 1 strategy.

The main findings of the main variation pattern are consistent with what Ehrman and Oxford (1989) and Li and Qin (2006) claimed that there is a significant variation in learners' choices of LLSs in relation to judging- perceiving scale. The most frequently reported used category is metastrategy. The examples are: *'Listening to English radio programs, news or songs on the Internet, by an MP3/4 or a mobile phone'* (MET 12) with the aim of obtaining and using resources, *'Thinking about one's progress in learning English'* (MET 26) for evaluating, *'Having clear goals for improving one's English skills'* (MET 25) with the aim of planning. The result is consistent with what Li and Qin (2006) claimed that judging learners indicate clear preference for the metacognitive strategy. The possible explanation of higher frequency of strategy use by judges may be due to what Ellis (2008) called essential feature. According to Ehrman (1996), judging learners favor a planned and orderly way, seeking closure and finality. According to Myers and McCaulley (1985), judges' natural preferences for structure, organization, system and control may well be expressed in their needs of the metacognitive strategies.

The second variation pattern is that introverts reported employing strategies more frequently than judges, concerned with only 1 strategy: *'Making up new words if one does not know the precise ones in English'* (COG 17). The possible

explanation could also be due to what Ellis (2008) called essential feature. According to Ehrman (1996), perceiving learners like flexibility and spontaneity and therefore like to keep their options open. Therefore, they could be flexible to make up new words when they do not know the precise ones.

To summarize, the findings of the present study show that there exist effects on pre-service teachers' LLS choices by personality types: extroversion-introversion scale and judging-perceiving scale, which is consistent with most previous studies, while contrary to some previous ones. The contradiction of the results is possibly because there are different research methods in different studies, or the effects of personality types may be situation-dependent or mediated by other variables. The main variation patterns for personality types are that extroverts employed strategies significantly more frequently than introverts, and judgers employed strategies significantly more frequently than perceivers, which may be due to their essential feature or natural inclination.

All in all, the findings of the present study have revealed that all the five independent variables for the present study, i.e. gender, enjoyment of English learning, language proficiency, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale, have been found strongly associated with pre-service teachers' strategy choice with various different reasons. On the whole, the relationship between pre-service teachers' choices of language learning strategy use and the variables seem to be complex, and we can not be definitely certain about what really caused these significant differences. Therefore, further research to examine these aspects is needed.

6.4 Pedagogical Implications of the Research Findings

As summarized in Section 6.2, the research findings in response to the research questions demonstrate that the five chosen variables, namely, pre-service teachers' gender, enjoyment of learning English, language proficiency, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale all have effects on language learning strategy choices. The researcher finds that the research findings may be helpful for both teachers and pre-service teachers. Therefore, some implications for the teaching and learning of English for English-major pre-service teachers in the Midwest of China may be drawn as follows:

1) In general, English major pre-service teachers in Midwest China reported a moderate level of LLS use, with 5 out of 48 strategies high-frequently used. Therefore, there is a need for helping pre-service teachers to raise their strategy awareness. In addition, the results of the variation in LLS use at different levels have shown the significant variation in pre-service teachers' reported frequency of the use of overall strategy, all the four categories: MET, COG, AFF and SCI, and 37 out of 48 individual strategies in terms of strategy awareness. Pre-service teachers with high strategy awareness reported significantly more frequent strategy use than the counterparts with low strategy awareness, which also gives support for the need of cultivating pre-service teachers' strategy awareness. In this regard, it is suggested that a semi-seminar about language learning strategies to arouse their strategy awareness be held for these learners outside of class, or some talks or speeches be held in English classes.

2) Arising out from the research findings, female pre-service teachers generally reported significantly more frequent use of overall strategy, the COG and

AFF categories, and 16 out of 48 individual strategies than their male counterparts. This implies that male pre-service teachers need more help in developing their language learning strategies. In this regard, it is better for English teachers of these pre-service teachers to encourage them to employ a wide range of strategies for the purpose of learning English better.

3) Concerning with pre-service teachers' enjoyment of English learning, the findings in the present study have shown that a significant variation in their reported frequency of overall strategy use, all the four categories, and 41 out of 48 individual LLSs. Generally speaking, pre-service teachers with higher enjoyment of English learning use more strategies than counterparts with lower enjoyment of English learning. In addition, the results from the interview also give support that having interest or habit is one of the reasons for frequent use of strategies, and having no interest or habit is one of the reasons for infrequent use of strategies. Therefore, it is recommended that teachers of English should arouse pre-service teachers' enjoyment of English learning, for example, keep trying different teaching methods and making modifications to find some teaching methods or styles that students think they are interesting, help them get touch to rich English learning materials on internet, help create good English speaking environments, encourage them to use various learning strategies to learn English, encourage them to do more communication with their friends, etc., with the purpose of helping them become more interested in learning English.

4) In association with pre-service teachers' language proficiency, the findings in the present study have demonstrated that pre-service teachers with both high and moderate language proficiency reported significantly more frequent strategy

use in the overall strategies and the MET, COG and SCI categories than their counterparts with low language proficiency. There mainly exists positive pattern of variation among 16 out of 48 individual strategies. As one of the important findings for this variable is that learners with higher language proficiency use more metastrategies, which provide general management/control of metacognitive, metaaffective and metasocial strategies, aiming to understand one's own needs, using and adjusting the other strategies to meet those needs. Therefore, it is recommended that pre-service teachers with low language proficiency need to be guided or trained for language learning strategy use, especially use of metastrategies, so as to become more familiar with and get used to various strategies and to apply strategies appropriately and effectively.

5) The findings of the present investigation also indicate that there exist significant variations in pre-service teachers' choices of LLS use in respect of their personality types: extroversion-introversion scale and judging-perceiving scale because of their own essential feature or natural inclination. For the extroversion-introversion scale, extroverts prefer all the sociocultural-interactive strategies, while introverts prefer learning alone best, avoiding social contact and surprise. For the judging-perceiving scale, judges favor a planned and orderly way, whereas perceivers like flexibility and spontaneity. Therefore, it is highly recommended that English teachers for pre-service teachers should consider individual language learners' different personality types, give different instructions, set appropriate tasks separately, or give different checking criteria of tasks to students with different personality types.

6) According to Nunan (1997), Cohen (1998), and Chamot et al. (1999), students' use of strategies can be teachable and trainable. Therefore, it is suggested that English teachers of the pre-service teachers should train their students, especially those students with low language proficiency, to help them have awareness of various strategies, make maximum use of strategies, find their own appropriate language learning strategies, etc. Strategy training can also be suggested to be integrated into the language curriculum to facilitate learners' effective language learning. Some models for strategy training can also be recommended, which have existed and developed by some researchers in the field, i.e. Styles and Strategies-based Instruction (Cohen, 1998), Grenfell and Harris Model (Grenfell and Harris, 1999), and Cognitive Academic Language Learning Approach (Chamot, 2005).

7) According to Mlstar (2000), understanding learning strategies that learners employ in acquiring the language skill is important to come to ideas of how to promote learner autonomy. Little (1997) summarizes the relationship that if the pursuit of learner autonomy requires that we focus explicitly on the strategic capability of language learning and language use, the reverse should also be the case: focus on strategies should lead us to learner autonomy. Therefore, it is highly recommended that pre-service teachers know clearly about their own strategy use, i.e. their strategy use frequency, their preferred strategies, the strategies appropriate for them, etc. to help them become more familiar with their language learning and become relatively more autonomous in learning. For example, pre-service teachers need to acquire some degrees of autonomy by grasping well the metastrategies, which may require them to independently make plans for their learning activities as well as evaluate the progress and to independently enhance communicative interactions with other people.

6.5 Limitations of the Present Investigation and Recommendations for Future Research

Conducted in a data-based and systematic way, the present investigation is valid and valuable in addressing the research questions, described the frequency of strategy use reported by English major pre-service teachers studying at normal universities in Midwest China, explored the possible significant variation patterns at different levels in association with the investigated variable: gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types, explored the underlying factors in LLSs reported employed by these participants, and found out reasons for their reported frequency of strategy employment. However, some limitations have also been found when conducting the research, which also shed some light for future research and need to be taken into consideration in the future as follows:

- 1) Regarding the research participants, only 836 junior English-major pre-service teachers from 6 normal universities in 3 provinces in Midwest China took part in the present study, and the numbers of the participants were even not well-balanced in relation to some of the investigated variables, i.e., gender and language proficiency. The female pre-service teachers were almost 10 times as many as male ones due to the real situations in field of study in such normal universities. The students with high language proficiency were too small in number compared with students with moderate and high language proficiency. It is hoped that if it is possible, more participants in different field of study from different parts of China can participant in the future research of language learning strategies, and the numbers of the participants could be well-balanced in terms of the investigated independent variables, so that the research findings could be more reliable and valuable.

2) The present investigation has limited itself to study the use of LLSs in relation to the 5 independent variables, that is, pre-service teachers' gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types. However, the literature review in Chapter 2 reveals that some other variables investigated in previous studies, such as tolerance of ambiguity, nationality, culture, self-efficacy beliefs, type of high schools and extra-class support are far from complete and comprehensive investigations in LLS research. Therefore, it would be interesting and significant to take these variables into consideration in future research in this field.

3) According to Cohen and Scott (1996), each investigation method has its own strong and weak points. For this study, questionnaires and interviews were employed to do data collection. As Chamot (2004) said that there are possibilities that the respondents cannot actually recall what they have done during real interactions and may not have exactly reported their strategy use. Therefore, if possible, it could be better to employ other research methods such as classroom observation, diary studies, or think-aloud protocols to triangulate the results.

4) With respect to the language learning strategy questionnaire, the present study used the modified SILL by combining and modifying Oxford's (1990) SILL Version 7.0, Yin's (2008) adapted SILL, and Rao's (2008) adapted SILL. Although it is comparatively comprehensive with 48 strategy items appropriate for learners in the Chinese context, it would be better and of great significance if some researchers could form new strategy questionnaires with more representative, appropriate and comprehensive strategy items by using the research instruments of questionnaires and especially interviews to elicit rich information from different types of English language learners in China.

6.6 Conclusion

Conducted in a data-based, systematic and non-judgmental descriptive manner, the present study investigated the use of language learning strategies by English-major pre-service teachers in the Midwest of China. The study contributed to the field of language learning strategies in terms of the significance of the study, which may fill in some research gaps in the field of strategy use in China; in terms of the subjects, since few English-major pre-service teachers have been examined in language learning strategy research in China; concerned with the effects of enjoyment of English learning and strategy awareness on learners' strategy use in Chinese context, which have rarely been investigated; in relation to the relatively newer and more comprehensive classification by Oxford (2011); and with regard to data collection with both quantitative and qualitative research methods employed.

The research results demonstrated that the frequency of strategy use by English-major pre-service teachers was in moderate use at the overall level, category level, and individual strategy level in 38 strategy items. The frequency of pre-service teachers' overall LLS use varied significantly according to the five variables: gender, language proficiency, enjoyment of learning English, strategy awareness, and personality types: extroversion-introversion scale and judging-perceiving scale, with different variation patterns separately. 6 main underlying factors of language learning strategies employed by the English-major pre-service teachers emerged by factor analysis. 5 reasons for pre-service teachers' using certain strategies frequently and also 5 reasons for their employing certain strategies infrequently were concluded based on the data of the semi-structured interview.

Finally, based on the research findings, the researcher has proposed some pedagogical implications for the teaching and learning of English conversational skills to English majors, especially for English major pre-service teachers in Midwest China. Additionally, the researcher has provided the limitations of the present study and some suggestions for future research. It is hoped that future research can gain further insights into how language learning strategies are employed by different language learners in different learning contexts, and may help them enhance their learning outcomes and become successful autonomous language learners.





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APPENDIX

APPENDIX A

Background Information Questionnaire

(English Version)

Dear students,

How are you?

Firstly, thank you so much for your kindly participation and cooperation! The following questionnaires will only be used in this research, not concerned with the personal evaluation towards you, without 'right' or 'wrong' answers. It will be treated with the utmost confidentiality. Please complete the following questionnaires by filling the blanks or click '√'. Thanks!

1. Student ID number: _____
2. Age: _____
3. Gender: Male Female
4. Do you enjoy learning English?
 Not at all Not very much Somewhat
 A lot Extremely
5. How long have you learned English outside of class everyday in general?
 Less than 1 hour 1 to 2 hours More than 2 hours
6. How do you self-evaluate your English language proficiency?
 Very poor poor Fair
 Good Excellent
7. Your score of TEM-4 is:
 Under 50 50-59 60-69 70-79 Over 80
8. Your QQ number is: _____

APPENDIX B

Background Information Questionnaire

(Chinese Version)

个人背景问卷

亲爱的同学：

您好！首先，对您的参与和支持，表示诚挚的谢意！此问卷仅用于此科学研究，不涉及对您的个人评价，答案无好坏之分，您的答案将绝对保密。请不要顾虑，请您填写完整表格。

1. 学号： _____
2. 年龄： _____
3. 性别： 男 女
4. 您喜欢英语学习吗？
 一点都不喜欢 并不是很喜欢 有一点喜欢
 很喜欢 极其喜欢
5. 您平均每天课外学习英语的时间大约为：
 少于 1 小时 1-2 小时 2 小时以上
6. 您如何评估你的外语学习水平？
 很差 差 一般 好 很好
7. 您的英语专业四级成绩为：
 50 以下 50-59 60-69 70-79 80 以上
8. 您的 QQ 号为： _____

APPENDIX C

Language Learning Strategy and Strategy Awareness

Questionnaire (English Version)

Instructions: This questionnaire is to investigate language learning strategy use by English-major pre-service teachers. Please read carefully and make your right choice. For the strategy awareness, the choice of ‘Yes’ or ‘No’ is to answer the question: ‘Did you know or think about this strategy before?’ For the frequency of strategy use, ‘1’ stands for ‘Never/Almost never used’; ‘2’ for ‘Not often used’; ‘3’ for ‘Sometimes used’; ‘4’ for ‘Often used’; and ‘5’ for ‘Always/Almost always used’. There are no ‘right’ or ‘wrong’ answers. Please mark your response with ‘√’ in the corresponding space according to what you really think. Thank you for your cooperation!

Language Learning Strategies	Strategy Awareness		Frequency of Strategy Use				
	Yes	No	1	2	3	4	5
1. I think of relationships between what I already know and new things I learn in English.	Yes	No	1	2	3	4	5
2. I use new English words in a sentence so that I can remember them.	Yes	No	1	2	3	4	5
3. I connect the sound of a new English word and an image or picture of the word to help me remember the word.	Yes	No	1	2	3	4	5
4. I use vocabulary books or electronic dictionaries to remember new English words.	Yes	No	1	2	3	4	5
5. I say or write new English words several times to remember them.	Yes	No	1	2	3	4	5
6. I review English lessons often.	Yes	No	1	2	3	4	5
7. I remember new English words or phrases by remembering the contexts in which they appear.	Yes	No	1	2	3	4	5
8. I try to talk like native speakers.	Yes	No	1	2	3	4	5
9. I watch English-speaking movies or TV programs.	Yes	No	1	2	3	4	5
10. I read newspapers, magazines, and books in English.	Yes	No	1	2	3	4	5

Language Learning Strategies	Strategy Awareness		Frequency of Strategy Use				
	Yes	No	1	2	3	4	5
11. I write diaries or short articles in English.	Yes	No	1	2	3	4	5
12. I listen to English radio programs, news or English songs on Internet, by MP3/4, or by mobile phone.	Yes	No	1	2	3	4	5
13. I get the meaning of an English word by dividing it into parts that I understand, such as roots, prefixes, and suffixes.	Yes	No	1	2	3	4	5
14. I try not to translate word-for-word.	Yes	No	1	2	3	4	5
15. I guess the meaning of the unfamiliar English words.	Yes	No	1	2	3	4	5
16. I use gestures to convey my meaning during a conversation in English.	Yes	No	1	2	3	4	5
17. I make up new words if I do not know the precise ones in English.	Yes	No	1	2	3	4	5
18. I read English without looking up every new word.	Yes	No	1	2	3	4	5
19. I try to predict what the other person will say next in English.	Yes	No	1	2	3	4	5
20. If I cannot think of an English word, I use a word or phrase that means the same.	Yes	No	1	2	3	4	5
21. I improve my English from my own mistakes.	Yes	No	1	2	3	4	5
22. I try to find out how to learn English well.	Yes	No	1	2	3	4	5
23. I plan my schedule so that I will have enough time to learn English.	Yes	No	1	2	3	4	5
24. I look for opportunities/chances to read as much as possible in English.	Yes	No	1	2	3	4	5
25. I have clear goals for improving my English skills.	Yes	No	1	2	3	4	5
26. I think about my progress in learning English.	Yes	No	1	2	3	4	5
27. I try to relax whenever I feel afraid of using English.	Yes	No	1	2	3	4	5
28. I encourage myself to speak English even when I am afraid of making mistakes.	Yes	No	1	2	3	4	5
29. I give myself a reward or treat when I do well in English.	Yes	No	1	2	3	4	5
30. I tell myself that there is always more to learn when learning English.	Yes	No	1	2	3	4	5
31. I notice whether I am nervous or not when I am reading or using English.	Yes	No	1	2	3	4	5
32. I talk to someone else about how I feel when I am learning English.	Yes	No	1	2	3	4	5
33. If I do not understand something in English, I ask the other person to slow down or say it again.	Yes	No	1	2	3	4	5

Language Learning Strategies	Strategy Awareness		Frequency of Strategy Use				
	Yes	No	1	2	3	4	5
34. I ask my English teacher or fluent speakers of English to correct me when I talk.	Yes	No	1	2	3	4	5
35. I practice speaking English with other students.	Yes	No	1	2	3	4	5
36. I ask for help from my English teacher or my friends.	Yes	No	1	2	3	4	5
37. I try to learn about the culture of English-speaking countries.	Yes	No	1	2	3	4	5
38. I practice English reading on the Internet.	Yes	No	1	2	3	4	5
39. I get touch with my friends in English, for example, writing e-mails or letters.	Yes	No	1	2	3	4	5
40. I remember new expressions by two-way translation.	Yes	No	1	2	3	4	5
41. I try to understand the complex English sentences by analyzing their grammatical structures.	Yes	No	1	2	3	4	5
42. I systematically review vocabulary, texts and notes before exams.	Yes	No	1	2	3	4	5
43. I participate in classroom activities in English classes.	Yes	No	1	2	3	4	5
44. I attend extra classes at a language school.	Yes	No	1	2	3	4	5
45. I improve my English from different websites.	Yes	No	1	2	3	4	5
46. I participate in extra-curricular activities.	Yes	No	1	2	3	4	5
47. I do a lot of exam-oriented exercises before exams.	Yes	No	1	2	3	4	5
48. I always encourage myself not to be discouraged by poor exam results.	Yes	No	1	2	3	4	5

Open-ended question:

Can you identify any strategies you have used but cannot find in this language learning strategy questionnaire? If so, please list the strategies below.

APPENDIX D

Language Learning Strategy and Strategy Awareness

Questionnaire (Chinese Version)

英语学习策略问卷

问卷说明: 本问卷旨在调查英语专业本科师范生英语学习策略的选择。请仔细阅读以下陈述, 首先对策略意识做出选择, 然后对该策略使用频率做出选择, 在答案上画“√”。答案没有对错之分, 请根据您的实际情况做出选择。感谢您的配合!

选项说明: 1. (几乎)从不如此 2. 很少如此 3. 有时如此
4. 通常如此 5. (几乎)总是如此

英语学习策略	策略意识		策略使用频率				
	是	否	(几乎)从不如此	很少如此	有时如此	经常如此	(几乎)总是如此
1. 我会把新学的东西和已学过的部分做联想。	是	否	1	2	3	4	5
2. 我用新学的单词造句, 以加深记忆。	是	否	1	2	3	4	5
3. 我会把英文单词的发音和这个字的形象或图像联想起来, 以帮助记忆。	是	否	1	2	3	4	5
4. 我使用词汇书或电子字典来记忆英文生词。	是	否	1	2	3	4	5
5. 我会反复练习说或写英文生词来记忆。	是	否	1	2	3	4	5
6. 我时常复习英语课文。	是	否	1	2	3	4	5
7. 我会利用英语生词或短语出现的语境来记忆。	是	否	1	2	3	4	5
8. 我努力像英语本族语者那样说话。	是	否	1	2	3	4	5
9. 我看英文发音的电影或电视节目。	是	否	1	2	3	4	5

英语学习策略	策略意识		策略使用频率				
	是	否	(几乎)从不如此	很少如此	有时如此	经常如此	(几乎)总是如此
10. 我读英文报纸、杂志和书籍。	是	否	1	2	3	4	5
11. 我用英文写日记或小短文。	是	否	1	2	3	4	5
12. 我在网络上收听、或通过MP3\4或手机听英语广播节目、新闻、或英文歌曲。	是	否	1	2	3	4	5
13. 我把一个英文单词拆成几个我认得的部分,如:词根、前缀和后缀,以找出它的意思。	是	否	1	2	3	4	5
14. 我会避免逐字翻译。	是	否	1	2	3	4	5
15. 遇到不熟悉的英语单词时,我会猜测。	是	否	1	2	3	4	5
16. 在英语对话中,我会用手势来表达意思。	是	否	1	2	3	4	5
17. 想不出确切的英文词时,我会发明新词。	是	否	1	2	3	4	5
18. 读英文时,我不会每一个生词都去查字典。	是	否	1	2	3	4	5
19. 我会去猜测别人下一句要说的英文。	是	否	1	2	3	4	5
20. 当我想不出某个英文词时,我会使用其它意思相同的词语。	是	否	1	2	3	4	5
21. 我通过认识自己的错误来提高英语。	是	否	1	2	3	4	5
22. 我试着找出如何学好英语的方法。	是	否	1	2	3	4	5
23. 我会制定作息表,使有足够的时间学英语。	是	否	1	2	3	4	5
24. 我会寻找机会尽可能多地用英语阅读。	是	否	1	2	3	4	5
25. 我有明确目标提高自己的英语技能。	是	否	1	2	3	4	5
26. 我会考虑自己学英语的进展。	是	否	1	2	3	4	5
27. 每当我害怕使用英语时,我会设法放松自己。	是	否	1	2	3	4	5
28. 即使害怕犯错,我还是会鼓励自己说英语。	是	否	1	2	3	4	5
29. 每当我在英语上表现良好时,我会奖励自己。	是	否	1	2	3	4	5
30. 我告诉自己学习英语总是有更多东西要学。	是	否	1	2	3	4	5

英语学习策略	策略意识		策略使用频率				
	您以前是否知道该学习策略?		(几乎)从不如此	很少如此	有时如此	经常如此	(几乎)总是如此
31. 我读英语或说英语时会注意自己是否很紧张。	是	否	1	2	3	4	5
32. 我会告诉别人自己学英语的感受。	是	否	1	2	3	4	5
33. 假如在英语会话时有听不懂的地方,我会要求对方说慢一点或再讲一次。	是	否	1	2	3	4	5
34. 说英语时,我会要求英语老师或英语流利者纠正我的错误。	是	否	1	2	3	4	5
35. 我会和其他同学练习说英语。	是	否	1	2	3	4	5
36. 我会向英语老师或朋友寻求帮助。	是	否	1	2	3	4	5
37. 我试着了解说英语国家的文化。	是	否	1	2	3	4	5
38. 我用网上的资料练习英语阅读。	是	否	1	2	3	4	5
39. 我用英语与朋友联系,如写邮件或写信。	是	否	1	2	3	4	5
40. 我用英汉互译法记住新的英语表达。	是	否	1	2	3	4	5
41. 我试着分析语法结构以理解英语难句。	是	否	1	2	3	4	5
42. 在考前我会系统复习和考试有关的词汇、课文和笔记。	是	否	1	2	3	4	5
43. 在英语课上我参与课堂活动。	是	否	1	2	3	4	5
44. 我在外语学校上额外的英语课程。	是	否	1	2	3	4	5
45. 我通过不同的英文网站提高英语。	是	否	1	2	3	4	5
46. 我参加课外英语活动。	是	否	1	2	3	4	5
47. 在考前我会做很多与考试有关的练习。	是	否	1	2	3	4	5
48. 我总是鼓励自己不要因为考得不好而泄气。	是	否	1	2	3	4	5

开放式问题：请问还有你用过但在问卷中没有被列出的外语学习策略吗？如果有，请在下面列举出来。谢谢！



APPENDIX E

Personality Type Inventory: MBTI-M

(English Version)

I. Extroversion-Introversion Scale

(1) Which answer comes closest to describing how you usually feel or act?

- () 1. Are you usually
A. a “good mixer”, or B. rather quiet and reserved?
- () 2. Are you
A. easy to get know, or B. hard to get know?
- () 3. Would most people say you are
A. a very open person, or B. a private person?
- () 4. In a large group do you more often
A. introduce others, or B. get introduced?
- () 5. Do you tend to spend a lot of time
A. by yourself, or B. with others?
- () 6. Do you find being around a lot of people
A. gives you more energy, or B. is often “draining”?
- () 7. At parties, do you
A. always have fun, or B. sometimes get bored?
- () 8. Do you usually
A. mingle well with others, or B. tend to keep more to yourself?
- () 9. Would you say it generally takes others
A. a little time to get to know you, or
B. a lot of time to get to know you?

II. Judging-Perceiving Scale

(1) Which answer comes closest to describing how you usually feel or act?

- () 1. When you go somewhere for the day, would you rather
 A. plan what you will do and when, or B. just go?
- () 2. Do you consider yourself to be
 A. more of an organized person, or B. more of a spontaneous person?
- () 3. Do you prefer to do many things
 A. according to your plans, or B. on the spur of the moment?
- () 4. Does following a schedule
 A. appeal to you, or B. cramp you?
- () 5. When you have a special job to do, do you like to
 A. organize it carefully before you start, or
 B. find out what is necessary as you go along?
- () 6. In most instances, do you prefer to
 A. follow a schedule, or B. go with the flow?
- () 7. Do you prefer to
 A. plan things far in advance, or
 B. wait and see what happens and then make plans?
- () 8. Do you prefer to
 A. arrange dates, parties, etc., well in advance, or
 B. be free to do whatever looks fun when the time comes?
- () 9. In planning a trip would you prefer to
 A. most of the time do whatever you feel like that day, or
 B. know ahead of time what you'll be doing most of days?
- () 10. In your daily work, do you
 A. rather enjoy an emergency that makes you work against time, or
 B. usually plan your work so you won't need to work under pressure?

APPENDIX F

Personality Type Inventory: MBTI-M

(Chinese Version)

MBTI-M 人格因素“性格内向/外向”维度

一、下面哪一个答案最能贴切地描绘您一般的感受或行为？

- () 1. 您通常： A. 与人容易混熟 B. 比较沉静或矜持
- () 2. 您是否： A. 容易让人了解 B. 难于让人了解
- () 3. 大多数人会说您是一个：
A. 非常坦率开放的人 B. 重视自我隐私的人
- () 4. 在一大群人当中，通常是：
A. 你介绍大家认识 B. 别人介绍您
- () 5. 您喜欢花很多的时间：
A. 一个人独处 B. 和别人在一起
- () 6. 与很多人一起会：
A. 令您活力倍增 B. 常常令您心力憔悴
- () 7. 在社交聚会中，您：
A. 常常乐在其中 B. 有时感到郁闷
- () 8. 您通常： A. 和别人容易混熟 B. 趋向自处一隅
- () 9. 您认为别人一般：
A. 用很短的时间便认识您 B. 要花很长时间才认识您

二、在下列每一对词语中，哪一个词语更合您心意？请仔细想想这些词语的意义，而不要理会他们的字形或读音。

- () 10. A. 坦率开放 B. 注重隐私
- () 11. A. 热衷 B. 文静
- () 12. A. 外向 B. 文静
- () 13. A. 健谈 B. 矜持
- () 14. A. 朋友众多 B. 朋友不多
- () 15. A. 爱合群 B. 文静

三、哪一个答案最能贴切地描绘您一般的感受或行为?

- () 16. 在社交场合中, 您经常会感到:
A. 与多数人都能从容地长谈
B. 与某些人很难打开话匣儿和保持对话
- () 17. 您刚认识的朋友能否说出您的兴趣?
A. 马上可以
B. 要待他们真正了解您之后才可以
- () 18. 和一群人在一起, 您通常会选:
A. 参与大伙的谈话
B. 跟您很熟悉的个别人谈话
- () 19. 在社交聚会上, 您会:
A. 是说话很多的一个
B. 让别人多说话
- () 20. 您能否滔滔不绝地与人聊天?
A. 几乎跟任何人都可以
B. 只限于跟您有共同兴趣的人
- () 21. 您是否:
A. 可以和任何人按需求从容地交谈
B. 只是对某些人或在某些情况下才可以畅所欲言

MBTI-M 人格因素“判断/直觉”维度

一、下面哪一个答案最能贴切地描绘您一般的感受或行为?

- () 1. 当您要外出一整天, 您会
A. 计划您要做什么和在什么时候做
B. 说去就去
- () 2. 您认为自己是一个: A 较为有条理的人
B. 较为随兴所至的人
- () 3. 处理许多事情上, 您会喜欢:
A. 按照计划行事
B. 凭兴致所至行事
- () 4. 按照程序表做事: A. 合您心意
B. 令您感到束缚
- () 5. 当您有一份特别的任务, 您会喜欢:
A. 开始前小心组织计划
B. 边做便找须做什么
- () 6. 在大多数情况下, 您会选择:
A. 按程序表做事
B. 顺其自然
- () 7. 您比较喜欢: A. 很早就作计划
B. 坐观事情发展才作计划
- () 8. 您比较喜欢: A. 很早便把约会、社交聚集等事情安排妥当
B. 无拘无束, 看当时有什么好玩就做什么
- () 9. 计划一个旅程时, 您较喜欢: A. 事先知道大部分的日子会做什么
B. 大部分的时间都是跟当天的感觉行事

APPENDIX G

Semi-structured Interview Questions for Students

(English Version)

- 1) What is your name?
- 2) Do you like English? Why?
- 3) How many hours do you learn English outside of class?
- 4) What is your self-rating English language proficiency? Why?
- 5) Are there some strategies that you did not have strategy awareness before? If yes, why?
- 6) Why do you use certain strategies frequently?
- 7) Why do you use certain strategies infrequently?

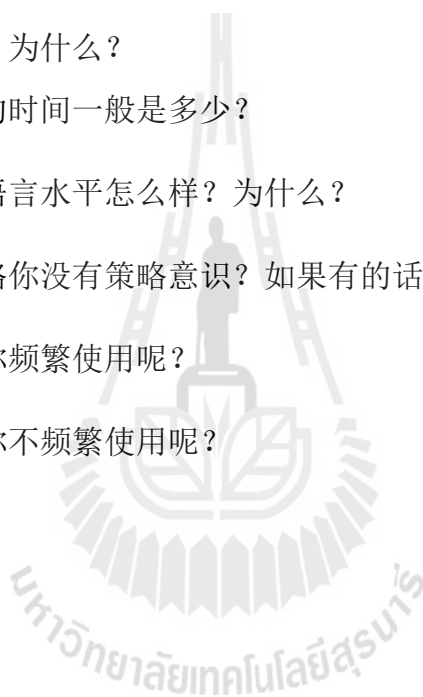


APPENDIX H

Semi-structured Interview Questions for Students

(Chinese Version)

- 1) 你叫什么名字?
- 2) 你喜欢学英语吗? 为什么?
- 3) 你课外学习英语的时间一般是多少?
- 4) 你自我评估英语语言水平怎么样? 为什么?
- 5) 会不会有一些策略你没有策略意识? 如果有的话, 是为什么?
- 6) 为什么有些策略你频繁使用呢?
- 7) 为什么有些策略你不频繁使用呢?



CURRICULUM VITAE

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