

Understanding Mainland Chinese Junior Secondary School Students'  
Metacognitive Strategies in Reading English and Chinese

by

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## ABSTRACT

Understanding Mainland Chinese Junior Secondary School Students'

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### Abstract

In recent years, the concept of metacognition has been attracting growing attention, and considerable efforts have been made in researching metacognitive strategies in language learning and reading. Previous research mostly focused on tertiary level students, with very few studies involving junior secondary school students who are still in the developmental process of L1 and L2 reading. This study investigates the self-reported use of metacognitive strategies by Chinese EFL junior secondary school students when reading English and Chinese texts respectively. The relationship between the pupils' reading proficiency and their use of metacognitive strategies in both L1 and L2 reading





is also examined. The study also explores the impact of Chinese reading strategies on English reading.

A mixed-methods approach is adopted in this study. First, a total of 272 students were classified into high, intermediate and low proficiency groups; they then responded to two Likert-type questionnaires – the Survey of Reading Strategies (SORS) and the Metacognitive Awareness of Reading Strategies Inventory (MARS) which measured use of reading strategies and metacognitive awareness when reading English and Chinese texts respectively. Second, 12 of these pupils were selected to participate in stimulated recall and then semi-structured interviews, with a view to tapping the actual reading strategies students employed when reading English texts as well as obtaining insights into the similarities and differences in strategy use in their reading process.

The quantitative results indicate that participants' English and Chinese language proficiency had an impact on their use of metacognitive strategies. The metacognitive strategies reported being used by the three levels of English and Chinese proficiency groups were significantly different from each other. More proficient readers use more metacognitive strategies than less proficient



readers. Moreover, the metacognitive strategies used in reading English are generally consistent with those involved in reading Chinese. In other words, the participants used very similar metacognitive strategies in both L1 and L2 reading. This suggests that Chinese reading strategies can be transferred to English reading at junior secondary school level.

The qualitative results suggest that the participants at different proficiency levels were all aware of metacognitive strategies when engaged in English reading. When encountering challenges in reading comprehension, students of the three proficiency levels all employed metacognitive strategies using varied selections of strategies. These differences suggest that high proficiency readers are more concerned with obtaining the overall meaning of the texts. In addition, the results reveal that some important factors such as L1 reading strategies, vocabulary, motivation, teachers and parents may have an influence on EFL junior secondary school students' English learning and reading.

Finally, a number of pedagogical implications for students and teachers to improve metacognitive strategies in reading are raised. It is recommended that EFL teachers should help their students become more strategic and effective readers. Recommendations for further research include using multiple



instruments to explore the students' metacognitive strategy use in reading, such as the researcher's observations, teachers' evaluation and students' reflecting journals.

**Keywords:** metacognition; metacognitive strategies; reading strategies; English and Chinese reading



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## **List of Abbreviations**

EFL — English as a Foreign Language

ESL — English as a Second Language

L1 — First Language

L2 — Second Language

LLS — Language Learning Strategies

GLOB — Global Reading Strategies

PROB — Problem Solving Strategies

SUP — Support Strategies

SORS —Survey of Reading Strategies

MARSI —Metacognitive Awareness of Reading Strategies Inventory





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## CHAPTER 1

### INTRODUCTION

#### 1.1 Background of the Study

At present, English is playing the role as the global lingua franca (Kirkpatrick, 2007). It has become one of the most powerful languages in educational, economic and social positions around the world (Graddol, 2006). That means currently English language learning is of great importance even to non-native English speakers. In China, enormous attention is being paid to English language learning. With China's development and important role in world affairs, the demand for English proficiency in China has also increased extraordinarily. English is widely viewed in China as 'a bridge to the future' both for the country and its citizens (Jin & Cortazzi, 2003). Because of the perceived value of English, English education has attracted enormous attention and huge investment from all stakeholders - the government, educators, students, parents and the public (Hu, 2003).

##### 1.1.1 English in China



Adamson (2002) presents a vivid picture of the evolution of English in China since 1911. Before 1949, the main function of English was for ideas and then for diplomacy and interaction. From 1949-1960, English was confined mainly to the areas of science and technology. Then, the first renaissance came with English promotion in the school curriculum. From 1961-1966, English was used for modernization and international understanding purposes. During the Cultural Revolution, 1966-1976, English speakers were regarded as suspect forces. There was a slow recovery during the following six years and English again became the language for modernization. Then from 1982 till now, there were strong demands for learning English in schools as well as for incorporating it in school curricula, resulting from economic development under the open-door policy. At present, English is nationally taught as a compulsory subject for students from junior secondary to senior high schools and also for most colleges and universities. In addition, English lessons in upper primary school are provided in schools that have the conditions to offer them (Jin & Cortazzi, 2002).

Corresponding with the history of English in China, the English language curricula over time vary along with the changes of social and political climates in China. Adamson (2004) identifies five phases of the features of the English



language curriculum in China since 1949, namely, “the end of Soviet influence”, “towards quality in education”, “the cultural revolution”, “modernization under Deng Xiaoping”, and “integrating with globalization” (p.198). The textbooks in the first four phases contain some politicized texts, especially in the third phase. In contrast, the last phase is embedded with some cultural information instead of politicized texts. At the same time, the intended learning methods in the first four phases are “structural, grammar-translation and audiolingualism”, whereas the last phase shifts to “eclectic: functional/ notional-structural” ways of learning and since 2000 “task-based learning” has been added (p.198). In China, the pedagogy for the first four phases is expressed in the teacher-centred knowledge transmission of grammatical points to students with the main focus on developing reading and writing skills, while the last phase is a more communicative way for developing the four skills of listening, speaking, reading and writing under the teacher’s guidance and students’ autonomy in task-based learning (Adamson, 2004).

In order to improve the citizens’ English competence, English is stipulated as a requirement by the Ministry of Education (MOE) as a foreign language in school curricula. The MOE made English the principal foreign language in the national curriculum and made it a compulsory subject in the National College

Entrance Examination in the early 1980s. At the same time, English is a key subject during the six-year secondary schooling. At the tertiary level, College English is a compulsory subject for non-English major students in the first two years and an elective course for the third- and fourth-year students.

In recent years, English has been continuing to grow in importance as a school subject and the MOE has stipulated that formal English instruction in school should be implemented in Primary 3 (Wen & Gao, 2007). Hence, English forms part of the curriculum at all educational levels and successful achievement in English examinations is a prerequisite for preferment to higher levels of the system, especially entry into the more distinguished universities. Based on the statistics released by the MOE (2009), there are more than 200 million primary and secondary students and 29 million full-time university students who are learning English as a foreign language (EFL) across the country.

In the junior secondary school education system, English is a compulsory subject and students must pass the entrance examinations to continue their education at senior high school at the age of 15 to 16. The examinations include a compulsory foreign language, which is nearly always English. Grammar, reading comprehension, vocabulary and translation are always emphasized,

usually in examination-oriented exercises, reviewing vocabulary and grammar notes, going through practice papers and memorizing texts (Jin & Cortazzi, 2003).

Students' competence in language learning has been viewed as an important objective in the new curriculum for secondary school students (Hu, 2005).

From 2003, English reading instruction in secondary schools in mainland China has undergone reforms. EFL teachers are encouraged to implement strategy instruction in order to “help students cultivate reading strategies and form good reading habits” (MOE of China, 2003, p.5). Students who are capable of navigating reading texts and the complexities of language while simultaneously comprehending text are more likely to succeed in their schooling (Johnson, 2006).

### **1.1.2 The importance of metacognitive strategies in reading**

For EFL students, reading is a crucial skill and plays a vital role in their English proficiency (Carrel, 1989). Reading in a foreign language is a complex process. Only through wide and efficient reading can students enlarge their vocabulary, master the rules and learn how to organize an article and thus lay a good



foundation for speaking, listening, writing and translating. In recent decades, reading strategies have played a significant role in L2 reading comprehension (Bean, 2000). In reviewing over three decades of L2 reading research, Bernhardt (2005) maintained that necessary components of a L2 reading model should take into account readers' first language (L1) literacy levels, L2 proficiency and the interactions of vocabulary levels, strategy use of reading process, background knowledge, relationships between cognate and non-cognate L1s and L2s.

The term “metacognition” refers to “one’s knowledge concerning one’s own cognitive process and products” (Flavell, 1976, p.232). At its outset in the 1970s, the concept of metacognition has been one of the focuses in educational research (Schmitt, 2005). Applying metacognition in the language learning field, refers to the action that one takes for planning, organizing, evaluating, and monitoring one’s language learning (O’Malley & Chamot, 1990). In the area of reading, this concept has provided significant insights into how readers direct their cognitive activities to achieve comprehension before, during, and after reading (Wenden, 1998). A large number of theoretical and empirical studies on the topic of metacognition have been carried out. These studies indicate that metacognitive strategies play a positive and vital role in assisting students plan

and regulate their comprehension while reading (Anderson, 1991; Barnett, 1988; Brown, Armbruster & Baker, 1986; Carrell, 1989; Carrell, Gajdusek, & Wise, 1998).

Both the first and second language reading researcher emphasized that metacognition plays a significant role in improving reading comprehension and language learning (Baker & Brown, 1984; Flavell, 1979; Flavell, Miller, & Miller, 2002; Mokhtari & Reichard, 2002; Pressley, 2002; Sheorey & Mokhtari, 2001). Moreover, several researchers (Carrell, 1998; Cordero-Ponce, 2000; Sheorey & Mokhtari, 2001) state that with the aim of making reading strategies effective during the reading process, metacognition must be applied. Followed by metacognitive studies in the L1 context, L2 researchers have also drawn great attention to them in L2 learning, especially in the reading domain. A lot of L2 reading researchers have identified the positive correlation of proficient L2 learners with more metacognitive awareness of using effective reading strategies when reading English (Barnett, 1988; Devine, 1984; Kern, 1989; Pardon, Knight, & Waxman, 1986).

Evidence from previous research has found that the main difference between effective readers and ineffective readers is to do with how much they are

engaged in a self-regulated process, in other words, the use of metacognitive strategy of comprehension monitoring (Baker & Brown, 1984). From these findings, it is indicated that successful readers are more aware of monitoring their comprehension and are also more aware of their reading strategy use. In contrast, unsuccessful readers are less strategic as they fail to monitor their comprehension in the reading process. To sum up, comprehension monitoring is viewed to be essential while reading, from intended usage of reading strategies to making adaptation in strategies use in the reading process. Good readers actively regulate their reading process and select or employ appropriate reading strategies that they find effective for the reading tasks they need to accomplish in the L2 (Chamot, 2004). In a word, metacognition is crucial for readers to regulate and direct their reading and involve thinking about the reading process. Moreover, Chamot (2005) and Cohen (1990) have suggested that teaching second language learners how and when to employ different strategies is a top priority for teaching comprehension in the reading classroom. According to Anderson (1999), L2 readers should not only learn to use a given strategy, but should also learn how to monitor whether they are successful when using these reading strategies.



## 1.2 Statement of the Problems

Metacognition is a core element for reading comprehension for learners at all levels and is also considered an essential component of ESL/EFL students' reading ability (Anderson, 2005, 2008; Carrell et al., 1998; Mokhtari & Sheorey, 2008).

However, previous studies mainly focused on the investigation of overall reading strategy use and the relationship between reading test performance and reading strategy use. Besides, the majority of Chinese researchers (Li, 2010; Liu, 2002; Rao, 2005; Yang & Zhang, 2002) have devoted themselves only to strategy use in L2 reading and not to that in L1 reading. Regarding the reading strategy use between a reader's L1 and L2, there are few studies touching on the metacognitive strategies of L1 reading for native speakers of Chinese. Because English and Chinese writing vary distinctly in their alphabetic and logographic language systems as well as discourse and syntax, as discussed in Field (1984), the transfer of some reading strategies from Chinese to English is likely to be more challenging for native speakers of Chinese. To date, only a limited number of studies have explored reading comprehension strategies both in Chinese and English (Feng & Mokhtari, 1998; Wu, 2002).



Although readers' metacognitive strategies in reading have been perceived as contributing to successful L1 and L2 reading, relatively few studies in this area have focused on Chinese junior secondary school students, who are still learning to read in Chinese and English. Due to the dearth of such studies, my research will investigate Chinese adolescent EFL learners' use of metacognitive strategies both in their first and second language reading.

### **1.3 Purpose of the Study**

A student's life invariably revolves around reading, whether it is reading textbooks, doing a comprehension exercise for English lessons or finishing an English examination paper. Reading proficiency is viewed as one of the most essential predictors of academic performance (Boland, 1993). A metacognitive approach to teaching and learning to read is proved to be an effect method to cultivate learning autonomy and to achieve reading efficiency (Wenden, 1991; Fan, 1993). That is why the study of metacognitive strategies employed by junior secondary school students in reading both English and Chinese is undertaken.



The aim of this study is to investigate Chinese EFL junior secondary school students' use of metacognitive strategies in both English and Chinese reading and further examine the relationship between their reading proficiency and their use of metacognitive strategies in English and Chinese reading. In addition, it explores the influence of L1 reading strategies on L2 reading.

*The objectives of the current study are as follows:*

1. To examine metacognitive strategy use adopted by Chinese junior secondary school students who are in the developmental process of L1 and L2 reading.
2. To examine how proficiency can affect Chinese junior secondary students' metacognitive strategies in both their L1 and L2 reading.
3. To explore the impact of L1 reading strategies on L2 reading strategy use of Chinese EFL learners at junior secondary school level.

*The objectives lead to the following three research questions:*

1. What metacognitive strategies do Chinese junior secondary students use while reading L1 and L2 texts?
2. How does students' language proficiency affect the use of metacognitive strategies in their L1 and L2 reading?

### 3. Can L1 reading strategies benefit L2 reading?

#### 1.4 Significance of the Study

The current study may shed light in informing both students' learning and teachers' teaching. First, previous research mostly focused on tertiary level students, with very few studies involving junior secondary school students who are still in the developmental process of their L1 and L2 reading. This study targets Chinese EFL junior secondary school students' metacognitive strategy use in their L1 and L2 reading and explores the impact of L1 reading on L2 reading strategy use. The focus on metacognitive strategies in reading English and Chinese for EFL learners in this study is intended to develop a better understanding of their reading processes and suggest ways to help students improve their English reading proficiency. Students might be inspired to become more active readers and to use reading strategies efficiently. The outcomes of the study suggest that highly proficient learners were distinguished from their low proficiency counterparts in both English and Chinese reading strategy use. Therefore, low proficiency learners could learn more about the effectiveness of metacognitive strategies applied by proficient readers, and adopt them to improve their reading proficiency. Furthermore, EFL learners



could be instructed in a repertoire of metacognitive strategies which they could then apply to reduce comprehension difficulties and enhance their reading proficiency.

Second, by examining and making comparisons between students' metacognitive strategy use in L1 reading and that in L2 reading, the study is expected to offer some insights into EFL reading instruction at junior secondary school level. The inquiry of students' perceptions of reading strategy use could offer EFL teachers with a deep understanding of junior secondary school students' application of reading strategy usage. In addition, exploring the role of metacognition in reading and the impact of L1 reading strategies on L2 reading strategy use may inspire teachers and educators to create innovative instructional pedagogies for reading comprehension. EFL teachers may incorporate the explicit implications of reading strategies into their reading instructional programmes and help the EFL students' to use reading strategies more effectively to enhance their reading proficiency.

## **1.5 Organization of the Thesis**

The thesis is presented in six chapters. The introduction mainly provides a





general research background and the problems of L2 reading research. The purpose and significance of this study are also addressed. Chapter 2 provides a comprehensive review of the literature, including language learning strategies, L2 language reading, factors that influence L2 reading and metacognitive strategies in reading. Chapter 3 presents the research methodology using a mixed quantitative and qualitative research methods design. It details the research design, participants, instruments, procedures for collecting and analyzing data of both the quantitative and qualitative methods. Ethical issues are also discussed. Chapters 4 and 5 report the results of quantitative and qualitative analyses of the data respectively. Chapter 6 summarizes the results and discusses the major findings of this research. Pedagogical implications, limitations of the study and recommendations for future research are also discussed. Finally comes the conclusion to the whole study.



## CHAPTER 2

### LITERATURE REVIEW

The purpose of this study is to examine metacognitive strategies adopted by Chinese EFL junior secondary school students at different proficiency levels and explore the impact of L1 reading strategies on L2 reading. In this chapter, relevant theories and studies are reviewed in order to understand the nature of the study on metacognitive reading strategies among Chinese EFL junior secondary school students. This chapter first reviews language learning strategies including definitions, classifications, and factors influencing language learning strategies. Next, we look at language reading by examining definitions and three models of reading. Some significant factors divided into individual and social factors that influence L2 reading are extracted by reviewing extensive related research papers. Individual factors including linguistic features, cultural influence, L2 language proficiency, L1 reading, vocabulary and motivation are described and social factors including the role of teachers and parents are also discussed. The following section on metacognitive strategies in reading is presented dealing with the definition of metacognition and its components. Then, the development of metacognitive strategies in reading details those involved in reading as well as those applied by middle



school students in the reading process. Finally, measures of metacognition including the use of the two instruments – SORS and MARSİ and previous studies SORS and MARSİ are reviewed and summarized.

## **2.1 Language Learning Strategies (LLS)**

Studies on LLS started in the 1960s (O'Malley & Chamot, 1990; Weinstein & Mayer, 1986). It was influenced by the development of cognitive psychology (McLaughlin, 1987; O'Malley & Chamot, 1990). In the last two decades, researchers' attention has focused on second language or foreign language (L2) learning strategies (Anderson, 1991; Carrol, 1997; Cohen, 1990, 1998, 2000; Hosenfeld, 1977; Macaro, 2006; O'Malley & Chamot, 1990; Oxford, 1990, 1993, 2011; Pearson, 1988; Rubin, 1975; Stern, 1975; Wenden, 1986, 2002). Learning a second or foreign language requires tremendous effort and invests a great deal of energy. Learners must be willing to become responsible for their learning and find ways that are suitable and effective for themselves (Carroll, 1977; Pearson, 1988). Learning strategies are tools for developing L2 communicative ability (O'Malley & Chamot, 1990). Therefore, language learners who use more learning strategies efficiently are more likely to acquire a new language than learners with limited knowledge of such strategies.

### **2.1.1 What are language learning strategies?**

In the mid-1970s, research on language learning attempted to identify what successful learners do when learning a second or foreign language by Rubin (1975) and Stern (1975) in North American contexts. Rubin (1975) claimed that good language learners were more likely to identify effective special strategies. Later, additional research studies were carried out to identify the strategies used by proficient language learners (e.g., Bialystok, 1981; Chamot, Kupper, & Impink-Hernandez, 1988) and numerous researchers have attempted to emphasize the importance of LLS use by successful language learners (e.g., Abraham & Vann, 1987; Chamot & Kupper, 1989; Naiman, Frolich, Stern, & Todesco, 1978; O'Malley & Chamot, 1990; Oxford, 1990). They have noted that, generally speaking, more successful learners employ LLS more frequently and more appropriately than do less successful learners.

Most L2 researchers agree that LLS have a positive significant relationship with language proficiency (Chamot & Kupper, 1989; O'Malley & Chamot, 1990; Oxford, 1993). Learners who are more proficient use a wider variety of strategies than less proficient learners. According to Oxford (1990), most successful learners tend to use learning strategies that are appropriate to the task,



material, aim, needs, motivation, and stage of learning. Rubin and Thompson (1994) argued that good language learners can take charge of their learning, organize their language information and take opportunities to practise the language. Successful learners also use linguistic knowledge and contextual cues to help them comprehend the text while learning a foreign language. The researchers believe that language strategy plays a significant role in L2/FL learning, due to the fact that LLS are “operations or steps employed by a learner that will facilitate the acquisition, storage, retrieval, and use of information” (O’Malley, Chamot, Stewner-Manzanares, Kupper, & Russo, 1985, p.23) and can “make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations” (Oxford, 1990, p.8).

However, different scholars define learning strategies differently according to their personal perception and belief. Researchers differed from each other as to what learning strategies are. Rubin (1975) defined LLS as “the specific techniques or devices that learners use to acquire knowledge” (p.43). Other early L2 learning and acquisition theorists refer to LLS as the conscious enterprises of learners (e.g., Bialystok, 1981). Some researchers also see learning strategies as more general higher order approaches to learning which govern the choice of more specific techniques (Naiman, Frohlich, Stern, &



Toddesco, 1978; Stern, 1983). Wenden (1986) argued that LLS are the adults' utilization of the "conscious process" in learning. O'Malley and Chamot (1990) defined LLS as the "special thoughts or behaviors that individuals use to help them comprehend, learn, or retain new information (p.1).

As we have seen from the above, the major problem is lack of consensus.

Macaro (2006) summarizes the problems as follows:

1. There is no consensus about what learner strategies are. Do they consist of knowledge, intention, action, or all three?
2. Strategy definition in the literature is arrived at through the use of equally undefined terms.
3. There is a lack of consensus on a strategy's relationship to skills and processes.
4. A lack of consensus remains on how strategies lead to both language learning and skill development over the long term.

(p.325)

For these problems, Macaro (2006) proposed a new theoretical framework to interpret LLS. LLS are conceived as occurring in "working memory" and are described "in terms of a goal, a situation, and a mental action as the raw material of conscious cognitive processing" (p.325). Macaro (2006) emphasized

the goal-oriented nature of strategy use and defined strategies as conscious mental actions. LLS are related to a broader framework of “strategic plans”, “second language processes” and “second language skills”. On the other hand, Dörnyei (2005a) and his colleagues (Tseng, Dörnyei, & Schmitt, 2006) suggested a reconceptualization of strategies within the self-regulatory paradigm and they tried to solve the problem of strategy research. According to Dörnyei (2005a), self-regulation includes metacognitive, cognitive and emotional processes that learners can apply to enhance the goals they set in respect of academic achievement. However, Gao (2007) indicated that replacing strategies with a “self-regulating capacity” does not entirely nullify the vagueness and lack of comprehensiveness inherent in the construct of strategies (Takeuchi, Ikeda, & Mizumoto, 2012, p.137).

More recently, Oxford (2011) has presented the “Strategic Self-Regulation Model” and addresses the use of strategies for self-regulation to enable learners to become independent so that they can manage their own learning. According to her, self-regulation is one of the most stimulating developments in L2 or foreign language learning and includes “self-adjustment,” meaning that if something goes wrong or needs improvement, the learner may manage it very well. In the Strategic Self-Regulation Model, self-regulated L2 learning

strategies are defined as “deliberate, goal-directed attempts to manage and control efforts to learn the L2. These strategies are broad, teachable actions that learners choose from among alternatives and employ for L2 learning purpose (e.g., constructing, internalizing, storing, retrieving, and using information; completing short-term tasks; and/or developing L2 proficiency and self-efficacy in the long term)” (p.12). The Strategic Self-Regulation Model includes “strategies for three major influential dimensions of L2 learning: *cognitive strategies* help the learner construct, transform and apply L2 knowledge; *affective strategies* help create positive emotions and attitudes and stay motivated; *sociocultural-interactive strategies* help with communication, sociocultural context, and identity” (p.14). In addition, *strategies* and *skills* were distinguished by Oxford (2011). “Skills are automatic and out of awareness, whereas strategies are intentional and deliberate”. However, “it is impossible tell whether an action is a strategy or a skill without finding out whether it is under the learner’s automatic or deliberate control” (p.12). In addition, some scholars posit that a strategy itself is neutral, which suggests that a strategy’s effectiveness is dependent upon how it is used and in what context (Nyikos, 1991; Oxford, 1993; Oxford & Cohen, 2004).

### **2.1.2 Classification of language learning strategy**



Similar to the definition of language learning strategy, the classification of LLS varies from researcher to researcher. There are many LLS which have been studied and classified in various ways. The major contributors to the classification research are Naiman et al. (1978), Rubin (1981), O'Malley et al. (1985), and Oxford (1990). Table 1 provides clear classifications of LLS by these scholars.

Table 1: Language learning strategy classifications

Language Learning Strategy Classification	Researcher(s) and Year
<ol style="list-style-type: none"> <li>1. Active task approach</li> <li>2. Realization of language as a system</li> <li>3. Realization of language as a means of communication and interaction</li> <li>4. Management of affective demands</li> <li>5. Monitoring L2 performance</li> </ol>	Naiman et al. (1978)
<ol style="list-style-type: none"> <li>1. Strategies that directly affect learning <ul style="list-style-type: none"> <li>● Clarification/verification</li> <li>● Monitoring</li> <li>● Memorization</li> <li>● Guessing/inductive inferencing</li> <li>● Deductive reasoning</li> <li>● Practice</li> </ul> </li> <li>2. Processes that contribute indirectly to learning <ul style="list-style-type: none"> <li>● Create opportunities for practice</li> </ul> </li> </ol>	Rubin (1981)

● Production tricks	
1. Cognitive strategies 2. Metacognitive strategies 3. Social-affective strategies	O'Malley et al. (1985)
Direct strategies: 1. Memory strategies 2. Cognitive strategies 3. Compensation strategies  Indirect strategies: 1. Metacognitive strategies 2. Affective strategies 3. Social strategies	Oxford (1990)

Naiman et al. (1978) studied adult learners' learning strategies and categorized their strategies. Naiman and his colleagues (1978) conducted classroom research by observing, testing and interviewing middle school students of French. The scholars classified their observations into strategy types and identified five major strategies that contributed to language learning (see Table 1). They further identified what they referred to as specific techniques, such as repeating aloud after the teacher, having contact with native speakers, etc (p. 15).

Rubin (1981) makes the distinction between strategies contributing directly and those contributing indirectly to learning. According to Rubin (1987), learning strategies include cognitive strategies and metacognitive strategies that contribute directly to the development of the language system constructed by the learner. Cognitive learning strategies refer to the steps or operations used in learning or problem-solving that require direct analysis, transformation, or synthesis of learning materials. Metacognitive learning strategies are used to oversee, regulate or self-direct language learning. They involve various processes such as planning, prioritizing, setting goals, and self-management.

In early studies on LLS, some categories of strategies with the same outcome were identified under different categories by researchers. The decision about how to categorize was based on the type of participants under investigation, research setting, and the particular interest of the researcher (Ellis, 1994). Ellis analyzed some categories with the same features that were identified under different categories. For instance, in the first category, Naiman et al.'s (1978) "active task approach" corresponds with Rubin's (1981) "clarification or verification" strategy. The second research category, such as Naiman et al.'s (1978) "realization of language as system", and Rubin's (1981) "guess or inductive inferencing" fit into the same classification that refers to learners'



capacity to analyze certain languages. The third general research category involves learners' capacity to evaluate the learning process, which corresponds to Naiman et al.'s (1978) and Rubin's (1981) "monitoring" strategies.

In the 1990s, some researchers developed broad and comprehensive categories of learning strategies and made important contributions to this area. O'Malley and Chamot (1990) classified LLS into three categories adopting the information processing theory of cognitive psychology investigated by Anderson (1985). O'Malley and Chamot (1990) identify three major categories: metacognitive, cognitive, and social/affective strategies. It can be pointed out that "metacognitive is a term to express executive function, strategies which require planning for learning, thinking about the learning process as it is taking place, monitoring of one's production or comprehension, and evaluating learning after an activity is completed" (p.582). Metacognitive strategies are responsible for the regulation of cognition which provides a way for students to coordinate their own learning. With metacognitive strategies, students could be aware of specific strategies and how and when to use them. The main metacognitive strategies include advance organizers, directed attention, selective attention, self-management, functional planning, self-monitoring, delayed production, self-evaluation. Cognitive strategies are "more limited to



specific learning tasks and they involve more direct manipulation of the learning material itself. Repetition, resourcing, translation, grouping, note taking, deduction, recombination, imagery, auditory representation, key word, contextualization, elaboration, transfer, inferencing are among the most important cognitive strategies” (p.583). Social/affective strategies involve “interacting with others or using affective control to assist learning” (p.584). They are exemplified by “cooperative learning, asking questions for clarification, reducing anxiety by using mental techniques, and self-reinforcement, which provides personal motivation by arranging rewards for oneself” (p.584).

Oxford (1990) classified LLS based on the synthesis of previous work on good LLS in general (Naiman, Frohlich, & Stern, 1975; Rubin, 1975; Stern, 1975) and in relation to each of the four language skills (Hosenfeld, 1976). As in Rubin’s classification, Oxford created “the most comprehensive classification of learning strategies to date” (Ellis, 1994, p.539). In Oxford’s classification, language learning behaviors are grouped according to their purpose and usage. Oxford divided LLS into two main classes, direct and indirect. Direct strategies are specific ways that involve use of language, sub-divided into memory, cognitive and compensation strategies. Indirect strategies do not directly

involve using the language, but they support language learning (Ehrman & Oxford, 1990), and are further divided into metacognitive, affective and social strategies. Under these six sub-categories, there are 19 groups of strategies, and under these groups, there are 62 strategies in total (see Table 2). These strategies form the basis of the Strategy Inventory for Language Learning (SILL) (Oxford, 1990).

Table 2: Oxford's Language Learning Strategy Classification (1990, p.17)

Direct Strategies	Categories
<b>Memory Strategies</b> <i>help learners to store and retrieve information</i>	a. Creating mental linkages b. Applying images and sounds c. Reviewing well d. Employing action
<b>Cognitive Strategies</b> <i>allow learners to make sense of and produce new language</i>	a. Practicing b. Receiving and sending messages c. Analyzing and reasoning d. Creating structure for input and output
<b>Compensational Strategies</b> <i>enable learners to communicate despite lack of language knowledge</i>	a. Guessing intelligently b. Overcoming limitations in speaking and writing
Indirect Strategies	Categories
<b>Metacognitive Strategies</b> <i>allow learners to regulate their learning through planning, monitoring, and</i>	a. Centering your learning b. Arranging and planning c. Evaluating

<i>evaluating</i>	
Affective Strategies <i>enable learners to manage their emotions, attitudes, motivations, and values</i>	a. Lowering your anxiety b. Encouraging yourself c. Taking your emotional temperature
Social Strategies <i>help learners to interact with other people to improve language learning</i>	a. Asking questions b. Cooperating with others c. Empathizing with others

According to Oxford (1990), direct strategies include strategies that directly involve the “target language” and they “require mental processing of the language” (p.37). Indirect strategies “provide indirect support for language learning through focusing, planning, evaluating, seeking opportunities, controlling anxiety, increasing cooperation and empathy and other means” (Oxford, 1990, p.151).

Despite an overwhelming focus on cognitive and metacognitive strategies, Oxford (1990) advocated studying affective (e.g., lower a learner’s anxiety and encourage a learner) and social strategies (e.g., ask questions and cooperate with others) in L2 research. She claimed that L2 researchers should also consider affective factors such learners’ motivation, attitudes and emotions.

Although Oxford's system is known as the most comprehensive classification of LLS, there are some problems with her classification. As to the classification and list of LLS, first, as she admitted herself, understanding of language strategies was necessarily "in its infancy", which was only "a proposal to be tested" (1990, p.16). In other words, her classification of learning strategies is not perfect and needs further research. Second, there is some difficulty in distinguishing all sixty-two strategies from each other. As to the SILL, she prepared two kinds of SILL: one for English speakers learning a new language, the other for speakers of other languages learning English. However, she did not distinguish the EFL learners from ESL learners. She thought her SILL was appropriate for either EFL or ESL learners.

Different researchers have different ways of classifying LLS. Classification of LLS has achieved only mild consensus. These classifications combine the broader psycholinguistic categories of direct (memory/cognitive/compensation) and indirect (metacognitive/social/affective) ones found in Oxford (1990) and O'Malley and Chamot (1990). The reason researchers often overlap categories is that they frequently "utilize a *priori* conceptual constructs from cognitive and social psychology to classify strategies, rather than specifically relying on





emerging patterns of how learners deploy language learning strategies” (Nyikos & Fan, 2007, p.254-255).

### **2.1.3 Factors that influence language learning strategies**

There have been many studies that indicate that more successful learners use more strategies, and that they use them more often than less successful ones (Anderson, 1991; Griffiths, 2003; Green & Oxford, 1995; Hedge, 1993; O’Malley & Chamot, 1990; Oxford, 1990). LLS are related to second language proficiency (Chamot & Kupper, 1989; O’Malley & Chamot, 1990; Oxford, 1993). Learners who are more proficient use a wider variety of strategies than less proficient learners do. According to Oxford (1990), most successful learners tend to use learning strategies that are appropriate to the task, material, aims, needs, motivation, and stage of learning. Rubin and Thompson (1994) agreed that good language learners can take charge of their learning, organize their language information and take opportunities to practise using the language. Many empirical studies have shown that LLS are related to second language proficiency. Rossi-Le (1989) found that language proficiency level (measured by a standardized test) predicted strategy use in multiple regression analysis for 147 adult ESL students in the U.S. More proficient ESL students used

self-management strategies like planning and evaluating and formal practice significantly more often than less proficient ESL students. Choi and Joh (2001) investigated the use of learning strategies of Korean high school students learning English as a foreign language, and the relationship between the use of their learning strategies and English achievement. LLS were measured by the SILL and English proficiency was determined by the subjects' mid-term English test scores (high, intermediate, low). They found that there was a significant difference in overall strategy use according to English proficiency level. The high-proficiency group showed a greater use of LLS than the other groups, while the intermediate-proficiency group reported more frequent strategy use than the low-proficiency group. Lan and Oxford (2003) reported the profile of Taiwanese elementary school students' strategy use and showed a significant relationship between their frequency of strategy use and proficiency level, proficiency having a significant effect on overall strategy use. High-proficiency learners significantly exceeded both intermediate-proficiency learners and low-proficiency learners while intermediate-proficiency learners used strategies significantly more frequently than low proficiency learners.

Factors other than language proficiency can impact the strategy use of language learners; these include such factors as motivation (Oxford & Nyikos, 1989,



1993), gender (Oxford, 1993), cultural background (Oxford & Burry-stock, 1995), learning styles (Ehrman & Oxford, 1989) and learners' self-efficacy beliefs (Yang, 1999). Since LLS play a significant part in learning a second or foreign language, these findings have provided valuable insights into L2 reading. The review of the literature continues to present research on second language reading.

## **2.2 Second Language Reading**

Reading is the receptive skill in the written mode, a large amount of theoretical and experiential information having been studied, explored and presented by researchers from different angles. Understanding the nature of reading helps to build up a general, comprehensive and explorative picture of what it involves and then what affects reading is drawn logically.

### **2.2.1 Definitions of reading**

Research on reading was considered essential by early psychologists (Rumelhart, 2004). Huey (1908), one of the greatest scholars in the early twentieth century, viewed reading as a meaning-making process with

psychological, linguistic and social dimensions (Reed & Meyer, 2007). Since then, definitions of reading have changed over time in accordance with different theoretical standpoints (Cummins, Stewart, & Block, 2005; Harris & Hodges, 1995).

Reading was strongly impacted by behaviourism in the 1950s being considered as conditioned behaviour (Thorndike, 1922). Subsequently, the innatist theory influenced the concept and instruction of reading (Alexander & Fox, 2004). The innatist theory was based on cognitive psychology. According to Goodman (1967), reading is “a psycholinguistic game which requires interactions with thought and language” (p.127).

After the period of the holistic view of reading, constructivists emphasized sociocultural and constructive concepts, basing themselves very much on the much earlier work of Vygotsky which had only recently found its way into the West (Vygotsky, 1978, 1986). Scholars stressed reading for constructing meanings from reading materials (Carrell & Grabe, 2002; McShane, 2005; Ruddell & Unrau, 2004; Urquhart & Weir, 1998). For example, Ruddell and Unrau (2004) defined reading as “a meaning-construction process that enables us to create carefully reasoned as well as imaginary worlds filled with new

concepts, creatures, and characters” (p.1462). Carrell and Grabe (2002) used Urquhart and Weir’s (1998) definition of reading, which is “the process of receiving and interpreting information encoded in language form via the medium of print” (p.22). McShane (2005) held a similar view, holding that reading is “a complex system of deriving meaning from print” (p.3). Thus writers put their meanings into language and the readers reconvert the language into meanings.

Based on the above-mentioned definitions, there are different definitions of reading provided by different researchers. However, these definitions reveal the characteristics of reading from different perspectives. In this thesis, we shall take reading as an active process whereby readers combine information from a given text and their own background knowledge to make out the meaning of what is written.

### **2.2.2 Definitions of reading comprehension**

By understanding the meaning and key elements of reading, the concept of reading comprehension can be explored. Many scholars (Sweet & Snow, 2003, Harris & Hodges, 1995; Pardo, 2004) have given their definition of reading

comprehension. Reading comprehension is defined by Sweet and Snow (2003) as the process of simultaneously extracting and constructing meaning. Specifically, it is the ability to understand information in a text and interpret it appropriately (Grabe & Stoller, 2002). Harris and Hodges (1995) indicated that reading comprehension is intentional thinking during which meaning is constructed through interactions between text and reader. The process of comprehension is viewed as the interaction between the reader and the text. Similarly, Pardo (2004) defined reading comprehension as a process in which readers construct meaning by interacting with text through the combination of prior knowledge and previous experience, information in the text, and the stance the reader takes in relationship to the text. Nuttall (1982) proposed that comprehension is the result of the interaction of a person's conceptual ability (obtaining bits and pieces of information and promptly forming a concept in reading), background knowledge (general knowledge and professional knowledge) and treatment strategies (including linguistic knowledge of vocabulary, syntax, context, and reading skills).

In short, reading comprehension is the process of constructing meaning from text. The goal of reading is ultimately targeted at helping a reader comprehend texts. Reading comprehension is an active process and the reader must monitor

this construction process. Reading comprehension is not just understanding words, sentences, or even texts, but involves a complex integration of the reader's prior knowledge, language proficiency and experience.

### **2.2.3 Three models of reading**

Grabe and Stoller (2002) discuss metaphorical models of reading, which fall into three categories: bottom-up, top-down and interactive models. They hold a prominent position in research into reading comprehension and will be discussed in this section.

#### **2.2.3.1 The bottom-up model**

The essential features of the bottom-up approach are that the reader tries to decode each individual letter encountered by matching it to the minimal units of meaning in the sound system to access the meaning of the text. Readers start reading by recognizing the letters, identifying the words, and they gradually progress towards larger linguistic chunks and then to sentences, eventually accessing the meaning. The whole reading process is basically word-based and readers construct the meaning of a reading passage by decoding each word.

Since this model emphasizes individual words in isolation, rapid word recognition is vital to the bottom-up approach (van Duzer, 1999). This reading model believes that students who master this process quickly become proficient readers. However, students who are not successful at decoding become struggling readers whose proficiency is interrupted by their inability to decode. Pressley (2000) claimed skilled decoders are able to recognize frequent letter chunks, prefixes, suffixes and foreign root words rapidly and such ability can free more memory capacity in the brain for reading comprehension. In contrast, less skilled readers put more effort into decoding words which leaves less processing capacity in the brain for reading comprehension. This notion has also been confirmed by Breznitz (1997; cited in Pressley, 2000) who concluded that fast decoding improves reading comprehension. Using the bottom-up model helps to form a detailed understanding of that one small area.

However, this model has been criticized on the grounds that, “bottom-up models suggest that all reading follows a mechanical pattern in which the reader creates a piece-by-piece mental translation of the information in the text, with little interference from the reader’s own background knowledge” (Grabe & Stoller, 2002, p.32). In addition, this word-by-word decoding process causes slow and laborious reading because short-term memory is overloaded, and





readers forget easily what they have read when their reading comes to an end (Adams, 1990). As a result, readers may only remember isolated facts without integrating them into a cohesive understanding. Without cohesive understanding, readers won't evoke critical thinking. Without critical thinking, readers will lack the motivation to read. Therefore, the criticism of this model has been that it does not seem to consider the contribution of a reader's active role and background knowledge to reading comprehension. In other words, the linear nature (letters → words → sentences) of this reading model limits the scope of the reading process. Recognition of the limitations within the bottom-up model in explaining the reading process led to the emergence of the top-down reading model.

#### **2.2.3.2 The top-down model**

Unlike the bottom-up model, the top-down model is a “concept” driven model where the readers' background knowledge and expectations guide them to construct meaning from a reading text. As Eskey (2005) proposes, the top-down model emphasizes that the whole reading process is basically “from brain to text” (2005, p.564). That is to say, a reader starts with certain expectations about the reading text derived from his or her background knowledge and then

uses the vocabulary knowledge they possess in decoding words to confirm and modify previous expectations (Aebersold & Field, 1997). In other words, a reading text itself has no meaning in the top-down reading model. It is the reader who constructs the meaning of the text by fitting it into his or her prior knowledge. According to Goodman (1967), who developed the top-down model, reading is a “psycholinguistic guessing game” and readers use their background knowledge to guess meaning. Smith (2003), who is also in favour of the top-down model, claims that a reader plays a very active role in the process of translating print into meaning by using knowledge of a relevant language, knowledge of the subject matter, and knowledge of how to read to confirm or reject his or her hypotheses. The process of the top-down model is also called “sampling of the text” (Cohen, 1990). Describing the sampling process, Cohen (1990) maintains that a reader does not read all of the words and sentences in the text, but rather chooses certain words and phrases to comprehend the meaning of the text. Therefore, the top-down model focuses on reading skills like making predictions and drawing inferences as well as guessing from context. The top-down model influences both L1 and L2 reading instruction in promoting the importance of prediction, guessing from context and getting the gist of a text’s meaning.



Nevertheless, the top-down reading model has been criticized for its over-reliance on a reader's prior linguistic and conceptual knowledge and neglecting the importance of the text (Eskey, 1973; Pearson, 1979). Moreover, the top-down model overlooks the possible difficulties that a reader may have or encounter with guessing or predicting the topic of a text if the material is unfamiliar to them (Samuels & Kamil, 1988). This is particularly true for second or foreign language learners. Up to this point, both the bottom-up and the top-down theories have been considered inadequate in terms of describing a sound reading process. For the bottom-up theory, it was criticized for its failure to consider the reader's role in the reading process, while the top-down theory relies too much on the reader's prior linguistic and conceptual knowledge and neglects the importance of the text (Eskey, 1973, 1986; Pearson, 1979). Thus, the inadequacy of both the bottom-up and top-down models in explaining the reading process has led to the emergence of the interactive reading model.

#### **2.2.3.3 The interactive model**

The interactive model combines features of both the bottom-up and top-down models and stresses the interrelationship between a reader and the text. It is now commonly accepted as the most conclusive picture of the reading process for



both L1 and L2 readers (Anderson, 1999). Introduced by Rumelhart (1977), the interactive model suggests that there is an interaction between the bottom-up and top-down processes and this model advocates that neither bottom-up nor top-down models can by themselves describe the whole reading process. Grabe (1991) further describes the interactive theory of reading as one that “takes into account the critical contributions of both lower-level processing skill (word identification) and higher-level comprehension and reasoning skills (text interpretation)” (p.383). Therefore, reading comprehension is the result of meaning construction between the reader and the text, rather than simple transmission of the graphic information to the readers’ mind (Eskey, 2005). This model suggests that a skilled reader simultaneously synthesizes the information available to him or her from several knowledge sources, either bottom-up or top-down or both, during the reading process. In addition, Stanovich (1980) brought the view of “compensation” into the interactive model by proposing that bottom-up and top-down processes compensate for each other in the reading process. In other words, when a reader lacks the appropriate content schemata for a certain text, he or she will rely on the bottom-up processes to compensate for the necessary background knowledge. The opposite could be true when a reader lacks the bottom-up skills necessary to comprehend a text, he or she will resort to high level processes. This



phenomenon explains why poor readers tend to resort to high level processes more often than skilled readers given that the use of top-down processes seems to compensate for the poor readers' limited ability in respect of bottom-up processes (Stanovich, 1980).

The interactive model of reading was a major influence in the development of L2 interactive reading models. Most of the L2 interactive reading approaches that have been proposed (Swaffar, Areans, & Byrnes, 1991) try to account for both bottom-up and top-down processes in an integrative approach. They all acknowledge the role of the text, the role of the reader, and the interaction of the two. The interactive model is considered the most appropriate for L2 readers who may have to draw on contextual knowledge to compensate for a lack of sufficient vocabulary knowledge.

To sum up, the bottom-up model indicates that the reading process is guided by each word in the text and a reader decodes each word to obtain meaning. In contrast to the bottom-up model, the top-down model specifies that the reading process is guided mostly by a reader's past experience and prior knowledge. The interactive model points out that the reading process is guided by an interaction between the text information and the reader's previous knowledge as



well as interaction between various reading strategies (Brunning, Schraw, & Ronning, 1999).

#### **2.2.4 The difference between L1 and L2 reading**

Research indicates a number of key differences between first language (L1) and second language (L2) reading (Grabe, 2002; Grabe & Stoller, 2002). Experiences in learning English as a second language (ESL) for non-native English speakers have also been studied and reported (Devine, 1993; Koda, 2007). There are two main differences between first language (L1) reading and second language (L2) reading. First, while L1 reading involves one language, L2 reading is engaged in two languages for cognitive processing (Carrell & Grabe, 2002; Koda, 2004). Particularly, because these languages are inherently diverse, there are some linguistic differences (e.g., lexical, grammar, and discourse) between the two languages that impact reading in the second language (Grabe & Stoller, 2002). Second, social and cultural contexts are different between L1 reading and L2 reading (Carrell & Grabe, 2002; Grabe & Stoller, 2002). Koda (2004) found that using background knowledge while reading in L2 has advantages for L2 learners. Socio-cultural distance may intrude upon L2 learners' reading comprehension.



### **2.2.4.1 Linguistic differences between Chinese and English**

Linguistic differences across any two languages are likely to vary greatly, and these differences can impact L2 reading comprehension. Multiple studies have revealed that “Chinese and Japanese readers make greater use of visual processing than do readers of English because of their L1 orthography” (Grabe & Stoller, 2002, p.47). These differences may influence L2 readers’ reading rate and fluency in word processing. Learning to read English is complicated for Chinese EFL students because English belongs to a different language family than Mandarin Chinese. For example, the Mandarin grammar and writing system is extremely different from alphabetic systems. The basic units of the Chinese are ideographic characters and the correspondences are character-to-syllable, not letter-to-sound as in English. In English, individual letters are usually without meaning; instead, a string of letters represents a morpheme. In Chinese, an individual character represents one morpheme. Another possible difference between English and Chinese is how information is organized in text. Kaplan (1966) observed that Chinese discourse development is rather indirect while English discourse is direct and much more linear. Brown (2001) also stressed different patterns of written discourse; “English discourse



was schematically described as proceeding in a straight line, while ‘Oriental’ written discourse is in a spiraling line” (2001, p.337). Yang (2001) itemized such linguistic differences between Chinese and English (2001, p.7-10).

## 1. Word Inflexion

Inflexion indicates tense, plural nouns, and parts of speech. However, Chinese does not have word inflexion. Many Chinese EFL learners are more likely to omit -ed for the past tense and -s for plural nouns or third person singular verbs. They often overlook the change of word ending when the word function changes. For example,

- a. (Chinese) All these clear shows that Disney deliberately tried to avoid culture resistant from France.

(English) All these clearly show that Disney deliberately tried to avoid cultural resistance from France.

- b. (Chinese) The plan analyzed the whole industry and possible competitors before get into its own business.

(English) The plan analyzed the whole industry and possible competitors before getting into its own business.

## 2. Modifier



In Chinese, modifiers always precede the noun; however, in English modifiers can follow the noun: for example, attributive clauses which can modify the noun. Consequently, Chinese EFL learners often have trouble developing an attributive clause. For instance:

a. (Chinese) These are all good strategies should be used.

(English) These are all good strategies which should be used.

b. (Chinese) There are some people want to live in the countryside.

(English) There are some people who want to live in the countryside.

### 3. Verb

In English, there is a general rule: there is only one main verb (the finite verb) in a sentence. The other verbs can be linked by some conjunction or can be in non-finite forms such as infinitives, participles, gerunds, abstract nouns, attributive clauses, etc. (Lu, 1985).

### 4. Comma

English punctuation presents a common problem for Chinese EFL learners. In English, complete sentences are separated by full stops or by semi-colons, while ideas are often connected by conjunctions. In contrast, commas in

Chinese can be used to combine two or more complete sentences without using a conjunction. Some comma errors appear in the following sentences:

a. (Chinese) They hated Ali, they wanted to beat him even kill him, but always, landlords were foolish, their ideas never came true.

(English) They hated Ali. They wanted to beat him, even kill him, but always the landlords were foolish. Their ideas never came true.

b. (Chinese) Some people regard setting off firecrackers as a bad thing, more money was spent, the environment was polluted, noise was made, bodies were hurt and so on.

(English) Some people regard setting off firecrackers as a bad thing. More money was spent, the environment was polluted, noise was made, and bodies were hurt and so on.

Since these linguistic differences between Chinese and English exist, many EFL Chinese learners can encounter additional problems while reading English texts. Some researchers have suggested that understanding more about students' L1 literacy skills and orthography may help clarify their difficulties in the reading process, such as word recognition, comprehension and fluency (Grabe & Stoller, 2002).

#### **2.2.4.2 Socio-cultural differences between Chinese and English**

According to Grabe and Stoller (2002), a reader's socio-cultural background may differ in L1 and L2. In some developing countries and regions, the literacy environment is not rich enough and children may not have the opportunities to engage in extensive reading. In addition, the cultural context surrounding literacy can be viewed differently in different countries. Nonnative speakers not only read in a different language and context, but also in a different cultural context.

Many researchers agree that a reader's background knowledge plays a dominant role in L2 reading (Barnett, 1989; Carrell & Eisterhold, 1983; Johnson, 1982).

A reader's background knowledge can be described as content schema/cultural orientation which provides the reader with a foundation or basis for comparison between L1 and L2 (Carrell & Eiserhold, 1983; Carrell, Pharis, & Liberto, 1989). For example, Carrell (1987) studied 28 Muslim Arabs and 24 Catholic Hispanics who were all ESL students. He found that the ESL students' background knowledge affected their comprehension and recall; subjects better comprehended and remembered passages that related to their native culture. More interestingly, Carrell mentioned that subjects remembered the most when



both content and rhetorical form were familiar to them; however, when only form or content was familiar, subjects had more difficulty with unfamiliar content than with unfamiliar form. Other studies supported the conclusion that participants better comprehend and retain information when they are familiar with the content (Ammon, 1987; Carrell, 1981; Johnson, 1981, 1982; Shimoda, 1989). Steffensen and Joag-Dev (1984) used accounts of different cultural weddings as their participants' English reading material. One selection described wedding events similar to those in their native culture; the other account of a wedding was significantly different from their culture. Participants were more likely to comprehend text about their own culture more accurately than text about the unfamiliar culture. Moreover, the words in the familiar content were easier for the participants to remember. Johnson (1982) compared ESL students' recall of a reading containing both familiar and unfamiliar information on the topic of Halloween, after the subjects experienced this holiday. Prior cultural experience facilitated participants' comprehension of familiar information about Halloween. However, participants did not better comprehend the unfamiliar information about the topic of Halloween. Kang (1992) examined how Korean EFL readers activate their culturally specific background knowledge to comprehend text in English. Kang agreed that



readers' background knowledge is crucial to reading comprehension for Korean EFL students.

Overall, readers have a higher level of comprehension when the content is familiar to them. The more L2 readers activate appropriate background and cultural knowledge, the better comprehension L2 readers have in their L2 reading.

### **2.3 Factors that Influence L2 Reading**

Reading is a complex process in which many elements are involved. Since the 1970s, how students learn a second language has attracted great attention. “In the second language learning, reading serves as the primary source of new information about all sorts of topics” (Li, 2010, p.184). Unlike L1 reading, L2 reading involves two languages. L2 readers have access to their L1 as they read, and often use it as a strategy to help comprehend L2 texts (Upton & Lee-Thompson, 2001). L2 reading is therefore “crosslinguistic”, thus “inherently more complex than L1 reading” (Koda, 2007, p.1). This section reviews some important factors influencing L2 reading and reading comprehension from individual and social factors.

### **2.3.1 Individual factors that influence L2 reading**

#### **2.3.1.1 L2 reading proficiency**

Some studies reveal that reading proficiency is related to awareness of reading strategies and the reading process (Bernhardt, 1986; Knutson, 1993). Proficient readers can monitor their reading and explicitly comment on the strategies they use. They monitor their reading process, plan strategies for reading, adjust them appropriately, and evaluate the outcome of their reading. On the other hand, unsuccessful readers sometimes use reading strategies, but not in as consistent a way as do successful readers (Wenden, 1995).

A number of researchers have compared the performance of successful and unsuccessful readers (Almasi, 2003; Block, 1986, 1992; Carrell et al., 1998; Garner, 1980; Hosenfeld, 1977; Hsu, 2003; Mokhtari & Reichard, 2002). Research in reading strategies has demonstrated that use of strategies differs between successful and unsuccessful readers, and that good readers not only use different types of strategies, but that they use them in different ways. Hosenfeld (1984) used thinking aloud, in an attempt to identify the differences between



EFL successful and unsuccessful readers. From the study, she found that successful readers tended to: 1) keep the meaning of the passage in mind during reading; 2) read in “broad phrases”; 3) skip inessential words; 4) guess the meaning of unknown words from context; and 5) have a positive self-concept as a reader. By contrast, the unsuccessful readers tended to: 1) lose the meaning of sentences as soon as they were decoded; 2) read word by word or in short phrases; 3) rarely skip words; 4) turn to the glossary for the meaning of new words; and 5) have a negative self-concept as a reader (Hosenfeld, 1984).

Block (1986) used thinking aloud to study generally non-proficient readers, who were native and nonnative English speakers enrolled in the first year remedial reading course in a university of America. She found that four characteristics seem to differentiate the more successful from the less successful of these non-proficient readers: 1) integration; 2) recognition of aspects of text structure; 3) use of general knowledge, personal experiences, and associations; and 4) response in extensive versus reflexive modes.

Ten years later, Jiménez, Garcia, and Pearson (1996) examined the reading strategies of bilingual Latino students who were successful English readers.

They also included three monolingual Anglo students and three less successful

bilingual Latino students in their study. They found that the successful readers used three unique strategies: (a) they actively transferred information across languages; (b) they translated from one language to another, but most often from Spanish to English; and (c) they openly accessed cognate vocabulary when they read. In addition, the successful readers were able to draw upon an array of strategic processes to determine the meanings of the unknown words they encountered. In contrast, the less successful readers used fewer strategies, were often less effective in resolving comprehension difficulties and in getting the meanings of unknown words.

Generally speaking, research has summarized the main characteristics of successful and unsuccessful readers (Almasi, 2003; Block, 1986; 1992; Carrell et al., 1998; Mokhtari & Reichard, 2002) as shown in Table 3.

Table 3: Characteristics of Successful and Unsuccessful Readers

Successful Readers	Unsuccessful Readers
<b>Decoding Skills</b> 1. rapid decoding skills 2. phonemic awareness	1. focus on decoding each word
<b>Cognitive Strategies</b> 3. processing of an extensive knowledge base	2. less processing of an extensive knowledge base



4. use of various reading strategies to achieve the goal	3. have no idea about employing strategies to comprehend and remember texts
<p>Metacognitive Strategies</p> <p>5. detect contradiction or resolve inconsistencies in understanding text</p> <p>6. make inferences that enhance comprehension and use fix-up strategies</p> <p>7. knowing what they are reading, why they are reading and having strategies for handling potential problems and for monitoring their comprehension</p> <p>8. analyze the reading task</p> <p>9. use background knowledge or personal experience to comprehend the text</p>	<p>4. do not realize that they do not understand</p> <p>5. less aware of detecting contradictions or resolving inconsistencies in comprehending text</p> <p>6. little monitoring of their memory, comprehension and other cognitive tasks</p> <p>7. unable to adjust the reading speed according to different purposes and reading tasks</p>
<p>Others</p> <p>10. attention span for reading material is longer</p> <p>11. being motivated to use strategies</p> <p>12. response in extensive mode; focus on their information from the text</p>	<p>8. attention span for reading material is shorter</p> <p>9. focus on reading as decoding process</p> <p>10. response in reflexive mode; focus on their own thoughts and feelings</p>

Apparently, successful readers and unsuccessful readers use different strategies.

Unsuccessful readers tend to apply less effective strategies during reading. The study also revealed that unsuccessful readers seemed to know the use of appropriate kinds of strategies, but might not know how to determine if they employed the strategies successfully. More significantly, as Anderson (1999) stated: “Strategic reading is not only a matter of knowing what strategy to use, but also the reader must know how to use a strategy successfully and orchestrate its use with other strategies” (p.468-469).

Research on reading has extended to the reading strategies of EFL learners. Chen (1999) investigated the differences in reading strategies between high achievers and low achievers at a college in Taiwan. High achievers used more variety in their reading strategies than the low achievers. Chinese scholars have also made attempts to find out the differences of reading strategy use among Chinese EFL learners, especially the college English learners. Liu (2002) experimented on four successful EFL readers and four unsuccessful ones, all of whom were junior English majors at college, via questionnaire, reading test, individual interview and think-aloud report. The results showed that successful and unsuccessful readers differed greatly not only in quantity and frequency of strategy use, but also in quality. The study showed that successful readers used reading strategies more effectively and flexibly than unsuccessful ones. This

conclusion confirmed the findings by Harris (1997), Knutson (1993) and O'Malley and Chamot (1990).

The above researchers revealed that good readers are strategic readers who are able to engage global, top-down reading strategies. Weak readers tend to rely more heavily on local, bottom-up reading strategies and often seem to be unaware of how and when to best use strategies when they read. However, many studies were unable to make direct correlations between the types of strategies and successful reading outcomes. For example, research by Anderson (1991) shows that there are no simple correlations or one-to-one relationships between particular strategies and successful or unsuccessful reading comprehension. His research with native Spanish-speaking, university level, intensive ESL students reading in English and self-reporting their strategy use, suggests wide individual variation in successful or unsuccessful use of the exact same reading strategies. Rather than a single set of reading strategies that significantly separates good readers from weak readers, the same kinds of strategies were used across ability levels and across tasks. The key differences between the weaker and stronger readers do not depend completely on different types of reading strategies or on the number of different reading strategies used, but on total numbers of successful strategy uses.



Kern (1997) reported a case study of two American university students reading in French as an L2, one a 'good' reader of French, and the other less good. Kern remarked that no strategy is inherently a 'good' or 'bad' strategy; what works for one reader does not necessarily work for another. For example, using prior knowledge may sometimes be an effective strategy for one reader in one reading situation, but not for another reader or in another reading situation. Kern showed that the same is true of translation as a strategy.

In an EFL context, Yamato (2000) closely examined the relationship between proficiency level and strategy awareness of Japanese high school students. Yamato found that reading strategy use may be very complicated because not all top-down strategies are positively related to proficiency levels and some bottom-up strategies may enhance reading comprehension.

Overall these early studies reveal that the relationship between strategies and comprehension is not simple and straightforward; the use of certain reading strategies does not always lead to successful reading comprehension, while the use of other strategies does not always result in unsuccessful reading comprehension. L2 readers not only know what the strategies are, but also are

aware of how and when to employ reading strategies effectively and successfully while they read.

### **2.3.1.2 L1 reading**

L2 reading is “an ability that combines L2 and L1 reading resources into a dual-language processing system” (Grabe, 2009, p.129). Some researchers explain that reading in a second or foreign language depends on learners’ first language (L1) proficiency (Cummins, 1979, 1991). The point is that readers’ development of the second or foreign language can be determined by the reading ability in the native language rather than the second or foreign language. Once one acquires literacy skills in the first language, some foundations can also be used when learning the L2 (Bernhardt & Kamil, 1995). This position is called the Linguistic Interdependence Hypothesis proposed by Cummins (1979). It suggests that once a child develops reading skills in their L1, he or she is then able to transfer those skills directly to L2. The hypothesis is that fundamental similarities exist between first and second language skills, and that they are interdependent. Specifically, reading performance in a second language is largely shared with reading ability in a first language (Bernhardt & Kamil, 1995). According to this hypothesis, transfer happens automatically.

An alternative hypothesis was developed by Clarke (1979); originally known as the “short-circuit” hypothesis and “Linguistic Ceiling” (Clarke, 1979, 1980), it is more commonly referred to as the Linguistic Threshold Hypothesis (Alderson, 1984). Alderson (1984) stated that “good first-language readers will read well in the foreign language once they have passed a threshold of foreign language ability” (p. 4). Bernhardt and Kamil (1995) argued that students must have an adequate amount of L2 knowledge (such as vocabulary, grammar and discourse) to use skills and strategies that are part of their L1 reading comprehension abilities. According to the main assumption of the Linguistic Threshold Hypothesis, readers will need to develop a certain level of language proficiency in the target language before they can transfer L1 reading skills or strategies to improve L2 reading comprehension. Before this threshold level of language proficiency or linguistic ceiling is reached, whether or not they read well in their L1 does not make much difference in their L2 reading performance (Lee & Schallert, 1997). The role of L2 language proficiency in L2 reading development has been emphasized through the alternative hypothesis regarding the relationship between L1 reading and L2 reading. The argument regarding the two hypotheses has not been whether there is transfer or not, but rather when transfer occurs (Bernhardt, 2005; Grabe, 2009).



Various cross-linguistic studies show support for the Linguistic Interdependence Hypothesis or Linguistic Threshold Hypothesis to varying degrees. Empirical research has provided some support for the Linguistic Interdependence Hypothesis. For example, Verhoeven (1991) examined the processes of biliteracy development of 138 First-Grade Turkish children in the Netherlands. One group of children was involved in an L2 immersion curriculum, which provided L2 literacy instruction before L1 literacy instruction. The other group of children followed the L1/L2 transitional curriculum, where literacy skills were first taught in L1. Verhoeven (1991) stated that “literacy skills being developed in one language strongly predict corresponding skills in another language acquired later in time” (p.72). Sarig (1987) also showed that a strong correlation exists between L1 and L2 reading processes, which supports the Linguistic Interdependence Hypothesis. From a review of the empirical evidence, Krashen (2002) concludes that reading ability in L1 has a strong impact on L2 literacy development in the early stages.

Several studies have provided evidence for the Linguistic Threshold Hypothesis. Lee and Schallert (1997), in their study with 809 ninth- and tenth-grade Korean EFL students, found that L1 reading ability and L2 proficiency accounted for



62% of the variability in L2 reading, with L2 proficiency contributing more than L1 reading ability. In the study with 158 Japanese ESL students at low-intermediate to intermediate proficiency levels, Perkins, Brutton and Pohlmann (1989) found that the higher the learners' L2 ability, the stronger the relationship between L1 and L2 reading, which provides support for the argument that there is some general threshold at which L2 readers begin to transfer L1 reading skills and strategies. Yamashita (2002a) compared reading strategies in L1 and L2 among readers with differing reading abilities in L1 and L2. Results suggest that readers tend to transfer their L1 reading strategies to their L2 reading. In another study, Yamashita (2002b) demonstrated that mutual compensation exists between L1 reading ability and L2 proficiency. This mechanism works in order to achieve the highest possible level of L2 reading comprehension for readers with differing ability levels of L1 reading and L2 proficiency. Studies by Yamashita (2002a, 2002b) suggest that the Linguistic Threshold Hypothesis and the Linguistic Interdependence Hypothesis actually combine.

Concerning Chinese and English reading strategy use, in a study conducted by Kong (2006) the reading strategies used by Chinese adult readers to comprehend Chinese (L1) and English (L2) were compared and then analyzed.



Kong's findings reveal that the subjects used more strategies in reading the English texts than in reading the L1 text. Moreover, each subject demonstrated different degrees of transfer of strategy use across the readings on L1 and L2, namely, readers with higher L2 proficiency transferred the higher level cognitive and metacognitive knowledge across the reading of L1 and L2, compared to readers with lower L2 proficiency. Kong attributes this to the Linguistic Threshold Hypothesis. Lin (2001) surveyed Chinese EFL students to assess the effect of linguistic, conceptual, and sociocultural knowledge on their EFL reading comprehension. Her findings supported the Linguistic Threshold Hypothesis and indicated that beginning L2 readers' linguistic knowledge is more important than their L1 reading knowledge. Similar to Lin's results, Bossers (1992) showed that both L1 reading ability and L2 proficiency are related to L2 reading ability. For students at lower levels of linguistic proficiency, their L2 ability is more crucial than their L1 reading ability, especially in vocabulary knowledge. As Alderson (2000) suggested, a "linguistic threshold exists which must be crossed before first language reading ability can transfer to second language context" (p.39). Tsai, Ernst and Talley (2010) conducted quantitative research involving 222 EFL undergraduates in Taiwan to reveal the relationship between L1 (Chinese) and L2 (English) strategy use in L2 reading comprehension by focusing on the correlation of L1



reading ability. The finding demonstrates that L2 language proficiency contributes more to L2 reading comprehension than L1 reading comprehension. This finding also supports the Linguistic Threshold Hypothesis.

Overall, the empirical studies reviewed above support the existence of a language proficiency threshold. They have generated fairly consistent results: both L1 reading ability and L2 language proficiency contribute significantly to L2 reading ability, but L2 proficiency tends to be a stronger predictor of L2 reading than L1 reading ability, especially for learners who are not yet advanced (Bernhardt & Kamil, 1995; Bossers, 1991; Brisbois, 1995; Carrell, 1991; Lee & Schallert, 1997; Taillefer, 1996). Specifically, the learners' L2 language knowledge facilitates their L2 reading comprehension, and L2 proficiency tends to play a greater role than does L1 reading ability. Once the readers become more advanced in their L2 proficiency, it is more likely to lead to successful transfer of L1 reading skills to L2 reading, and to a stronger linkage between L1 and L2 reading.

### **2.3.1.3 L2 vocabulary**



Vocabulary is another factor that contributes to successful second language reading (Fitzgerald, 1995; Koda, 2007). Vocabulary learning is widely regarded as a crucial task for second language learners in their attempts to improve their linguistic competence (Fan, 2003; Gu, 2003, 2005; Ma, 2009). In terms of L2 research, there are various studies that have been conducted to search for the relation between reading comprehension and vocabulary. Fluent readers recognize and understand many words, and they read more quickly and easily than those with smaller vocabularies (Allington, 2006; Bromley, 2007). According to Stahl and Fairbanks (1986), students with large vocabularies understand the text better and score higher on achievement tests than students with small vocabularies. Similarly, Zhang and Anual (2008) found significant correlation between learners' vocabulary level and reading comprehension. Grabe (1991) indicated that "virtually all second language reading researchers agree that vocabulary development is a critical component of reading comprehension" (p.392). Besides this, Birch (2002) suggested that vocabulary knowledge was a significant factor for L2 readers, especially for beginning readers. Verhoeven (2000) investigated the early reading and spelling processes of children learning to read in an L1 and L2 during the first two grades at primary school. Vocabulary knowledge was found to have a greater impact on the reading comprehension of the L2 learners than on that of the L1 learners.



Droop and Verhoeven (2003) showed that for L2 learners, L2 language skills were highly related to L2 reading ability. The findings indicate that vocabulary knowledge is an important factor with regard to their L2 language proficiency. Laufer and Yano (2001) state that, in academic settings, L2 learners are expected to cope with a vast amount of reading materials meant for native speakers, and studies conducted across high schools and universities indicate that their vocabulary knowledge “does not amount to a quarter of the vocabulary known by their native speaking peers” (p.549). L2 learners are bound to meet many unfamiliar words in the course of their studies. This problem applies equally to ESL secondary school students who must cope with the reading materials in content areas, such as history, social studies and geography, and pass in the reading comprehension examination. Inadequate English lexical knowledge adversely influences non-native English speaking readers’ reading proficiency (August, Carlo, Dressler & Snow, 2005; Levine & Reves, 1990).

Carrell and Grabe (2002) argue that ESL readers need to have vocabulary of sufficient size so that they can develop vocabulary knowledge by inferring from context and by referring to dictionaries, and that the learners benefit from effective instruction on different vocabulary strategies. Qian (1999) explored



the relationships between depth and breadth of vocabulary knowledge and reading comprehension in English as a second language (ESL). A total of 80 volunteers were recruited for this study, including Chinese and Korean ESL learners. The test required that only learners with a threshold vocabulary of the 3,000 word family level or better could be included in this sample. Research instruments included paper-and-pencil testing and a questionnaire. In the study, the breadth of vocabulary knowledge was defined as the number of words for which a reader had at least some minimum knowledge of their meaning. The definition of depth of vocabulary knowledge was how well the reader knew a specific word. According to the multivariate analysis, the main results showed that 1) test scores on vocabulary size, depth of vocabulary knowledge, and reading comprehension were highly and positively correlated; and 2) test scores on depth of vocabulary knowledge could make a significant contribution to the prediction of reading comprehension levels. This study also reported that if ESL readers had a minimum vocabulary size of 3,000 word families, their breadth and depth of vocabulary knowledge were correlated, and their depth of vocabulary knowledge was a significant factor in the relationship between vocabulary knowledge and academic reading comprehension (Qian, 1999). Regarding the strength of this study, we gain solid evidence of the roles of depth and breadth of vocabulary knowledge in L2 reading comprehension, in



particular with Asian participants. Qian (2002) further conducted a study on the relationship between vocabulary knowledge and reading comprehension with 217 ESL students. He found that vocabulary depth and size were significantly related to the participants' English reading performance.

There is one further problem that we must not ignore, namely, unknown vocabulary. Roskams (1998) examined Chinese students' inference strategies for unknown words while reading. The 17 participants were first year university students in Hong Kong who had a good command of English. Readers were asked to read the target text and think aloud in the L1 or L2 when they came to each of the twelve items underlined. They shared their thinking process while they attempted to infer the meaning of the underlined words. Results showed that these Chinese readers most commonly used sentence level context clues while they inferred unknown vocabulary in a text. The main conclusions drawn from this study are as follows. First, Chinese readers used varied and flexible decoding strategies to infer English words, individual readers appearing to use a different number of sources to make a guess as to the meanings of unknown words. Second, the amount of relevant content knowledge affected text comprehension and inference ability (Roskams, 1998). In terms of the strength of this study, it provided powerful research findings about Chinese students'



inference strategies for unknown words while reading.

The above studies revealed a close relationship between vocabulary and reading comprehension. Within the context of second language research in reading, findings on the reading processes and vocabulary have consistently shown the significant contribution and the importance of vocabulary knowledge in reading comprehension performance (Barnett, 1986; Garcia, 1991; Koda, 1994, 2005; Laufer, 1997; Nation, 2001; Zhang, 2000, 2002).

#### **2.3.1.4 L2 learning motivation**

It is widely acknowledged that motivation is crucial to success in language learning (Dörnyei, 2003; Gardner, 1990). “Without sufficient motivation even the brightest learners are unlikely to persist long enough to attain any really useful language proficiency” (Cheng & Dörnyei, 2007, p. 153). This is because motivation not only affects “the choice of a particular action” but also “the persistence with it” and “the effort expended on it” (Dörnyei, 2005, p. 8). Learners’ motivation has been widely accepted as a key factor which influences the rate and success of second/foreign language learning (Ellis, 1994; McDonough, 1983).

A variety of motivation theories have been advanced by researchers. For instance, motivation can be theorized in a dichotomy of *integrative* and *instrumental* motivation (Gardner & Lambert, 1972). Integrative motivation is recognized as having positive attitudes towards a specific language group and a desire to integrate into that group. If a person is not at this level, then there is less interest in meeting and interacting with members of a specific language group. Instrumental motivation refers to the practical reasons one has for learning a language. This can include anything from learning a language with the intent to pass an examination or having better employment.

The relationship between language learning motivation and language proficiency has long attracted researchers' attention. Motivation determines how and why people learn and how they perform (Pintrich & Schunk, 1996). Gardner (1988) believed that, in most cases, there is a significant correlation between some variables of integrative motivation and some from second language proficiency. Those learners that are interactively motivated will probably be more successful in language learning than those that are not similarly motivated. Early studies have shown that integrative motivation is important for successfully learning a second language (Gardner & Lambert,



1972). A student's intention to study English can be associated with an integrative motivation (Clement, Gardner, & Smythe, 1977); however, integrative motivation may not be the strongest predictor for language learning (Gardner, 1988; Gardner & McIntyre, 1991).

Motivation can be used to explain some success in the learning process and, at times, some disappointment; that is, an unmotivated learner is less likely to benefit from the learning process. Motivation, as understood from educational research, can be comprised of both intrinsic and extrinsic motivations. Deci (1975) provided the following definition for intrinsic motivation: "intrinsically motivated behaviors are aimed at bringing about certain internally rewarding consequences, namely, feelings of competence and self-determination" (p.23). Those who draw on the desire to learn from intrinsic motivation seem to want to learn a foreign language because it is personally desired and not because the activities lead to extrinsic rewards, such as job promotion. Conversely, those who are extrinsically motivated, anticipate external rewards that are separate from the task at hand. Deci and Ryan's (1985) studies showed that motivation derived from oneself leads to more successful learning. Nevertheless, they also recognized that extrinsic motivation is a principal factor in acquiring a new language.



In the Chinese mainland context, motivation studies confirm that Chinese learners are not simply motivated instrumentally to learn English. For instance, after analyzing 202 questionnaires completed by Chinese undergraduate non-English majors, Liu (2007) identified three motivation types - integrative, instrumental and travel motivation and found that motivation was positively correlated with the students' English proficiency. Gao, Zhao, Cheng, and Zhou's study (2004) uncovered seven motivation types: intrinsic interest, immediate achievement, learning situation, going abroad, social responsibility, individual development and information medium, which were grouped into three categories—instrumental, cultural and situational motivation -- by the researchers. Other studies also reveal that learning English plays an important role in Chinese learners' identity construction (Gao, Cheng, Zhao, & Zhou, 2005; Gao, Zhao, Cheng, & Zhou, 2007). Gao et al. (2005) make it clear that Chinese learners are “particularly motivated by self-esteem needs”, which include “positive attitudes towards life, pursuit of social positions, and fulfillment of individual potentials” (p.50). Wen (1997) found that for learners of Chinese as a foreign language, intrinsic- and extrinsic-oriented motivations could lead to success.



Motivation and reading strategies are related in some ways. Guthrie and Alao (1997) demonstrated that high motivation is highly correlated with the amount of reading. In addition, Schiefele (1999) demonstrated that personal interest (long-term intrinsic interest) is a significant predictor of comprehension and learning. In an overview of engagement and motivation for reading, Guthrie (2001) proposed that: “Engaged reading is a merger of motivation and thoughtfulness. Engaged readers seek to understand; they enjoy learning and they believe in their reading abilities. They are mastery oriented, intrinsically motivated, and have self-efficacy” (p.1). Guthrie and Alao (1997) posited that less successful students lose their motivation to read because of unsuccessful reading experiences and lack of confidence in their reading ability. It seems that successful reading is most likely to occur when we want to read. However, the concept of motivation, to some extent, with other attributes — interest, curiosity, or a desire to achieve — can jointly affect the L2 reading. These attributes differ in different situations and circumstances and also are subject to external forces such as parents, teachers and examinations.

Motivation is a very important factor which determines the success or failure in second language learning because motivation can directly influence the frequency of using learning strategies, willpower of learning, goal setting, and



the achievement in learning (Li & Pan, 2009). Therefore, motivation would explain why students fail to or succeed in learning English and reading.

### **2.3.2 Social factors that influence L2 reading**

Aside from individual factors, reading development is also influenced by a few social factors, such as teachers, parents and family members.

#### **2.3.2.1 Teachers**

Teachers' influence on students' learning motivation is a well-researched topic (e.g., Green & Kelso, 2006; Kember, Ho, & Hong, 2010; Tran & Baldauf, 2007). According to Dörnyei (2001) and Ghanizadeh and Moafian (2010), teachers' personal characteristics may influence students' learning motivation. Essential qualities of the best teachers include flexibility and enthusiasm (Borg, 2006) as well as “charisma, compassion, egalitarianism, sense of humor, creativity, and honesty” (Zhang & Watkins, 2007, p.782), some of which overlap with Dörnyei's (1994) argument that teachers should be empathetic—“being sensitive to students' needs, feelings, and perspectives”; congruent—being “real and authentic without hiding behind facades or roles”; and accepting—“acknowledging each student as a complex human being with

both virtues and faults” (p. 282). Other studies concerned with general teaching indicate that teachers should be responsible (Green & Kelso, 2006), humorous, good-tempered, and optimistic (Gorham & Christophel, 1992). Developing a good relationship with students is one of the macrostrategies for motivating language learners (Dörnyei & Csizér, 1998).

The importance of teaching competence is also explicitly implied in the ten macrostrategies for motivating language learners identified by Dörnyei and Csizér (1998). For example, teachers should “create a pleasant, relaxed atmosphere in the classroom,” which may reduce anxiety and hence maintain or increase motivation to learn, and “present the tasks properly” in order to raise students’ interest and effect positive learning outcomes (p. 216). On the other hand, ineffective classroom management and disordered lectures may demotivate students (Gorham & Christophel, 1992) and inappropriate teaching methods can be a source of demotivation (Ushioda, 1998). Teachers’ incompetence is found to be “the greatest source of demotivation” (Zhang, 2007, p.209). Findings from Tran and Baldauf (2007) show that lack of teaching competence ranks high among the demotivating factors. Green and Kelso (2006) also pointed out that “instructors who are difficult to understand ..., who are disorganized, inexperienced ... are likely to interfere with students’ desire to

succeed in class” (p. 71).

In terms of teaching English as a foreign language, “the subject and the medium for teaching it are one and the same” (Borg, 2006, p.13). Subject matter expertise should therefore also cover proficiency in the target language, which is perceived to be a characteristic of effective language teachers (Brosh, 1996). Brosh (1996) also identified the desirable characteristics of the effective language teacher as perceived by foreign language teachers and students in Israel. The following five characteristics emerged overall as those felt to be most desirable by the participants in her study:

- knowledge and command of the target language;
- ability to organize, explain and clarify, as well as to arouse and sustain interest and motivation among students;
- fairness to students by showing neither favouritism nor prejudice;
- availability to students.

Teacher’s modelling is considered as an effective way of providing information, in which a teacher explains the mental reasoning involved in performing various reading tasks (Duffy, Roehler, & Herrmann, 1988). Teacher’s modelling can be employed in explicit reading strategy instruction, in which the

teacher employs explicit instructional talk to reveal his or her thinking processes when performing the reading task that the students will be asked to do later. It is the teacher's job to make the processes of using reading strategies apparent for students so that students can "consciously practice them and develop their ability to read more effectively" (Aebersold & Field, 1997, p. 97). The explicit reading strategy modelling is essential in order to enable students to manipulate the reading strategies at will and monitor their own reading. According to Baumann and Schmitt (1986), it involves three basic components of including "what", "how" and "when". Initially, students are taught what the reading strategy is and why it is important. The "how" of the instruction involves the direct instruction component where the teacher will "tell, show, model, or demonstrate how the reading strategy operates" (p. 640). Within this step, the responsibility of learning is shifted from the teacher to the students. And then, students are taught when the strategy should be used.

Some learners may still have problems about choosing the right books for themselves. Baker, Dreher and Guthrie (2000) argued that teachers can provide the learners with advice on what kinds of books to choose and let them make choices. It is helpful for the learners as it can help them start reading. Similarly, Day and Bamford (1998) emphasized that teachers need to give explicit,

systematic and persistent attention to helping novice readers and provide guidance in the selection of appropriate materials.

One interesting point to note is that when students perceive teachers to be interested in their reading progress and provide some control of learning, they would be more engaged in the classroom by participating in class discussions, learning actively or appearing happy (Guthrie & Wigfield, 2000). As a result, teacher involvement can cover both the role of being a reading advisor and that of a progress monitor. This involvement contributes to the fostering of a harmonious reading environment.

#### **2.3.2.2 Parents**

Parental involvement and home environment play a significant role in fostering children's overall educational success (Jeynes, 2005; Thorkildsen & Stein, 1998) and impacting children's motivation and attitudes towards learning (Hoover-Dempsey, Walker, Sandler, Whetsel, Green, Wilkins, & Closson, 2005). Parents in East Asian contexts, in particular Chinese parents, have been well-documented for their zealous involvement in their children's academic development (Sung & Padilla, 1998; Hung & Marjoribanks, 2005). Educational





research on family factors in students' academic development supports parental involvement as a sound educational strategy in enhancing students' academic achievement (Bakker, Denessen, & Brus-Laeven, 2007; Gonzalez-DeHass, Willems, & Holbein, 2005; Hoover-Dempsey, Walker, Jones, & Reed, 2002). In these studies, parents have been discovered to have collaborated with teachers, providing support to their children's academic activities at home as well as fostering positive attitudes towards education and self-efficacy beliefs among them (Gonzalez-DeHass et al., 2005).

Parents' behaviours and their choices of literacy practices with their children reflect their personal beliefs, values, and attitudes. For example, in the case of bilingual and second language learners, parental beliefs, values and, attitudes towards a particular language impact greatly their children's beliefs, values, and attitudes towards the learning of that language and indirectly influence the learning outcomes (Li, 1999).

In language learning research, parental involvement is commonly considered to contribute to learners' language learning and Asian parents, especially Chinese parents, are often closely involved in their children's second or foreign language learning (Sung & Padilla, 1998; Gao, 2006b). A large proportion of

Chinese parents provide immense support for their children's development as English language learners (Gao, 2006b). Gao (2006b) confirmed that many Chinese parents and other family members are closely involved in their children's language learning, in particular, their development as competent English learners. They are indirectly involved in their children's development "as English learners as language learning advocates, language learning facilitators, and language teachers' collaborators. Furthermore, they are directly involved in their children's development as language learning advisors, language learning coercers, and language learning nurturers" (p. 285).

In addition, family, or parents with their social networks, has emerged to be one of the most central social networks where the transmission of cultural capital takes place (Reay, 2000). The centrality of family in the circulation of valued cultural capital underlies the explosion of educational and sociological studies on parental involvement in children's educational attainment and achievements, including their L1 literacy development and learning of foreign languages (Bartram, 2006; Dika & Singh, 2002; Gregory, 1998; Senechal & LeFevre, 2002; Sung & Padilla, 1998). In terms of language learning, the resources in a given social network such as family may include discursive resources (i.e. motivational and belief discourses in language learning), social resources (i.e.

competent speakers of English) and material resources (i.e. English books and other artefacts that support the learning of English) (Palfreyman, 2006). It is crucial for language learners to access these resources in their pursuit of English competence in various contexts. Drawing on Bourdieu's (1986) theorization of social and cultural capital, Gao (2012) studied parental involvement of secondary school pupils in learning English vocabulary on the Chinese mainland and concluded that many Chinese parents "functioned as critical agents regulating and controlling their children's learning process and provided social opportunities for them to deepen/widen their engagements with English. These parents also mediated the pupils' motivational discourses, beliefs, knowledge and supported their learning with enormous material investment" (p.581).

## **2.4 Metacognitive Strategies in Reading**

This section starts with the philosophical and psychological sources of the *meta* concept, and elaborates on Flavell's conceptualization of metacognition and the components of metacognition. Then, developing metacognitive strategies in reading with the effect of metacognitive strategies on reading comprehension is portrayed. The measure of metacognition, including the two instruments –

SORS and MARSI, is presented finally.

## **2.4.1 Development of metacognition theory**

### **2.4.1.1 Definitions of metacognition**

Philosopher Alfred Tarski in the 1950s proposed the *meta* concept. The basic idea is that metawhatever refers to “whatever about whatever” (Tarski, 1956). He distinguished between meta-level and object-level and proposed that meta-level is in some sense detached from the object-level it refers to. The object level is the lower level. This level is only concerned with the thing itself. And the meta-level is the higher level and, at the meta-level, things are used to analyze or prove things regarding statements in the object-level. Based on Tarski, a Metacognitive Model (Nelson & Narens, 1990) of consciousness and cognition was formulated in which any lower-level cognition can itself be the subject of a higher-level cognition and that lower-level and higher-level cognition can occur simultaneously. Figure 1 illustrated schematically the three features of the Metacognitive Model. First, information flowing from the object-level to the meta-level is referred to as monitoring. It also indicates that the meta-level is informed by the object-level. Second, information flowing

from meta-level to the object-level is called control. It signifies that the meta-level modifies the object-level. Third, the meta-level has some model that contains a goal and it accomplishes goals by communicating back and forth with the object-level. Nelson and Narens (1990) emphasize the control and monitoring of the cognitive processes by devising a model in which control and monitoring mediate the beginning and terminating states of the cognitive process (meta-level and object-level).

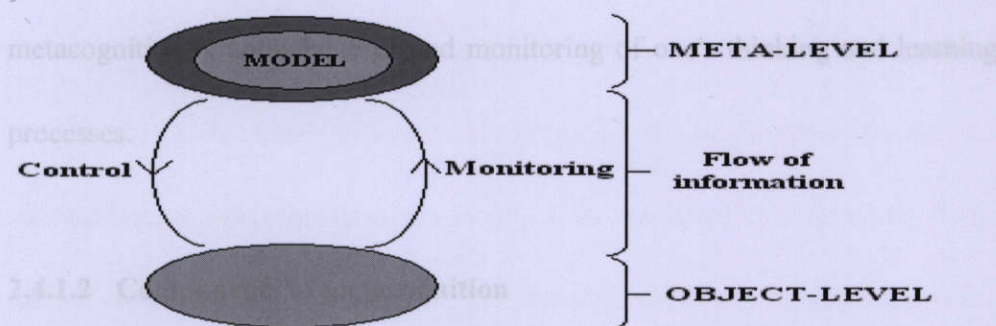


Figure 1: Three Features of the Metacognitive Model (Nelson & Narens, 1990, p.126)

Metacognition is the confluence of Piagetian developmental psychology and information processing theory (Flavell, 1979). Flavell (1976) was one of the first researchers to define the term “metacognition”. Flavell (1976, p.232) defines metacognition as “one’s knowledge concerning one’s own cognitive processes and products or anything related to them.” Metacognition is “the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive objects or data on which they bear, usually

in the service of some concrete goal or objective” (Flavell, 1976, p.232). Flavell (1979) also described metacognition basically as “knowledge and cognition about cognitive phenomena” (p.906). The cognitive phenomena are associated self-regulation with cognitive monitoring (Griffith & Ruan, 2005). Similarly, Nelson (1999) described metacognition as “the scientific study of an individual’s cognitions about his or her own cognitions” (p.625). In general, metacognition involves thinking about thinking and cognition of cognition (Gredler, 1997; Hacker, 1998). According to Baker and Brown (1984), metacognition is knowledge of and monitoring of one’s thinking and learning processes.

#### **2.4.1.2 Components of metacognition**

Flavell (1979) proposed four components in his metacognitive model: (1) metacognitive knowledge, (2) metacognitive experiences, (3) goals/ tasks, and (4) actions/strategies). This model emphasizes the individual’s knowledge about cognition and strategy use. He reported that people monitor their cognitive process by using components described in these four components. Metacognitive knowledge referred to a person’s knowledge or beliefs about the factors that impact cognitive enterprises. It is acquired knowledge about one’s

cognitive process and the diverse “cognitive tasks, goals, actions, and experiences” (p.906). Metacognitive knowledge had three variables: person, task, and strategy. The person variable was concerned with any knowledge or awareness about how one learns and processes their cognitive activities (e.g., knowing that one remembers words better than numbers). The task variable was associated with knowledge about the nature of the task and the demands of the task (e.g., knowing that it is easier to remember the gist of a text than its exact wording). The strategy variable referred to knowledge about the differential value of alternative strategies for enhancing performance (e.g., skimming a text to get the main idea) (Flavell, 1985, p.24-26). All three variables are interdependent when learners are engaged in metacognitive activities (Iwai, 2011). Metacognitive experiences are internal responses that people have regarding their metacognitive processing. Flavell (1979) defined metacognitive experiences as “any conscious cognitive or affective experiences that accompany and pertain to any intellectual enterprise” (p.906). For example, when a person is having a conversation with another, he or she might suddenly feel unsure about what the other person said. An individual’s awareness of failure, success, uncertainty, or satisfaction about things is included in this component. Goals (or tasks) are “the objectives of a cognitive enterprise” (p. 907) while actions (or strategies) are the cognitions or other behaviors



employed to achieve the goals. Humans use and interact with these four categories' enterprises in metacognitive processes.

Kluwe (1982) modified and developed Flavell's definition. He discussed metacognition on the basis of a distinction between declarative and procedural knowledge in information processing systems. Kluwe (1982) identified two general attributes common to metacognitive activities: "a) the thinking subject has some knowledge about his own thinking and that of other persons; b) the thinking subject may monitor and regulate the course of his own thinking, i.e. may act as the causal agent of his own thinking" (p.202). Moreover, Kluwe used the term 'executive processes' to denote both monitoring and regulating strategies. Executive monitoring processes are "directed at the acquisition of information about the person's thinking processes" (Kluwe, 1982, p.212) and involve the decisions of identifying the task, checking on the working progress, evaluating the progress and predicting the outcome of the progress. Executive regulation processes are "directed at the regulation of the course of one's own thinking" (Kluwe, 1982, p.212) and include the decisions of allocating resources to the task, determining the order of steps to complete the task and setting the intensity or speed of the task.



Furthermore, based upon Flavell's (1979) model, researchers identified knowledge of cognition and regulation of cognition as the two dimensions of metacognition (Baker & Brown, 1984; Brown, 1985; Brown, Bransford, Ferrara, & Campione, 1983; Carrell et al., 1998). These dimensions became a focus among scholars (Paris & Winograd, 1990) and provide a useful base upon which to understand how metacognition influences learning. The first dimension is knowledge of cognition which involves declarative knowledge, procedural knowledge, and conditional knowledge (Jacobs & Paris, 1987; Paris, Lipson & Wixson, 1983). Declarative knowledge refers to "knowledge that a person may have about his or her abilities and about the salient learning characteristics that affect cognitive processing" (McCormick, 2003, p. 80). In the example of reading, declarative knowledge indicates a learner's understanding about what reading strategies are; knowing what summarizing, skimming, inferring, and taking notes are is declarative knowledge (Carrell et al., 1998). Procedural knowledge is identified as "knowledge of how to execute procedures such as learning strategies" (McCormick, 2003, p. 80), or how to use the particular reading strategies. This knowledge requires learners not only to understand what reading strategies are, but also to understand how to actually use them (Winograd & Hare, 1988). Conditional knowledge is learners' abilities to select and employ specific reading strategies appropriately in various



tasks and to evaluate the effectiveness of the strategies (Carrell et al., 1998; Jacobs & Paris, 1987; Winograd & Hare, 1988). In order to have conditional knowledge, learners need to know when and where to apply declarative and procedural knowledge (Schreiber, 2005). The second dimension in metacognition is regulation of cognition. In the field of reading, regulation of cognition includes planning, monitoring, testing, revising, and evaluating strategies (Baker & Brown, 1984). Regulation consists of selecting proper approaches and organizing processes of how to effectively conduct these strategies (McCormick, 2003). Van Kraayenoord and Goos (2003) assert that planning, choosing appropriate strategies, monitoring progress, evaluating outcomes, and revisiting employed plans and strategies are involved in the regulatory mechanisms.

Jacobs and Paris (1987) divided metacognition into two broad categories: self-appraisal and self-management of cognition. Self-appraisal reflects people's reflections about their knowledge and abilities, or their evaluation of the task difficulty and cognitive strategies that may facilitate or impede their performance. Any kind of self-appraisal of cognition can be classified in terms of declarative, procedural and conditional knowledge. Self-appraisal answers questions about "what you know, how you think, and when and why to apply

knowledge or strategies” (Paris & Winograd, 1990, p.17). Self-management is “metacognition in action”, that is, how metacognition helps to orchestrate cognitive aspects of problem solving. It is reflected in people's executive actions such as evaluating, planning, and regulating.

The different theoretical perspectives on metacognition have shown how the “fuzzy concept” (Flavell, 1981, p.37) has evolved from different theoretical orientations since Flavell first proposed the notion in the 1970s. Flavell’s work on metacognition, (1979) emerging from Piagetian developmental research, places more emphasis on learners' metacognitive knowledge. Kluwe (1982) distinguishes between declarative and procedural knowledge, with the first embodying Flavell’s metacognitive knowledge and the second emphasizing the executive process. Brown et al. (1983) highlighted regulation of metacognition by distinguishing between declarative and procedural knowledge. The distinction between declarative and procedural knowledge also features the self-appraisal and self-management of cognition proposed by Jacobs and Paris (1987).

Although there seems to be no consensus on all aspects of metacognition and there still exist some controversial issues regarding the terminology, at least two

features are common to all these definitions. First, metacognition includes knowledge of one's, cognitive and affective states. Second, it involves the ability to consciously monitor and regulate one's cognitive and affective states (Hacker, 1998). These two features are closely related to each other.

#### **2.4.2 Development of metacognitive strategies in reading**

Research on metacognition in reading comprehension has identified self-regulatory processes that improve achievement and instructional practices. Anderson (1991) pointed out that successful reading comprehension is “not simply a matter of knowing what strategy to use, but the reader must also know how to use it successfully and to orchestrate its use with other strategies. It is not sufficient to know about strategies, but a reader must be able to apply them strategically” (p.19). We may conclude that metacognitive strategies include an awareness of what readers are doing and the strategies they are applying.

##### **2.4.2.1 Metacognitive strategies in L2 research**

Metacognitive strategies focus on the learner's conscious thinking, planning and action. Based on the above-mentioned metacognition, we can understand that metacognitive strategies are more specific cognitive behaviors. According

to O'Malley and Chamot (1990), "metacognitive strategies are learning strategies that involve thinking about or knowledge of the learning process, planning for learning, monitoring learning while it is taking place, or self-evaluation of learning after the task has been completed" (p.137). Oxford (1990) defined metacognitive strategies as "actions which go beyond purely cognitive devices, and which provide a way for learners to coordinate their own learning process" (p.136). Ellis (1994) regarded metacognitive strategies as making use of knowledge about cognitive processes and constituting an attempt to regulate language learning by means of planning, monitoring, and evaluating. For Cohen (1998), metacognitive strategies are actions that "deal with pre-assessment and pre-planning, on-line planning and evaluation, and post-evaluation of language learning activities and of language use events" (p.7). As we can see from the above, metacognitive strategies are self-monitoring and self-regulating activities, focusing on both the process and the product of learning

There have been several attempts at categorizing metacognitive strategies. In Oxford's (1990) system, metacognitive strategies are broadly classified into three groups: centring one's learning; arranging and planning one's learning; evaluating one's learning. The diagram is given below (see Figure 2).

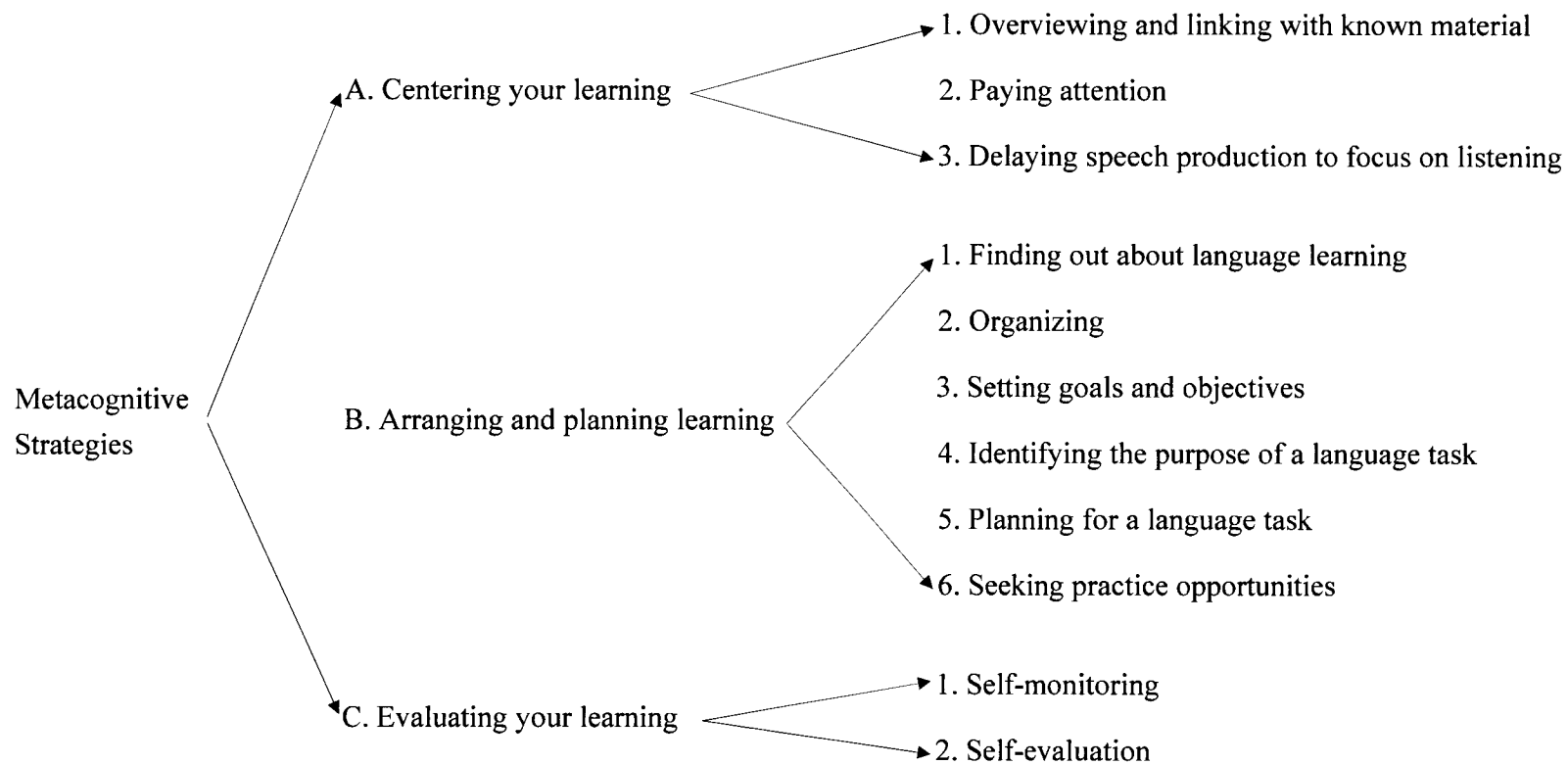


Figure 2: Oxford's Classification of Metacognitive Strategies (Oxford, 1990, p.137)



According to Oxford (1990), an effective language learner utilizes these metacognitive strategies to proceed through language learning tasks. For example, an effective language learner might begin to plan a reading task by setting goals for reading or by making predictions based on a title and his or her prior knowledge. The learner then monitors the reading and evaluates their reading comprehension. If a learner encounters difficulties during reading, they might adopt compensatory strategies flexibly to facilitate their reading comprehension. In summary, an effective learner of a language can select and integrate appropriate metacognitive strategies to enhance their learning.

O'Malley and Chamot (1990) claimed that metacognitive strategies involve thinking about the learning process, planning for learning, monitoring of comprehension or production while it is taking place, and self-evaluation after the learning activity has been completed. O'Malley and Chamot (1990) have conducted a series of empirical studies based on information processing theories and proposed a comprehensive list of learner strategies, of which the classification of metacognitive strategies is an important part. They are set out in the following table.

Table 4: O'Malley and Chamot's List of Metacognitive Strategies

<b>Metacognitive Strategies</b>	<b>Definition</b>
<b><i>Planning</i></b>	
Advanced organizers	Previewing the main ideas and concepts of the material to be learned, often by skimming the text for the organizing principle.
Directed attention	Deciding in advance to attend in general to a learning task and to ignore irrelevant distracters.
Functional planning	Planning for and rehearsing linguistic components necessary to carry out an upcoming language task.
Selective attention	Deciding in advance to attend to specific aspects of language input, often by scanning for key words, concepts, and/or linguistic markers.
Self-management	Understanding the conditions that help one successfully accomplish language tasks and arranging for the presence of those conditions
<b><i>Monitoring</i></b>	
Self-monitoring	Checking, verifying or correcting one's comprehension or performance in the course of a language task
<b><i>Evaluation</i></b>	
Self-evaluation	Checking the outcome of one's own language performance against an internal measure of completeness and accuracy; checking one's language repertoire, strategy use, or ability to perform the task at hand.

(Source: O'Malley & Chamot, 1990, p.44)



O'Malley and Chamot (1990) described metacognitive strategies as “higher order executive skills that may entail planning for, monitoring or evaluating the success of a learning activity” (p.48). According to O'Malley and Chamot (1990), metacognitive strategies, particularly evaluating ones, are seen as those that distinguish more successful learners from the average. Among the metacognitive strategies, selective attention, planning, monitoring and evaluation are the most important ones. Furthermore, planning is the key metacognitive strategy for second/foreign language learning; it is involved in directing the course of language reception and production. The application of metacognitive strategies may be conscious or subconscious. In the initial developmental stage, their application should be intentionally instructed; when they develop into the advanced stage, they may become automatic and subconscious.

Metacognition is a particular kind of cognition, a subset of cognition (Nelson, 1999). Accordingly, metacognitive and cognitive strategies fulfill different goals (Gredler, 1997). Flavell (1979) made a clear distinction between cognitive and metacognitive strategies: cognitive strategies make progress towards a cognitive goal while metacognitive strategies consciously and actively monitor cognitive progress. An example of a cognitive strategy is reading text headings



to get the meaning of the content, whereas a metacognitive strategy would be putting the information you have just read into your own words and possibly reflecting on what the text might be about in light of your prior knowledge of the topic (Flavell, 1979).

#### **2.4.2.2 Metacognitive strategies involved in reading processes**

Metacognition is a complex set of skills and strategies contributing to reading comprehension (Dunlosky & Metcalfe, 2009; Pressley, 2002). Metacognitive strategies play a crucial role in enhancing readers' comprehension of text, regardless of the type of reading assignment (Anderson, 1991). Palincsar & Brown (1984) described six metacognitive strategies that can enhance the reading comprehension of readers. They are: (1) clarifying the purpose of reading; (2) focusing on the main content; (3) activating the relevant background knowledge; (4) evaluating whether or not the prior knowledge is consistent with the text content; (5) self-monitoring to determine whether comprehension is occurring; (6) inferring and verifying the inference. Metacognitive strategies orientate readers to select, employ, monitor, and evaluate their reading comprehension in three stages of strategies: pre-reading (planning) strategies, while-reading (monitoring) strategies, and post-reading

(evaluating) strategies (Cohen, 1998; Hudson, 2007; Israel, 2007). These three stages of metacognitive strategies are effective for better reading comprehension (Mokhtari, Reichard, & Sheorey, 2008). When students are monitoring their comprehension, they must be active in their reading before they begin reading, while they are reading and reflective of their comprehension when they have finished reading (Vacca, 2002).

A skillful reader tends to employ strategies before they read the text. Such before reading strategies include prediction, surveying the text, activating background knowledge and determining the purpose of the reading (Beers, 2003; Pressley, 2002). During reading strategies ensure the reader is engaged in the text (Vacca, 2002). Glasgow (2005) states: “The purpose of during reading strategies is to help the students read constructively, use a range of transactions appropriate to the task, and capture personal responses to the text” (p.11). Metacognition during reading occurs when students evaluate their comprehension and employ strategies allowing them to continue their comprehension (Ehren, 2005; Tovani, 2000). Such strategies include changing the pace of their reading, asking questions about the text, rereading for understanding, making connections and predictions (Boling & Evans, 2008; Tovani, 2000). Metacognitive strategies students employ after reading the text

allow them to extend understanding within the text and build upon those understandings to create new ideas (Vacca, 2002). Glasgow (2005) finds that “after reading strategies encourage reflection and lead readers deeper into the book, allowing them to probe and clarify ideas” (p.11). Students who are able to be reflective about their reading are more likely to be engaged while reading and, as a result, be more effective readers (Rycik & Irvin, 2005; Tovani, 2000). Metacognitive strategies used after reading include summarizing, making connections with the text and self-questioning.

In addition, there are a large number of studies on metacognitive strategies in reading for L1 and L2 learners. Both L1 and L2 reading researchers have emphasized that metacognitive strategies play a significant role in a reader’s language learning. O’Malley and Chamot (1990) stressed that “students without metacognitive approaches are essentially learners without direction or opportunity to plan their learning, monitor their progress; or review their accomplishments and future learning directions” (p.8). Vandergrift (2002) proposed that “metacognitive strategies are crucial because they oversee, regulate, or direct the language learning task, and involve thinking about the learning process” (p. 599).



L1 reading researchers Baker and Brown (1984) investigated several different aspects of the relationship between metacognition and effective reading. Two patterns of metacognition were recognized: (1) metacognitive awareness or knowledge of cognition, and (2) regulation of cognition which includes the reader's knowledge about his or her own cognitive resources and the compatibility between the reader and the reading situation. Students who use self-regulated strategies are most likely to succeed in academic performance (Pintrich & Zusho, 2002). Hartman (1994) implied that self-regulation of comprehension was strongly related to the interpretation of text, which was later supported by the studies of Schreiber (2005) and of Zimmerman and Schunk (2001). In Hartman's (1994) study, eight reading-proficient high school students read five passages silently, reported back with a think-aloud task, and answered 23 reading comprehension questions. The results indicated that these participants monitored, controlled, and evaluated the process of reading (Hacker, 2004). Moreover, Isaacson and Fujita (2006) conducted a study to perceive relationships between metacognitive knowledge monitoring and self-regulated learning among 84 undergraduate students in the United States. The study revealed that academically successful students were able to identify abilities in academic performance and demonstrated metacognitive awareness and strategies more than less successful students. The study implied that more



metacognitive awareness and use of the strategies lead to academic achievement. Westby (2004) stated that expert readers tend to use various metacognitive strategies in reading, such as guessing, identifying main ideas, and focusing on text structures, than do novice readers.

Barnett's study (1988) found that L2 reading comprehension and strategy awareness were significantly correlated with each other for a group of 278 college-level EFL French learners. Barnett required the participants to read an unfamiliar passage and write in English what they remembered. In the second part of the study, participants completed a set of background knowledge questions before reading a text and in the third part of the study, the participants completed the test. They then answered a 17-item survey in English regarding the types of reading strategies they thought best described the way they read. Three scores were used for analysis: "background knowledge scores", "comprehension scores" and "strategy-use scores". The results showed "students who think they use those metacognitive strategies considered most productive actually do read through context better and understand more than do those who do not think they use such strategies" (p.156). Chinese researchers Yang and Zhang (2002) also carried out a correlation study in which they attached great importance to metacognitive strategies in terms of their influence



on reading proficiency. The investigation of 125 college students' metacognitive strategies was conducted through a self-designed questionnaire involving knowledge of oneself, knowledge of strategies and knowledge of tasks. The study showed significant correlations between metacognitive strategies and reading proficiency.

Researchers have also made efforts to explore the relationship between L1 and L2 metacognitive strategies in reading. Yang (1996) compared the strategies used in reading Chinese and English employed by 90 EFL Taiwanese first-year college students. She found that the students reported using more global and macro-linguistic level reading strategies (e.g., guess through the context, and make inferences) when reading Chinese. On the other hand, the students tended to use more local and micro-linguistic strategies (e.g., looking up vocabulary) when reading English and they thought that the more vocabulary they memorized, the more they could understand the texts. Later, Feng and Mokhtari (1998) investigated the strategies used by native speakers of Chinese while reading easy and difficult passages in Chinese and English. The results revealed that the native speakers of Chinese employed strategies more frequently when they read in English than in Chinese. Moreover, Alsheikh (2002) examined the metacognitive knowledge and reading strategies used by native Arabic speakers.



90 university students completed a background and a reading strategies inventory. The 90 participants used significantly more strategies in English than in Arabic. They also reported using more repair strategies (e.g., adjusting the reading time, visualizing information, and re-reading) and “support reading strategies” in English than in Arabic. Support reading strategies included asking oneself questions, and translating from English to Arabic. These results were consistent with those of Feng and Mokhtari (1998), who investigated Chinese native speakers’ use of reading strategies while reading simple and difficult passages in Chinese and English. On the other hand, these results from Feng and Mokhtari (1998) and Alsheikh (2002) challenged those of Pritchard (1990) and Tang (2001). Pritchard indicated that bilingual Latino high school students used the same reading strategies across languages while Tang showed that four ESL students used similar reading strategies when reading English and Chinese narrative texts.

On debating the developmental differences in metacognitive strategies, Piaget (1955) pointed out that age relates to children’s cognitive developmental stages. Many scholars argue that the elder learners are and the more proficient readers are, the more essential metacognitive strategies are for reading comprehension (Baker, 2005, 2008; Baker & Brown, 1984; Israel, 2007; McCormick, 2003;





Mokhtari, Reichard, & Sheorey, 2008; Oakhill & Cain, 2006; Peverly, Brobst, & Morris, 2002; Pressley & Afflerbach, 1995; Pressley & Gaskins, 2006; Wu, 2002). For example, Myers and Paris (1978) put questions about metacognitive awareness, tasks, purposes and strategies in reading to second and sixth grade students. They found that elder students were able to identify reading strategies and also to use multiple strategies, including using a dictionary and rereading. On the other hand, younger students were not aware of reading strategies and focused on more local or bottom-up strategies, such as decoding, rather than global or top-down strategies. Block and Israel (2004) agreed with the findings of Myers and Paris (1978), showing that struggling readers use fewer metacognitive strategies. Wu (2002) also explored whether younger and elder students had different perceptions about reading. She found that elder and more proficient readers appeared to have more awareness of their metacognitive skills.

### **2.4.3 Methodological approaches to metacognition**

#### **2.4.3.1 Methods of measuring metacognition**

Several methods of measuring metacognition and self-regulation have been developed and researched (Sperling, Howard, Miller, & Murphy, 2002). Feitler and Hellekson (1993) used standardized reading achievement test scores as dependent measures in intervention studies with their special and general education children. However, standardized achievement tests can be problematic when used as measures of strategy use, motivation, and metacognition, because there does not appear to be a direct relationship between standardized achievement scores and metacognition (Allon, Gutkin, & Bruning, 1994). Other researchers used measures with broader self-regulatory constructs to assess metacognition directly. For example, interview techniques, structured interview techniques, monitoring checklists, calibration techniques, and teacher ratings were the methods of measurement for metacognition (Sperling et al., 2002). Each of the assessment methods has strengths and weaknesses (see Table 5). Structured interviews and interview techniques had the edge on gaining more in-depth information, but it has been difficult to administer these assessments and considerable time is required for data analysis. Monitoring checklists, calibration techniques, and teacher ratings have been employed by researchers and teachers; however, they entail a comparison of the advantages and limitations of these methods of measuring metacognition.

Table 5: Summary of Methods of Measuring Metacognition

Authors <sup>o</sup>	Method <sup>o</sup>	Advantages <sup>o</sup>	Disadvantages <sup>o</sup>
Newman (1984) <sup>o</sup>	Calibration technique <sup>o</sup>	Less subjective and easy to administer <sup>o</sup>	Similar to the measure of self-efficacy <sup>o</sup>
Zimmerman (1986) <sup>o</sup>	Structured interview technique <sup>o</sup>	More in-depth data <sup>o</sup>	Lengthy time to administer and time- <sup>o</sup> consuming process of data analysis <sup>o</sup>
Zimmerman & Martinez-Pons (1988) <sup>o</sup>	Teacher technique <sup>o</sup>	Teachers are familiar to students <sup>o</sup>	Teachers may be affected by previous experience or impression <sup>o</sup>
Swanson (1990) <sup>o</sup>	Interview technique <sup>o</sup>	More in-depth data <sup>o</sup>	Time-consuming for administering and data analysis <sup>o</sup>
Fortunato, Hecht, Tittle & Alvarez (1991) <sup>o</sup>	Self-report inventory <sup>o</sup>	Easy to administer and score <sup>o</sup>	Respondents may not answer what they perform <sup>o</sup>
Manning & Glasner (1996) <sup>o</sup>	Monitoring checklist <sup>o</sup>	Systematic means to assess both <u>metacognitive</u> classroom academic learning and self-regulation of behavior in interventions <sup>o</sup>	May not be objective <sup>o</sup>

Note. Adapted from Jacobs & Paris, 1987; Sperling et al., 2002, Pressley & Afflerbach, 1995.

#### **2.4.3.2 Instruments of metacognitive awareness**

Recently, research has paid a lot of attention to metacognitive awareness of language learners' cognitive and motivational processes (Alexander & Jetton, 2001; Pressley, 2000; Pressley & Afflerbach, 1995). Researchers agree that readers' awareness, monitoring and regulating of their cognitive processes are significant for readers' comprehension. When it comes to measuring readers' awareness and their use of reading strategies, there were several instruments available to L1 or L2 readers (see Table 6).



Table 6: Metacognitive Awareness Inventory

Inventory <sup>o</sup>	Author <sup>o</sup>	Structure <sup>o</sup>	Subject <sup>o</sup>	Reliability <sup>o</sup>
IRA <sup>o</sup>	Jacob & Paris (1987) <sup>o</sup>	Evaluation, planning, regulation & conditional <sup>o</sup> knowledge <sup>o</sup>	Elementary Children <sup>o</sup>	=.61 <sup>o</sup>
MSI <sup>o</sup>	Schmitt (1990) <sup>o</sup>	Predicting and verifying, reviewing, purpose setting, self questioning, drawing from background knowledge, summarizing, & applying fix-up strategies <sup>o</sup>	Elementary Children <sup>o</sup>	=.87 <sup>o</sup>
RSU <sup>o</sup>	Pereira-Lair & Deane (1997) <sup>o</sup>	Cognition: rehearsal, organization & elaboration strategies <u>Metacognition</u> : planning, monitoring, & regulation <sup>o</sup>	Adolescents <sup>o</sup>	=.97 <sup>o</sup>
MARSI <sup>o</sup>	<u>Mokhtari &amp; Reichard</u> (2002) <sup>o</sup>	Global, Problem-solving, & Support reading strategies <sup>o</sup>	adolescents & adults <sup>o</sup>	=.93 <sup>o</sup>
SORS <sup>o</sup>	<u>Mokhtari &amp; Sheorey</u> (2002) <sup>o</sup>	Global, Problem-solving, & Support reading strategies <sup>o</sup>	adolescents & adults <sup>o</sup>	=.93 <sup>o</sup>

Note: IRA = the Index of Reading Awareness (Jacob & Paris, 1987); MSI = the Metacomprehension Strategy Index (Schmitt, 1990); RSU = Reading Strategy Use (Pereira-Lair & Deane, 1997); MARSI = the Metacognitive Awareness of Reading Strategies Inventory (Mokhtari & Reichard, 2002); SORS = the Survey of Reading Strategies (Mokhtari & Sheorey, 2002)

The above instruments have been quite useful in helping to measure metacognitive awareness and use of reading strategies. However, some instruments had their disadvantages that constrained their use with secondary school students. First, the Index of Reading Awareness' (IRA) reliability index only reached .61 which indicated the reliability index was minimal and "should be used cautiously as a measure of metacognition in reading" (McLain, Gridley, & McIntosh, 1991, p.81). Second, as to Schmitt's Metacomprehension Strategy Index (MSI), each of the items begins with these kinds of statements: "Before I begin reading, it's a good idea to..., While I'm reading, it's a good idea to... or.... After I've read a story, it's a good idea to..." and followed by four multiple-choice options of metacognitive strategies. Many of the options would, to some degree, lead students to choose certain strategies. Third, although Pereira-Lair and Deane's Reading Strategy Use (RSU) reached high reliability (.97), some items from the Reading Strategy Use (RSU) scale were not considered as reading strategies (e.g., "I find it hard to pay attention when reading" and "after I have been reading for a short time, the words stop making sense").

Fourth, as the first three instruments have shortcomings that limit their use, Mokhtari and Reichard (2002) proposed a new measure for tapping students'

metacognitive awareness and use of reading strategies while reading academic materials. They designed and validated the Metacognitive Awareness of Reading Strategies Inventory (MARSI) as a tool for measuring native English (L1) speaking students' awareness and perceived use of reading strategies while reading academic or school-related materials. In developing MARSI, an attempt was made to draw on Pressley and Afflerbach's (1995) notion of constructively responsive reading, which appears to be quite consistent with recognized theories of reading such as Rosenblatt's (1978) reader response theory, in which the transaction between readers and texts is emphasized. The concept of constructively responsive reading also embraces key principles of the top-down processing model of reading reflected in schema theory (Anderson & Pearson, 1984), bottom-up text-processing strategies emphasized by Van Dijk and Kintsch (1983), and the comprehension monitoring processes advocated by several notable researchers (e.g., Baker & Brown, 1984; Garner, 1987; Paris & Winograd, 1990) which offer various strategies skilled readers use before, during, and after reading. Overall, in developing MARSI, the data demonstrated that the instrument is a reliable and valid measure for assessing students' metacognitive awareness and perceived use of reading strategies while reading for academic purposes.



Three reading strategy categories namely Global, Problem-solving, and Support were used as subscales of the MARSI. Results showed that there were significant differences in the use of Global and Problem-Solving Strategies by self-reported reading ability but no significant differences in the use of the Support Strategies by self-reported reading ability. That is, better readers reported using strategies geared towards solving problems, such as rereading and reading at a slower pace when needed, more frequently than poorer readers. Also, better readers reported using strategies that focus on a global analysis of text, such as setting a purpose and using text features to a greater extent than poorer readers. Support strategies such as underlining text and using reference materials were used similarly by good and poor readers. Support strategies such as underlining text and using reference materials were used similarly by good and poor readers.

Fifth, based on MARSI, Mokhtari and Sheorey (2002) developed a new instrument called the Survey of Reading Strategies (SORS) to measure the metacognitive reading strategies of L2 readers while reading academic or school-related materials. The SORS consists of the same three categories of reading strategies: global, problem-solving and support. Sheorey and Mokhtari (2001) used the SORS to examine differences among native and non-native





ESL college students. They reported finding that ESL students of both a high-reading ability and a lower-reading ability used more support reading strategies (e.g., using a dictionary or taking notes) than did native speakers. In addition, high ability readers, both native English speakers and ESL students, used a higher number of cognitive and metacognitive reading strategies than lower reading ability students. Sheorey and Mokhtari (2001) pointed out that proficient readers were more able to not only select which strategies to use but also monitor the use of such strategies during their reading process. They stated that “skilled readers are more able to reflect on and monitor their cognitive processes while reading” (p.445). In other words, they are aware not only of which strategies to use, but they also tend to be better at regulating the use of such strategies while reading.

Anderson (2003) adapted the SORS to measure online reading strategies of L2 readers. This adaptation was named the Online Survey of Reading Strategies (OSORS). He found that ESL and EFL readers most often use the Problem Solving Strategies (e.g., adjusting reading rate, rereading difficult texts and pausing to think about what one is reading). As for comparing ESL to EFL readers, EFL readers used the Problem Solving Strategies more frequently than did the ESL readers. However, the results indicated that there were no

differences between the 247 online readers who took part in this study, which included the use of Global Reading Strategies and Support Reading Strategies. Phakiti (2003) employed both qualitative and quantitative methods to examine the relationships between EFL readers' cognitive and metacognitive strategies and their reading test performance by using SORS. The 384 participants took a reading comprehension achievement test and completed the SORS questionnaire regarding their thought processes while taking the comprehension test. The results revealed that there is a positive relationship between their use of cognitive and metacognitive strategies and the reading test performance. Highly successful test-takers reported significantly higher metacognitive strategy use than moderately successful test-takers and unsuccessful test takers. Zhang and Wu (2009) conducted a study to assess metacognitive awareness and reading-strategy use of EFL Chinese senior high school students by using SORS. A total of 270 students were involved in the study. The results showed that the students reported using the three categories of strategies at a high-frequency level. Both the main effect for strategies and the main effect for learners' proficiency were significant. The high-proficiency group outperformed the intermediate group and the low-proficiency group in two categories of reading strategies: global and problem-solving; but no statistically significant difference was found among the three proficiency groups in using



support strategies.

## **Summary**

A review of the literature provided a comprehensive review of key research relevant to the study. Theories of LLS, language reading and significant factors affecting reading, and metacognitive strategies in reading were all discussed. Reading plays a significant role in academic achievement (Koda & Zehler, 2008). Some different key factors that influence learners' L2 reading performance, including linguistic features, cultural influence, L2 language proficiency, L1 knowledge, vocabulary, motivation, teachers and parents were examined.

Metacognition is related to the cognitive framework and is a significant feature in developing readers' comprehension (Baker & Brown, 1984; Garner, 1987; McCormick, 2003). Metacognitive strategies are effective for students' English reading. Regardless of whether it was a question of first or second language, skillful readers were able to manipulate various reading strategies and demonstrated high reading comprehension (Anderson, 2005; Blackowicz &



Ogle, 2008; Sheorey & Mokhtari, 2008). On the other hand, less skillful learners used fewer reading strategies and showed lower reading comprehension (Baker & Brown, 1984; Jiménez et al., 1996). More proficient readers often demonstrate better use of metacognitive strategies than poor readers (Anderson, 2003; Phakiti, 2003; Sheorey & Mokhtari, 2001).

However, most of the above empirical studies were targeted at tertiary level students. Relatively little research has focused on junior secondary school students who are still in the developmental process of L1 and L2 reading. This study therefore focuses on junior secondary students' metacognitive strategy use, with a specific inquiry into the relationship between their reading proficiency and the use of metacognitive strategies in their L1 and L2 reading. Also, the current study will investigate in depth whether proficient learners differ from less-proficient learners in their actual use of the metacognitive strategies in English reading, and explore the impact of L1 reading strategies on L2 reading. Out of the existing research that has been conducted, quantitative and qualitative methods were used independently to explore the metacognitive strategy use. Investigating metacognition in previous studies was either based on large-scale quantitative questionnaire studies (Mokhtari & Reichard, 2002; Mokhtari & Sheorey, 2002; Alsheikh, 2002; Anderson, 2003; Zhang & Wu,

2009) or qualitative interviews (Tang, 2001; Pressley, 2002; Zhang, 2001, 2008, 2010). This study attempts to fill in the research gap by adopting mixed quantitative and qualitative research methods to add to our understanding of what and how metacognitive strategies are used by Chinese EFL junior secondary school students, which will be discussed in detail in the next chapter.



## **CHAPTER 3**

### **METHODOLOGY**

The purpose of the current study was to examine the self-reported use of metacognitive reading strategies by junior secondary school students with different proficiency levels when reading English and Chinese texts and to explore the impact of Chinese reading strategies on their English reading. This chapter describes the methods of gathering the data for this study. It consists of the following components: research design, the description of the research approach, the context of the study and participants, instruments, a pilot study, data collection and data analysis procedures, and ethical issues.

#### **3.1 Research Design**

A mixed-methods approach was applied in this study to “build on the synergy and strength that exists between quantitative and qualitative research methods in order to understand a phenomenon more fully than is possible using either quantitative or qualitative methods alone” (Gay, Mills, & Airasian, 2006, p.490). Mixing methods presumes that the philosophic dichotomy of quantitative (e.g., positivistic, theory-driven, statistical analysis) and qualitative (e.g., interpretive, data-driven, researcher analysed) methods can be overcome



by judiciously mixing different methods to explore complementary aspects of a research problem (Hammersley, 1992; Johnson & Onwuegbuzie, 2004). This approach requires successfully sequencing different studies in order to build an integrated understanding in which the strengths of each method are used partially to compensate for weaknesses in other methods and more importantly to answer distinctive but related research questions. Creswell (2008) stated that a mixed-methods design provides a comprehensive answer to each research question of the study and argued that a research design that integrates different methods is likely to produce better results in terms of quality and scope. By mixing the datasets, researchers are able to provide “a better understanding of the research problem and questions than either method by itself” (p.552).

According to Dörnyei (2007), several arguments have been put forward about the value of mixing methods. Firstly, it was “increasing the strengths while eliminating the weakness” (Dörnyei, 2007, p.45) as the strengths of one method can be utilized to overcome the weakness of another method used in the study. Secondly, mixed methods research is particularly appropriate for “multi-level analyses of complex issues” (p.45) because it allows researchers to obtain data about both the individual and the broader societal context. Thirdly, mixed-methods can “improve the validity of research” and “corresponding

evidence obtained through multiple methods can also increase the generalizability – that is, external validity – of the results” (p.45). Last but not least, a welcome benefit of mixed methods is that “the final results are usually acceptable for a larger audience than those of a monomethod study would be” (p.46).

Mixed-methods research requires sequencing different studies successfully in order to build an integrated understanding in which the strengths of each method are used partially to compensate for weaknesses in other methods and to answer related research questions.

While there are multiple options as to how to coordinate quantitative and qualitative methods, Creswell (2008) views explanatory mixed methods design as the most popular pattern, which can be defined as “a two-phase mixed methods design” (p.72). The design starts with the collection and analysis of quantitative data. The second qualitative phase is designed to follow from the results of the first quantitative phase by the subsequent collection and analysis of qualitative data. In an explanatory design, the general picture of the research problem is obtained from a quantitative technique (e.g., questionnaires, surveys), then, the sequential qualitative studies (e.g., interviews, observations,



or document interpretation) provide detailed insights that seek to “refine, extend, or explain the general picture” (p.560).

Following Creswell, I drew on an explanatory mixed methods design to investigate Chinese EFL junior secondary school students’ metacognitive strategy use in reading English and Chinese, which involves the use of two Likert-scale questionnaires, stimulated recalls and semi-structured interviews to strive for a thorough and comprehensive understanding of the metacognitive strategy use when reading English and Chinese texts. Therefore, two questionnaires in a quantitative approach were adopted first to investigate the junior secondary school students’ metacognitive strategy use in reading English and Chinese texts and to measure the relationship between students’ language proficiency and their use of metacognitive strategies in English and Chinese reading. Then, stimulated recalls and semi-structured interview as qualitative approaches were employed to gain access to their mental world in order to further explore the impact of Chinese reading strategies on their English reading strategy use.

### **3.2 Quantitative Method**



### **3.2.1 The context of the study and participants**

Chinese Mandarin is the national language and first language in Mainland China and it is also the medium of instruction from primary school to university in most of the provinces and regions. English is taught as a foreign language and is a compulsory subject from primary school in most cities.

Participants in this study were randomly selected from a population of about 400 second-year students from eight classes at two junior secondary schools (one Band 1 level school and one Band 2 level school) in Taiyuan, the capital city in Shanxi province in the northern part of China. A total of 280 students were involved in responding to the questionnaires, of which 272 were found to be valid. The age of the participants was between 13 and 14 years old, and they included both male and female students. They all speak Mandarin Chinese as their first language and English is a foreign language to them. They have all been learning English for three years at least from primary school.

The 272 participants whose questionnaires were deemed valid were divided into three proficiency levels for both English and Chinese. For the English proficiency groups, the high English proficiency group consisted of 113



students, the intermediate English proficiency group had 86 students and the low English proficiency group had 73 students. As for the Chinese proficiency groups, the high English proficiency group consisted of 85 students, the intermediate English proficiency group had 149 students and the low English proficiency group had 38 students. The classification was based on the results of their 2011 to 2012 end-of-term English and Chinese examinations designed by Taiyuan municipal education commission. In the English test, students were asked to read several passages and answer comprehension questions, fill blanks with the proper words, translate some English sentences into Chinese as well as write a short passage of about 50 to 80 English words. In the Chinese test, multiple choices about general knowledge of Chinese, reading comprehension tasks and a composition with a given topic of about 400 to 500 Chinese words were asked to be completed by the students. Both examinations reliably measured students' reading proficiency by virtue of their strong emphasis on reading comprehension and vocabulary. The scores of the high English and Chinese proficiency groups ranged from 80 to 100, those of the intermediate from 60 to 79, and those of the low English and Chinese proficiency groups from 31 to 59. Their overall average scores for the English examination were 70.56, while the overall average scores for their Chinese examination were 71.62.



Table 7: Participants’ English and Chinese Proficiency Information

Subjects	Proficiency groups/ Scores Range		Number of students	Average scores
English	High proficiency group	(80-100)	113	89.16
	Intermediate proficiency group	(60-79)	86	70.08
	Low proficiency group	(31-59)	73	42.39
	Total number/Overall English average		272	70.56
Chinese	High proficiency group	(80-100)	85	84.18
	Intermediate proficiency group	(60-79)	149	69.94
	Low proficiency group	(31-59)	38	50.09
	Total number/Overall Chinese average		272	71.62

3.2.2 Quantitative instruments - two questionnaires

Two questionnaires were used in this study to reveal the participants’ metacognitive strategy use and awareness in reading English and Chinese. The two questionnaires are used as one of the main instruments in this study owing to their several advantages. First, questionnaires are considered as a time-saving means of gathering data from a large number of people, and they are easy to administer and can be scored quickly. Secondly, questionnaires can avoid some of the pitfalls of verbal reports such as interviews (Garner, 1987). According to

Garner (1987), questionnaires are more objective than interviews because the latter may involve interpretations of open-ended responses, experimenter bias, or fabricated responses. Thirdly, questionnaires cannot place shy or inarticulate students at a disadvantage.

In this study, the use of two questionnaires - the Survey of Reading Strategies (SORS) (Mokhtari & Sheorey, 2002) and the Metacognitive Awareness of Reading Strategies Inventory (MARSI) (Mokhtari & Reichard, 2002) serve as a direct measure to elicit students' metacognitive strategies when reading in English and Chinese and to answer research questions one and two.

The MARSI (Mokhtari & Reichard, 2002) was designed to assess English speakers' metacognitive awareness and perceived use of reading strategies while reading academic or school-related materials. It was originally developed by Mokhtari and Reichard in 2002 as a tool for measuring native English-speaking adolescent and adult readers' metacognitive awareness and perceived use of reading strategies while reading academic or school-related materials (Mokhtari & Reichard, 2002). MARSI was validated with a large number of native speakers (N= 825) from secondary school to university.

Based on MARSİ, the SORS questionnaire emphasized the measure on the metacognitive strategy use of non-English native readers when reading academic materials (Mokhtari & Sheorey, 2002). As Mokhtari and Sheorey (2002) stated, the adaptation and development of SORS from MARSİ was to enable it to be used with adolescent and adult students whose English is a second or foreign language. According to the authors, they first refined the wording of several items to make them more easily comprehensible to EFL students. Second, to SORS were added two key strategies clearly not used by L1 readers but often by L2 learners (“translating from one language to another” and “thinking in the native and target language while reading”). Finally, the researchers removed two items, namely “summarizing information read” and “discussing what one reads with others”, which do not specifically constitute reading strategies as perceived in the research literature on metacognition and reading comprehension (Mokhtari & Sheorey, 2002).

In the present study, MARSİ was used to measure the self-reported metacognitive strategies when reading Chinese texts, while SORS was used to measure the self-reported metacognitive strategies when reading English texts.

The SORS and MARSİ both have 30 items and each of them uses a five-point Likert-type scale ranging from 1 (“I never do this”) to 5 (“I always do this”). The higher the number, the more frequent the respondent employs the strategy. The two questionnaires both measured three broad categories of reading strategies: (1) global reading strategies (henceforth “GLOB”; 13 items) are those intentional, carefully planned techniques by which learners monitor or manage their reading, which focused on setting the purpose for the reading act (e.g., setting purpose for reading, previewing text content, predicting what the text is about, etc.); (2) problem solving strategies (henceforth “PROB”; 8 items) are the actions and procedures readers use while working directly with the text, which concentrated on problem-solving or repair strategies used when reading (e.g., checking one’s understanding when encountering conflicting information, re-reading for better understanding, etc.); and (3) Support Reading Strategies (henceforth “SUP”; 9 items) are basic support mechanisms or tools intended to aid the reader in comprehending the text, which aimed at sustaining responsiveness to reading (e.g., use of reference materials like dictionaries and other support systems) (Mokhtari & Reichard, 2002). Table 8 and Table 9 present the items within each of the SORS and MARSİ categories.

Table 8: Three Categories of the SORS and Specific Items Administered When Reading English Texts

Category <sup>a</sup>	Item No. <sup>a</sup>
Global Reading Strategies (13 items) <sup>a</sup>	1,3,4,6,8,12,15,17,20,21,23,24,27 <sup>a</sup>
Problem-Solving Strategies (8 items) <sup>a</sup>	7,9,11,14,16,19,25,28 <sup>a</sup>
Support reading strategies (9 items) <sup>a</sup>	2,5,10,13,18,22,26,29,30 <sup>a</sup>

Total=30 items

Table 9: Three Categories of the MARSI and Specific Items Administered When Reading Chinese Texts

Category <sup>a</sup>	Item No. <sup>a</sup>
Global Reading Strategies (13 items) <sup>a</sup>	1,3,4,7,10,14,17,19,22,23,25,26,29 <sup>a</sup>
Problem-Solving Strategies (8 items) <sup>a</sup>	8,11,13,16,18,21,27,30 <sup>a</sup>
Support reading strategies (9 items) <sup>a</sup>	2,5,6,9,12,15,20,24,28 <sup>a</sup>

Total=30 items

Reliability analyses were used to determine the extent to which the questions on the questionnaires are related to each other, and to obtain an overall index of the repeatability or internal consistency of the scale as a whole. Cronbach’s alpha was used to measure the internal consistency of the SORS and MARSI inventory for assessing the self-reported use of metacognitive strategies when reading English and Chinese texts (Green & Salkind, 2003).

Mokhtari and Sheorey (2002) reported reliability data for the MARSI but not for the SORS. The reported reliability coefficients for the three categories were:



Global Reading Strategies, 0.92, Problem-solving Strategies, 0.79, and Support Strategies, 0.87. The reliability for the overall scale was 0.93, indicating a reasonably dependable measure of students' metacognitive awareness of reading strategies (Mokhtari & Sheorey, 2002).

To ensure that each student understood each item, the SORS and MARSII were administered to the participants in Mandarin and in English. The two questionnaires were first translated into Chinese by myself and then revised by two doctoral students who specialize in both Chinese and English to avoid possible misunderstandings because of the language barrier.

The Back Translation Technique was used to improve the reliability and validity of survey items in the two different languages. The Chinese version was back translated into English by two qualified translators. Then the original English version and the back-translated Chinese version were compared. According to Behling and Law (2000), "if substantial differences exist between the two source language documents, another target language draft is prepared containing modifications designed to eliminate the discrepancies" (p.20). The two translators and the researcher had an intense discussion about the accuracy of the translation and some minor modifications were made according to the

translators' suggestions.

### **3.2.3 Pilot study**

As a pilot study, the SORS questionnaire on measuring students' strategy use in reading English was conducted in March, 2011. A total of 280 second-year participants from the above-mentioned two junior secondary schools in Taiyuan city were involved in the pilot study.

The goal of any research is to achieve the objectives of the inquiry (Gardner, Gardner, MacLellan, & Osborne, 2003). This requires planning and defining the methods, and pilot studies are integral to this process (Gardner et al., 2003; Van Teijlingen, Rennie, Hundley, & Graham, 2001). Pilot studies enable study methods and data collection processes to be examined prior to a subsequent study (Reed, Newby, Coul, Jacques, Prescott, & Gray, 2007). Pilot studies are particularly important in mixed method research where the competing methodological perspectives can lead to ineffectual results. Therefore, a pilot study makes clear the complementary links between the quantitative and qualitative data collected to increase depth of exploration in the qualitative data (Lipscomb, 2007). Seliger and Shohamy (1989) suggested that a pilot study

“will significantly improve the quality of the data obtained” (p.173).

Therefore, a pilot study was conducted to revise the Chinese translation, check testing procedures, determine the reliability of the SORS instrument on the target subjects in a Chinese context and validate the appropriateness of the primary outcome measure. In addition, the amount of time needed to complete the questionnaire was calculated. Some modifications of wording about Chinese translation were made in response to problems arising from the pilot study. The results of the pilot study were also used for the purpose of designing the questions of semi-structured interviews later.

The 280 participants were divided into three English proficiency groups according to their end-of-term English examination of the year 2010 to 2011. There were 77 students in the high proficiency group and their scores ranged from 80 to 100. The intermediate proficiency group had 84 students and their scores ranged from 60 to 79. Meanwhile, 119 students were in the low proficiency group and their scores were below 60 in their end-of-term English examination.

I validated the reliability for the overall scale and the three categories. The internal consistency of the SORS for the pilot study was proven to be acceptable. The internal reliability coefficients (Cronbach's alpha) for the three strategy categories were as follows: GLOB ( $\alpha = .904$ ), PROB ( $\alpha = .878$ ), and SUP ( $\alpha = .849$ ). The overall reliability coefficient is  $\alpha = .955$ . Hence, the SORS is a reliable instrument to measure the subjects' use of metacognitive reading strategies in the Chinese junior secondary school context.

In the pilot study, the mean for overall reported use of the metacognitive strategies when reading English texts was  $M=3.08$ ,  $SD=.876$ . As far as the three categories of strategies are concerned, PROB ( $M=3.16$ ,  $SD=.973$ ) was the category used most frequently by the students, followed by GLOB ( $M=3.08$ ,  $SD=.903$ ) and SUP ( $M=3.01$ ,  $SD=.902$ ).

The top three strategies that were most favoured by the students were as follows: "using background knowledge" ( $M=3.51$ ,  $SD=1.349$ ), "translating from English to Chinese" ( $M=3.44$ ,  $SD=1.33$ ) and "guessing meaning of unknown words" ( $M=3.39$ ,  $SD=1.40$ ), while the bottom three were "reading aloud for better understanding" ( $M=2.41$ ,  $SD=1.30$ ), followed by "checking how text content

fits purpose” ( $M=2.70$ ,  $SD=1.28$ ) and “analyzing and evaluating the text” ( $M=2.75$ ,  $SD=1.20$ ).

#### **3.2.4 Quantitative data collection procedures**

After making some modifications to the wording of the Chinese translation that responded to problems arising from the pilot study, the finalized SORS questionnaire was administered to 280 students in six classes of the two secondary schools, assisted by the class teachers. I explained and discussed the procedures with the class teachers whose students were participants in this main study. The class teachers and I distributed the copies of the SORS questionnaire written in both English and Chinese translation (see Appendices 1 & 2) to the participants in their self-study period on the same day in February 2012. All the students were asked to write their ages, years of learning English and the English scores of their 2011 to 2012 end-of-term examination on the SORS questionnaires to collect the background information about the participants that was used to facilitate the data analysis. Then, students were informed of the intention and requirements of the research, and they were asked to answer the questionnaire seriously and honestly. Moreover, they were told that the investigation was not related to their teachers’ evaluation of their English

performance. There were no ‘right’ or ‘wrong’ responses to each item and they could take as much time as they needed to complete the survey. Most students were able to finish the questionnaire in 15 minutes. All the completed questionnaires were examined. After discarding 8 incomplete questionnaires, a total of 272 valid questionnaires were used for statistical analysis.

The MARSI questionnaire was completed three days later following the same procedures. The study involved data collection through two visits to the schools. The first visit lasted for one week while the second visit lasted three weeks and took place two weeks after the first visit. The questionnaires, SORS and MARSI, were collected on the first visit.

### **3.2.5 Quantitative data analysis procedures**

The data were analyzed using descriptive and inferential statistics, including means, standard deviations, variance, Paired-Samples T-Tests, a Factorial Multivariate Analysis of Variance (MANOVA), an Analysis of Variance (ANOVA) and Pearson’s Correlation Analysis. The Statistical Package for the Social Sciences (SPSS), version 20, was employed to run the all data analyses. In addition, reliability for all items in the three dimensions was reported as in

quantitative research the reliability is “essentially a synonym for consistency and replicability over time, over instruments or over groups of respondents” (Cohen, Manion, & Morrison, 2000, p. 117). Reliability was used to measure the internal consistency of SORS and MARSII for assessing the participants self-reported use of metacognitive strategies while reading English and Chinese texts.

Descriptive statistical analysis was conducted to obtain the mean and the standard deviation of each item and each of the three categories to indicate the general tendency of strategy use by all the participants in their L1 and L2 reading.

Paired-Samples T-Tests were used to compare mean scores the participants self-reported in the use of the SORS and MARSII. They were conducted to further test whether there were any significant differences between the use of metacognitive reading strategies by EFL junior secondary school students when reading English and Chinese.

MANOVA were used to determine if there were any overall significant differences between the levels of students’ language proficiency and their use of

metacognitive reading strategies. Meanwhile, ANOVA were employed to check what specific differences were statistically significant in each category (Global, Problem-solving and Support) among the high, intermediate and low proficiency group students. The independent variable was the level of language proficiency with three conditions — high, intermediate and low, based on the participants' scores on their previous semester's end-of-term examinations. There were three dependent variables: the three scores of the students' self-reported use in the three categories of metacognitive reading strategies: Global, Problem-solving and Support reading strategies.

The Pearson's Correlation Coefficient was also calculated to measure the relationship between the total scores of SORS and MARSII reported by the 272 Chinese junior secondary school students.

### **3.3 Qualitative Method**

#### **3.3.1 Participants**

Twelve of the 272 participants with different language proficiency levels were selected on class teachers' recommendation according to students' academic records and their verbal ability. All the twelve students' consent for



participating in the qualitative research were granted and they were also classified into three English proficiency groups, four high English proficiency students (S1, S2, S3, S4), four intermediate English proficiency students (S5, S6, S7, S8) and four low English proficiency students (S9, S10, S11, S12). The classification was based on the results of their 2011 to 2012 end-of-term English examination. It was also checked that Chinese proficiency as revealed in the end-of-term examination was quite compatible with their English proficiency. Each of the students participated in the stimulated recall session and a semi-structured interview. The age of the participants was between 13 and 14 years old, including both male and female students. They all speak Mandarin Chinese as their mother tongue and English is a foreign language to them. They had all learned English for more than five years. Pseudonyms were used to refer to the twelve students. The participants' background information in terms of their English and Chinese scores of 2011 to 2012 end-of-term English and Chinese examinations, years of learning English and time spent in reading English every day according to their self-report in semi-structured interviews are detailed as follows:

Table 10: Participants' Background Information

Student Number	Student Name	Gender	English Scores	Chinese Scores	Years of learning	Time spent in reading English
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					English	per day after class
<b>High proficiency students</b>						
S1	Xu	F	95	92	7 years	1.5 hours
S2	Guo	M	97	90	5 years	1 hour
S3	Ma	F	98	89	7 years	2 hours
S4	He	M	96	87	7 years	1 hour
<b>Intermediate proficiency students</b>						
S5	Liang	M	70	77	5 years	1 hour
S6	Zhang	F	73	70	5 years	2 hours
S7	Zhao	F	69	75	7 years	40 minutes
S8	Wei	F	75	76	7 years	20 minutes
<b>Low proficiency students</b>						
S9	Jin	M	49	54	5 years	15 minutes
S10	Cong	M	33	59	5 years	20 minutes
S11	Miao	M	39	50	5 years	10 minutes
S12	Qi	M	51	56	5 years	15 minutes

From Table 10, it can be seen that five students had been learning English for seven years from their first year in primary school while the other seven students had been studying five years from their third year in primary school. The average time which the students spent on reading English after class per day was 52.5 minutes; the shortest time was 15 minutes and the longest 2 hours. It can be seen that high proficiency students read English after class for at least one hour, while low proficiency students only read English for about 15

minutes.

### **3.3.2 Qualitative instruments**

#### **3.3.2.1 Stimulated recall**

Gass and Mackey (2000, p.1) defined stimulated recall as “one subset of a range of introspective methods that represent a means of eliciting data about thought processes involved in carrying out a task or activity”. As Dörnyei (2007, p.147) explained, introspection is to “observe internal processes, that is, what is going on in one’s consciousness, in much the same way as one can observe external real-world events”. Introspective methods usually imply two specific techniques: “think-aloud” and “stimulated recall”. The main difference between these two types of introspection lies in the timing: the think-aloud technique is applied real-time, concurrently with the examined task/process, whereas the stimulated recall happens after the task/process has been completed (Gass & Mackey, 2000). Gass and Mackey (2000) also indicated that stimulated recall does not require extensive participant training because simple instructions or a direct model are often enough. Stimulated recall, as suggested by researchers, allows participants to reflect immediately on what just occurred (Cao & Philp,

2006; Kang, 2005). In this study, stimulated recall was to determine what reading strategies the students applied in the process of performing an English reading task. It is also anticipated that successful personal strategies and experiences can be identified from the high proficiency students that could be used to guide low proficiency students into developing greater English reading.

The English reading task includes two English passages (an informative text and a narrative text) from their extracurricular exercises. The informative text consists of 153 words, followed by three multiple-choice exercises, the lexical density being 0.51. The narrative text consists of 220 words, followed by five close-ended questions, the lexical density being 0.57. The lexical density test was designed to show how easy or difficult a text is to read. The lexical density of a text attempts to measure the percentage of the content (lexical) words over the total number of words. Texts with a higher density rate are more difficult to understand.

### **3.3.2.2 Semi-structured interview**

According to Cohen et al. (2000), interview serves three purposes. First, it can be regarded as the main method for collecting direct purpose-related



information inside a person's mind (Tuckman, 1972). Second, it can be applied to test or propose hypotheses, and third, to explain variables and identify relationships. Results can be linked with other methods to explore unexpected outcomes, to validate other instruments, or to understand better the motivations of informants, and the reasons they attribute to their ways of responding (Kerlinger, 1970). However, the interview method also has its disadvantages, in that it is strongly influenced by the perceptions of the interviewer in terms of the participant being interviewed and the interviewer's personal opinion regarding the outcome of the study (Drew, Harman, & Hosp, 2008). Furthermore, interviewers can be subjective in posing and interpreting interview questions, whereas questionnaires can appear to be more objective.

Fontana and Frey (1994) suggested that "interviewing has a wide variety of forms and a multiplicity of uses" (p.361). The main criterion to select the best type of interview for a study is the degree of structure (Kvale, 1996). Cohen et al. (2000) suggest this criterion is connected with the research purpose. The more one wishes to obtain comparable information from different persons and locations, the more structured, standardized and quantitative an interview must be (Harris & Brown, 2010). Conversely, the more one hopes to gain unparalleled, non-standardized, and personalized data, the more unstructured

and open-ended an interview tends to be. Besides, in Denscombe's (2003) view, semi-structured interviews enable participants to "develop ideas and speak more widely on the issue raised by the researcher" (p.167).

Considering the above perspectives, semi-structured individual interviews seem to be more suitable for this study. To explore the findings of the Likert-scale questions of SORS and MARSII further, a semi-structured interview guided with 14 open-ended questions (see Appendix 3) was designed based on the pilot study and quantitative data results concerning the most frequently used metacognitive reading strategies for the purpose of developing the questionnaire results. The interview questions were open-ended to ensure neutrality, to avoid leading the participants, and to "minimize the imposition of predetermined responses when gathering data" (Patton, 1990, p.295).

The first three interview questions were designed to investigate students' experiences of learning and reading English in order to further situate the interpretation and appreciation of the high, intermediate and low proficiency students' stated reading strategy use within their learning contexts and experiences through their retrospective accounts. Questions No. 4 to 7 were designed to probe thoughts and experiences concretely about the students'

reading strategies use of “using background knowledge”, “previewing text before reading”, “guessing meaning of unknown words” and “translating from English to Chinese”, which were ranked as the frequently used strategies by all the participants according to the data results of the SORS questionnaires. Questions No. 8 and 9 were designed to investigate students’ attitudes towards using strategies in English reading and their difficulties and problems with English reading. A series of questions from Nos. 10 to 13 were all designed to gain students’ perceptions on English and Chinese reading and explore the impact of Chinese reading on their English reading. Question No. 14 was designed to investigate students’ ultimate goals of reading English.

By examining student narratives, it is hoped that stimulated recalls and semi-structured interviews with the chosen twelve students can further light on the self-reported results of SORS and MARSII as well as provide further information about the impact of Chinese reading strategy use on English reading strategy use.

### **3.3.3 Qualitative data collection procedures**

#### **3.3.3.1 Stage one: Stimulated recall**

After collecting the SORS and MARSİ questionnaires and completing the statistical analysis of these questionnaires, the stimulated recall and semi-structured interview sessions were conducted during the same investigation time.

The stimulated recall was conducted with each of the twelve chosen participants individually and administered prior to each of the semi-structured interviews. Firstly, each of the twelve chosen participants, including four high-proficiency students, four intermediate-proficiency students and four low-proficiency students, was asked to read two English passages and finish the eight follow-up exercises at their own pace. Most of them finished the reading task within 15 minutes and only two participants finished it in 25 to 30 minutes. They were allowed to consult an English dictionary. Then, they were asked to tell the main idea of the two texts and recall their techniques used to comprehend the passages after finishing the reading exercises. The entire process was videotaped.

Each of the students was then asked to introspect about their mental processes while carrying out the reading tasks by reviewing the videotape. Firstly, the



participant was invited to summarize the main idea of the reading texts, and then they were asked to stop the videotape any time and comment on something that made them confused or any difficulties they experienced. I also stopped the videotape if there was something I would like to ask him/her to comment on what he/she was thinking about and what was going on at that moment.

The participants were also asked how they handled the difficulties or something that could not be understood encountered in reading by asking questions such as “I can see you were shaking your head. Tell me what you are thinking at the moment?” or “Why did you put your finger on that word?” (Gass & Mackey, 2000, p. 43). If the answer was not clear enough, I would ask the participant to clarify the matter by saying, “Please tell me more about that” or “Why did you do that?”

Finally, they were asked to recall how they arrived at the answer of each reading question. I asked them questions like: “Why did you choose this answer?” or “Why didn’t you choose this?” or “Do you remember thinking anything when you circled A, B, C, or D?” or “Can you tell me what you thought when you wrote those words?” The stimulated recall interviews lasted approximately 20 minutes each.

### **3.3.3.2 Stage two: Semi-structured interview**

Semi-structured interviews were conducted following the stimulated recall session. In open-ended interview questions (see Appendix 3), the descriptive ‘what’ questions should be asked before more probing questions such as ‘why’ or ‘how’ questions (Patton, 2002). First, general interview questions about personal information, such as the participant names, the English and Chinese scores of their last end-of-term examinations as well as their experiences of English reading and learning were asked in order to establish rapport between students and researcher. Next, a brief statement of the study purpose was conveyed to the participants as opening declaration (Patton, 2002). Then, the remaining interview questions about their reading strategy use in English reading and attitudes towards using strategies in reading as well as the impact of Chinese reading on English reading were asked. (see appendix 3)

All the stimulated recalls and semi-structured interviews were audio-recorded and conducted in Chinese. Using the participants’ native language helped them express themselves freely and also enabled me to interpret their messages more accurately.

### 3.3.4 Qualitative data analysis procedures

The data analysis was characterized by a gradually evolving process in which the data set, relevant literature, coded categories, and research questions were constantly evaluated, re-evaluated, and reformulated. The data were reviewed repeatedly until themes and patterns that potentially answered the research questions emerged (Strauss & Corbin 1998). By replaying the audio, all the data from the stimulated recalls and semi-structured interviews were transcribed. I translated all the interview transcripts into English. Then a Chinese teacher who was teaching English in a university in Beijing, Mainland China, helped me check the accuracy of the translation by listening to the recordings.

To employ verbatim transcription or not is a dilemma for qualitative researchers. There is a move from transcribing the audio recordings word by word to “a process that is sensitive to context, reflexive and constructivist” (Lapadat, 2000, p.210). Witcher (2010) supports Lapadat’s perspective and suggests the quality and trustworthiness of transcription is expressed in how closely the transcript captures the recorded utterances. Also, Poland (1995, 2001) stresses the importance of minimizing not clearly spoken and recorded written text within

transcripts. In this study, only words such as ‘eh’, ‘ma’, ‘oh’ were deleted in the transcripts.

All the interview transcripts were read through carefully at least once to have an overall understanding of the major issues and ideas expressed. Then, the transcripts were coded to identify categories of individual reading strategies in connection with the research questions.

The research software NVivo was used for the first stage of the qualitative analysis as an analytical tool for categorising and coding data, which allowed for a range of possibilities in interpreting the data.

### **3.4 Ethical Issues**

Authors report many guidelines to ethical issues in research studies (Creswell, 2008; Patton, 2002; Punch, 1998). Considering their perspectives, the first vital step is not to disclose any information that will harm the participants. In my current study, informed consent for accessing the research setting and the participants was obtained from the two secondary schools in Taiyuan, Shanxi province. Then, to protect the participants, anonymity and pseudonyms were

maintained. Meanwhile, the research purposes were revealed to the participants in order to obtain their support. I kept these data including interview videos, recordings and transcriptions in a safe place.



## CHAPTER 4

### QUANTITATIVE ANALYSIS

This chapter examines the quantitative data collected on the self-reported metacognitive strategies used by Chinese EFL junior secondary school students when reading English and Chinese. Descriptive statistical procedures and significance tests were employed to analyze the data. This chapter is organized as follows: (1) description of the sample size; (2) the reliability of the SORS and MARSI; (3) reporting of both the descriptive statistical information and inferential statistical tests. These three sections serve to answer the first and second research question.

#### 4.1 Description of the Sample Size

The 272 participants from two junior secondary schools in Taiyuan, Shanxi Province, were divided into three proficiency levels in both English and Chinese. For the English proficiency groups, the high English proficiency group consisted of 113 students, the intermediate English proficiency group had 86 students and the low English proficiency group had 73 students. As for the Chinese proficiency groups, the high English proficiency group consisted of 85



students, the intermediate English proficiency group had 149 students and the low English proficiency group consisted of 38 students. The classification was based on the results of their 2011 to 2012 end-of-term English and Chinese examinations designed by Taiyuan municipal education commission. The scores of the high English and Chinese proficiency groups ranged from 80 to 100, those of the intermediate from 60 to 79, and those of the low English and Chinese proficiency groups from 31 to 59. Their average score for the English examination was 70.56, while the average score for their Chinese examination was 71.62 (see Table 7).

#### **4.2 The Reliability of the SORS and MARS**

Reliability coefficients (as determined by Cronbach's alpha) were used to measure the internal consistency of SORS and MARS questionnaires for assessing the participants' self-reported use of metacognitive reading strategies when reading English and Chinese texts. As shown in Table 11, the internal consistencies of the SORS and MARS for the main study were proven to be acceptable. The reliability coefficient (Cronbach's alpha) for the overall scale of the SORS was .937. The internal reliability coefficients for the three strategy categories were as follows: GLOB ( $\alpha = .865$ ), PROB ( $\alpha = .842$ ), and SUP ( $\alpha$



= .791). The reliability coefficient for the overall scale of the MARS I was .934.

The internal reliability coefficients for the three strategy categories were as follows: GLOB ( $\alpha = .836$ ), PROB ( $\alpha = .827$ ), and SUP ( $\alpha = .803$ ).

Table 11: Cronbach’s Alpha Values of the SORS and MARS I

Category <sup>a</sup>	Cronbach’s Alpha	Cronbach’s Alpha
	Value for SORS <sup>a</sup>	Value for MARS I <sup>a</sup>
Globe Reading Strategies <sup>a</sup>	.865 <sup>a</sup>	.836 <sup>a</sup>
Problem-solving Strategies <sup>a</sup>	.842 <sup>a</sup>	.827 <sup>a</sup>
Support Reading Strategies <sup>a</sup>	.791 <sup>a</sup>	.803 <sup>a</sup>
Overall Reading Strategies <sup>a</sup>	.937 <sup>a</sup>	.934 <sup>a</sup>

The results indicated that the SORS and MARS I were reasonably reliable measures of students’ metacognitive awareness of English and Chinese reading strategies.

### 4.3 Results of Research Question One

*Research Question One: What metacognitive strategies do Chinese junior secondary students use while reading L1 and L2 texts?*

The first research question was aimed at identifying the metacognitive reading strategies in their English and Chinese reading reported to be used by Chinese



junior secondary school students who involved in this study. The data for this research question came from the SORS and MARSİ responses.

#### **4.3.1 Chinese junior secondary school students' reading strategy use in the SORS**

For the first research question, in examining students' metacognitive strategy use when reading English in terms of the Likert scale that ranges from 1 to 5, the study employed three levels of use, as suggested by Oxford and Burry-Stock (1995) for strategy use in language learning, that is, *high* (mean of 3.5 or higher), *moderate* (mean of 2.5 to 3.4), and *low* (mean of 2.4 or lower). In the main study, the 272 Chinese junior secondary school students reported mean and standard deviation for overall metacognitive reading strategy use of the SORS inventory was  $M=3.29$ ,  $SD=.77$  when they are reading English texts. The results showed that students on the whole reported using the metacognitive strategies when reading English at a moderate frequency level. No strategy was reported at the low-usage level ( $M \leq 2.4$ ). As far as the three categories of strategies are concerned, students still showed a moderate usage, with problem-solving strategies ( $M=3.42$ ,  $SD=.89$ ) as their prime choice, followed by global strategies ( $M=3.29$ ,  $SD=.80$ ) and support strategies ( $M=3.19$ ,  $SD=.81$ ) (see Table 12).

Table 12: The Self-reported Use of Reading Strategy by the 272 Participants When Reading in English

Category	Strategy	Item No.	Mean	S.D.
GLOB 1	Setting purpose for reading	1	3.26	1.38
GLOB 2	Using background knowledge	3	3.64	1.23
GLOB 3	Previewing text before reading	4	3.59	1.32
GLOB 4	Checking how text content fits purpose	6	2.99	1.25
GLOB 5	Noting text characteristics	8	3.24	1.35
GLOB 6	Determining what to read closely	12	2.96	1.32
GLOB 7	Using text features	15	3.31	1.37
GLOB 8	Using context clues	17	3.57	1.16
GLOB 9	Using typographical aids	20	3.18	1.34
GLOB10	Analyzing and evaluating the text	21	2.98	1.19
GLOB 11	Checking understanding	23	3.24	1.26
GLOB12	Predicting or guessing text meaning	24	3.50	1.28
GLOB13	Confirming predictions	27	3.27	1.25
<i>Overall</i>			3.29	.80
PROB 1	Reading slowly and carefully	7	3.48	1.29
PROB 2	Trying to stay focused on reading	9	3.37	1.30
PROB 3	Adjusting reading rate	11	3.32	1.28
PROB 4	Paying close attention to reading	14	3.55	1.33
PROB 5	Pausing and thinking about thinking	16	3.35	1.21
PROB 6	Visualizing information	19	3.32	1.33
PROB 7	Re-reading for better understanding	25	3.48	1.25
PROB 8	Guessing meaning of unknown words	28	3.52	1.29

<i>Overall</i>			3.42	.89
SUP 1	Taking notes while reading	2	2.89	1.28
SUP 2	Reading aloud for better understanding	5	2.73	1.37
SUP 3	Underlying information in the text	10	3.28	1.34
SUP 4	Using reference materials	13	3.23	1.40
SUP 5	Paraphrasing for better understanding	18	3.39	1.25
SUP 6	Going back and forth in the text	22	2.97	1.29
SUP 7	Asking oneself questions	26	3.22	1.27
SUP 8	Translating from English to Chinese	29	3.52	1.30
SUP 9	Thinking in both languages when reading	30	3.43	1.35
<i>Overall</i>			3.19	.81

The top five strategies that were most favoured by the students were mainly under the GLOB and PROB categories, while the bottom five mainly went into the SUP category. Within the category of GLOB, “using background knowledge” (GLOB) ( $M=3.64$ ,  $SD=1.23$ ) was the overall metacognitive strategy which the participants employed most frequently, while “reading aloud for better understanding” (SUP) ( $M=2.73$ ,  $SD=1.37$ ) was the least used one.

Table 13 and

Table 14 present the five most frequently and least frequently employed reading strategies reported by the students.

Table 13: Self-Reported Reading Strategies Used Most Frequently by Participants When Reading in English

Rank <sup>a</sup>	Strategy <sup>a</sup>	M <sup>a</sup>	S.D. <sup>a</sup>
TOP 1 <sup>a</sup>	Using background knowledge (GLOB) <sup>a</sup>	3.64 <sup>a</sup>	1.23 <sup>a</sup>
TOP 2 <sup>a</sup>	Previewing text before reading (GLOB) <sup>a</sup>	3.59 <sup>a</sup>	1.32 <sup>a</sup>
TOP 3 <sup>a</sup>	Using context clues (GLOB) <sup>a</sup>	3.57 <sup>a</sup>	1.16 <sup>a</sup>
TOP 4 <sup>a</sup>	Paying close attention to reading (PROB) <sup>a</sup>	3.55 <sup>a</sup>	1.33 <sup>a</sup>
TOP 5 <sup>a</sup>	Translating from English to Chinese (SUP) <sup>a</sup>	3.52 <sup>a</sup>	1.30 <sup>a</sup>
TOP 5 <sup>a</sup>	Guessing meaning of unknown words (PROB) <sup>a</sup>	3.52 <sup>a</sup>	1.29 <sup>a</sup>

Table 14: Self-Reported Reading Strategies Used Least Frequently by Participants When Reading in English

Rank <sup>a</sup>	Strategy <sup>a</sup>	M <sup>a</sup>	S.D. <sup>a</sup>
Bottom 1 <sup>a</sup>	Reading aloud for better understanding (SUP) <sup>a</sup>	2.73 <sup>a</sup>	1.37 <sup>a</sup>
Bottom 2 <sup>a</sup>	Taking notes while reading (SUP) <sup>a</sup>	2.89 <sup>a</sup>	1.28 <sup>a</sup>
Bottom 3 <sup>a</sup>	Determining what to read closely (GLOB) <sup>a</sup>	2.96 <sup>a</sup>	1.32 <sup>a</sup>
Bottom 4 <sup>a</sup>	Going back and forth in the text (SUP) <sup>a</sup>	2.97 <sup>a</sup>	1.29 <sup>a</sup>
Bottom 5 <sup>a</sup>	Analyzing and evaluating the text (GLOB) <sup>a</sup>	2.98 <sup>a</sup>	1.19 <sup>a</sup>

4.3.2 Chinese junior secondary school students’ reading strategy use in the MARSI

The 272 Chinese junior secondary school students’ reported mean and standard deviation for overall metacognitive reading strategy use of the MARSI was

$M=3.37$ ,  $SD=.74$  when reading Chinese texts. The results showed that students on the whole reported using the metacognitive strategies when reading Chinese at a moderate frequency level. No strategy was reported at the low-usage level ( $M \leq 2.4$ ). As far as the three categories of strategies are concerned, students showed a moderate to high usage, with problem-solving strategies ( $M=3.53$ ,  $SD=.83$ ) being the category used most frequently by the students, followed by global category ( $M=3.42$ ,  $SD=.77$ ) and support category ( $M=3.14$ ,  $SD=.81$ ) (see Table 15).

Table 15: The Self-reported Use of Reading Strategies by the 272 Participants When Reading in Chinese

Category	Strategy	Item No	Mean	S.D.
GLOB 1	Setting purpose for reading	1	3.55	1.28
GLOB 2	Using background knowledge	3	3.79	1.19
GLOB 3	Previewing text before reading	4	3.72	1.26
GLOB 4	Checking how text content fits purpose	7	3.17	1.20
GLOB 5	Noting text characteristics	10	3.52	1.25
GLOB 6	Determining what to read closely	14	3.09	1.32
GLOB 7	Using text features	17	3.48	1.26
GLOB 8	Using context clues	19	3.51	1.23
GLOB 9	Using typographical aids	22	3.35	1.32
GLOB10	Analyzing and evaluating the text	23	3.12	1.19
GLOB11	Checking understanding	25	3.42	1.25
GLOB12	Guessing text meaning	26	3.47	1.23

GLOB13	Confirming predictions	29	3.34	1.25
<i>Overall</i>			3.42	.77
PROB 1	Reading slowly and carefully	8	3.51	1.22
PROB 2	Trying to stay focused on reading	11	3.53	1.24
PROB 3	Adjusting reading rate	13	3.45	1.25
PROB 4	Paying close attention to reading	16	3.62	1.25
PROB 5	Pausing and thinking about thinking	18	3.42	1.17
PROB 6	Visualizing information	21	3.63	1.25
PROB 7	Re-reading for better understanding	27	3.51	1.25
PROB 8	Guessing meaning of unknown words	30	3.57	1.28
<i>Overall</i>			3.53	.83
SUP 1	Taking notes while reading	2	2.97	1.26
SUP 2	Reading aloud for better understanding	5	2.82	1.36
SUP 3	Summarizing and reflecting important information	6	3.23	1.22
SUP 4	Discussing with others	9	3.12	1.27
SUP 5	Underlying information in the text	12	3.10	1.37
SUP 6	Using reference materials	15	3.27	1.35
SUP 7	Paraphrasing for better understanding	20	3.30	1.32
SUP 8	Going back and forth in the text	24	3.15	1.26
SUP 9	Asking oneself questions	28	3.31	1.34
<i>Overall</i>			3.14	.81

The top five strategies reported by the students were mainly under the PROB

and GLOB categories, while the bottom five mainly went into the SUP category. Within the category of global, “using background knowledge” (GLOB) ( $M=3.79$ ,  $SD=.19$ ), is the metacognitive reading strategy which participants employed most frequently; however, “reading aloud for better understanding” (SUP) ( $M=2.82$ ,  $SD=.36$ ) was the least used one. Table 16 and Table 17 present the Top Five most frequently and Bottom Five least frequently employed reading strategies of the students.

Table 16: Self-Reported Reading Strategies Used Most Frequently by Participants When Reading in Chinese

Rank↵	Strategy↵	M↵	S.D.↵
TOP 1↵	Using background knowledge (GLOB) ↵	3.79 ↵	1.19 ↵
TOP 2↵	Previewing text before reading (GLOB)↵	3.72 ↵	1.26 ↵
TOP 3↵	Visualizing information (PROB) ↵	3.63 ↵	1.25↵
TOP 4↵	Paying close attention to reading (PROB) ↵	3.62↵	1.25 ↵
TOP 5↵	Guessing meaning of unknown words (PROB)↵	3.57 ↵	1.28↵

Table 17: Self-Reported Reading Strategies Used Least Frequently by Participants When Reading in Chinese

Rank↵	Strategy↵	M↵	S.D.↵
Bottom 1↵	Reading aloud for better understanding (SUP) ↵	2.82 ↵	1.36↵
Bottom 2↵	Taking notes while reading (SUP)↵	2.97 ↵	1.26 ↵
Bottom 3↵	Determining what to read closely (GLOB) ↵	3.09↵	1.32 ↵
Bottom 4↵	Underlying information in the text (SUP)↵	3.10 ↵	1.37 ↵
Bottom 5↵	Discussing with others (SUP)↵	3.12↵	1.27↵

With respect to the three categories of the SORS and MARSI, problem-solving reading strategies was the most frequently used category, followed by the global and support reading category when students are reading English and Chinese texts.

As we can see from the above analysis, “using background knowledge” (GLOB) and “previewing text before reading” (GLOB) within the global reading category were ranked the top two most frequently used strategies by all the participants when they are reading in both English and Chinese. However, “reading aloud for better understanding” (SUP), “taking notes while reading” (SUP) and “determining what to read closely” (GLOB) in support and global reading categories were reported as the least used three strategies when reading in English and Chinese. Among the top five most frequently used strategies for English and Chinese, three were unique to

Table 14 and

Table 17: using context clues, translating from English to Chinese for English, and visualizing information. When reading in English, students rely on background knowledge (GLOB), context clues and translating English into their native language (SUP), as the way for better understanding the text content.



Compared with L2 reading strategy use, the students more frequently use visualization or picture information to help them remember the information and important points when reading in L1. The results seem to indicate that students were flexible in their English and Chinese strategy selection.

Furthermore, paired-samples t-tests was conducted to determine if there were any significant differences between the overall mean scores the students' self-reported on SORS and MARSİ and the use of the reading strategies in each category when reading English and Chinese texts.

The mean and standard deviation reported use of the metacognitive reading strategies for overall metacognitive reading strategy use of the SORS and MARSİ were  $M=3.29$ ,  $SD=.77$  and  $M=3.37$ ,  $SD=.74$  when reading English and Chinese texts respectively. The difference in the use of the overall reading strategies between reading English and reading Chinese was not statistically significant using a Paired-Samples T-Test:  $t(271) = -2.63$ ;  $p > .05$ . That is to say, the reading strategies employed by the students when reading English and Chinese texts were the same in general although the overall mean scores of the reading strategy use when reading Chinese was a little higher than when reading English. There is then no statistically significant difference in the use of

PROB and SUP categories when reading English and Chinese texts. For the PROB category,  $t(271) = -2.88$ ;  $p > .05$ , and for the SUP Strategy category,  $t(271) = 1.21$ ;  $p > .05$ . However, the difference in the use of the GLOB category was statistically significant in favour of Chinese versus English texts,  $t(271) = -4.20$ ;  $p < .05$ . That is to say, students used more GLOB reading strategies in reading Chinese than in English. GLOB reading strategies focused on planned techniques by which learners monitor and manage their reading (Mokhtari & Reichard, 2002). In other words, students used more top-down comprehension strategies with Chinese texts than with English texts. This finding could be explained by the differentiation of the students' L1 and L2 proficiency. As Chinese is their mother-tongue, students have more confidence in reading the language and can seek strategies that improve the efficiency and effectiveness of their reading — in this regard, GLOB reading strategies. For example, a few unknown words in the Chinese texts would not hinder their understanding and interpretation of the whole text as they use more GLOB reading strategies, such as using context clues or background knowledge.

#### 4.4 Results of Research Question Two



*Research Question Two: How does students' language proficiency affect the use of metacognitive strategies in their L1 and L2 reading?*

The second research question focused on the relationship between students with different levels of language proficiency and their use of metacognitive strategies.

#### **4.4.1 Reading strategies used by different proficiency groups in the SORS**

To find the relationship between students' levels of English proficiency and their use of reading strategies, as seen in Table 10, the use of the different reading strategies between the high, intermediate, and low English proficiency students are presented in Table 18. The scores range from 80 to 100 for the 113 high English proficiency students and their average score is 89.16. The scores range from 60 to 79 in the 86 intermediate-proficiency students and their average score is 70.08. The scores range from 31 to 59 for the 73 low-proficiency students and the mean is 42.33 in their 2011-2012 end-of-term English examination.

The means and standard deviations for overall metacognitive reading strategy use in all categories was  $M=3.75$ ,  $SD=.57$  for the 113 high English proficiency

students;  $M=3.22$ ,  $SD=.58$  for the 86 intermediate English proficiency students; and  $M=2.67$ ,  $SD=.78$  for the 73 low English proficiency students.

Table 18: Means and Standard Deviations for High, Intermediate, and Low English Proficiency Group Students When Reading in English

Level of Proficiency <sup>a</sup>	N <sup>a</sup>	Mean <sup>a</sup>	Std. Deviation <sup>a</sup>	Std. Error <sup>a</sup>
High-proficiency group <sup>a</sup>	113 <sup>a</sup>	3.7475 <sup>a</sup>	.57186 <sup>a</sup>	.05380 <sup>a</sup>
Intermediate-proficiency group <sup>a</sup>	86 <sup>a</sup>	3.2244 <sup>a</sup>	.58221 <sup>a</sup>	.06278 <sup>a</sup>
Low-proficiency group <sup>a</sup>	73 <sup>a</sup>	2.6671 <sup>a</sup>	.77775 <sup>a</sup>	.09103 <sup>a</sup>
Overall <sup>a</sup>	272 <sup>a</sup>	3.2922 <sup>a</sup>	.77157 <sup>a</sup>	.04678 <sup>a</sup>

With respect to the three SORS categories: problem-solving reading strategies was the category that high-, intermediate-, and low-proficiency students used most frequently (high-proficiency group:  $M=3.93$ , intermediate-proficiency group:  $M=3.33$  and low-proficiency group:  $M=2.73$ ), while support reading strategies was the least used category by all high-, intermediate-, and low-proficiency group students (high-proficiency group:  $M=3.59$ , intermediate-proficiency group:  $M=3.13$  and low-proficiency group:  $M=2.63$ ) as shown in Table 19.

Table 19: Means for the High, Intermediate, and Low Proficiency EFL Chinese Junior Secondary School Students' Perceived Use of Reading Strategies When Reading in English

Category	Strategy	Low	Intermediate	High
		(N=113)	(N=86)	(N=73)
		Mean	Mean	Mean
GLOB 1	Setting purpose for reading	2.63	3.16	3.73
GLOB 2	Using background knowledge	2.96	3.49	4.20
GLOB 3	Previewing text before reading	2.85	3.51	4.12
GLOB 4	Checking how text content fits purpose	2.45	2.95	3.34
GLOB 5	Noting text characteristics	2.64	3.12	3.71
GLOB 6	Determining what to read closely	2.56	3.02	3.16
GLOB 7	Using text features	2.48	3.37	3.80
GLOB 8	Using context clues	3.21	3.37	3.96
GLOB 9	Using typographical aids	2.52	3.09	3.68
GLOB 10	Analyzing and evaluating the text	2.53	2.98	3.27
GLOB 11	Checking understanding	2.49	3.08	3.85



GLOB 12	Predicting or guessing text meaning	2.62	3.36	4.23
GLOB 13	Confirming predictions	2.55	3.37	3.66
<i>Overall</i>		2.65	3.22	3.75
PROB 1	Reading slowly and carefully	2.77	3.33	4.05
PROB 2	Trying to stay focused on reading	2.60	3.34	3.88
PROB 3	Adjusting reading rate	2.92	3.10	3.73
PROB 4	Paying close attention to reading	2.79	3.40	4.15
PROB 5	Pausing and thinking about thinking	2.75	3.36	3.73
PROB 6	Visualizing information	2.73	3.26	3.74
PROB 7	Re-reading for better understanding	2.73	3.37	4.05
PROB 8	Guessing meaning of unknown words	2.58	3.50	4.10
<i>Overall</i>		2.73	3.33	3.93
SUP 1	Taking notes while reading	2.40	2.88	3.22



SUP 2	Reading aloud for better understanding	2.25	2.72	3.05
SUP 3	Underlying information in the text	2.64	3.30	3.67
SUP 4	Using reference materials	2.66	3.00	3.78
SUP 5	Paraphrasing for better understanding	2.78	3.38	3.80
SUP 6	Going back and forth in the text	2.56	2.99	3.23
SUP 7	Asking oneself questions	2.77	3.29	3.45
SUP 8	Translating from English to Chinese	2.75	3.51	4.03
SUP 9	Thinking in both languages when reading	2.85	3.12	4.04
<i>Overall</i>		<i>2.63</i>	<i>3.13</i>	<i>3.59</i>

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Table 20 listed the five most frequently used metacognitive strategies across the students' English reading proficiency levels. As can be seen from Table 20, among the category of global, problem-solving and support metacognitive reading strategies, "predicting or guessing text meaning" (GLOB 12) was ranked the most frequently used strategy by the high-proficiency group, while "using context clues" (GLOB 8) was ranked the most frequently used strategy by the low-proficiency group. "Previewing text before reading" (GLOB 3) and "translating from English to Chinese" (SUP 8) were the reading strategies used most by the intermediate proficiency group. "Using background knowledge" (GLOB 2) and "previewing text before reading" (GLOB 3) were also listed as their most commonly used strategies by all high, intermediate, and low proficiency groups. In addition, "guessing meaning of unknown words" (PROB 8) and "paying close attention to reading" (PROB 4) were ranked as the top five strategies by both high- and intermediate proficiency students, while only the low proficiency group reported "adjusting reading rate" (PROB 3) and "thinking in both languages when reading" (SUP 9) as their commonly used strategies (see Table 20).



Table 20: The Most-used Reading Strategies by High, Intermediate, and Low Proficiency Groups When Reading in English

Low-proficiency Group <sup>a</sup> Top 5 Used Strategies <sup>a</sup>	Intermediate-proficiency Group <sup>a</sup> Top 5 Used Strategies <sup>a</sup>	High-proficiency Group <sup>a</sup> Top 5 Used Strategies <sup>a</sup>
1. Using context clues <sup>a</sup> (GLOB 8, $M=3.21$ ) <sup>a</sup>	<i>Previewing text before reading<sup>a</sup></i> (GLOB 3, $M=3.51$ ) <sup>a</sup>	Predicting or guessing text meaning <sup>a</sup> (GLOB 12, $M=4.23$ ) <sup>a</sup>
2. <i>Using background knowledge<sup>a*</sup></i> (GLOB 2, $M=2.96$ ) <sup>a</sup>	Translating from English to Chinese <sup>a</sup> (SUP 8, $M=3.51$ ) <sup>a</sup>	<i>Using background knowledge<sup>a</sup></i> (GLOB 2, $M=4.20$ ) <sup>a</sup>
3. Adjusting reading rate <sup>a</sup> (PROB 3, $M=2.92$ ) <sup>a</sup>	<i>Guessing meaning of unknown words<sup>a</sup></i> (PROB 8, $M=3.50$ ) <sup>a</sup>	<i>Paying close attention to reading<sup>a</sup></i> (PROB 4, $M=4.15$ ) <sup>a</sup>
4. <i>Previewing text before reading<sup>a</sup></i> (GLOB 3, $M=2.85$ ) <sup>a</sup>	<i>Using background knowledge<sup>a</sup></i> (GLOB 2, $M=3.49$ ) <sup>a</sup>	<i>Previewing text before reading<sup>a</sup></i> (GLOB 3, $M=4.12$ ) <sup>a</sup>
5. Thinking in both languages when reading <sup>a</sup> (SUP 9, $M=2.85$ ) <sup>a</sup>	<i>Paying close attention to reading<sup>a</sup></i> (PROB 4, $M=3.40$ ) <sup>a</sup>	<i>Guessing meaning of unknown words<sup>a</sup></i> (PROB 8, $M=4.10$ ) <sup>a</sup>

\* The strategies marked in italics are shared by different proficiency groups.

To sum up, the results indicated that high and intermediate proficiency groups used similar most-used metacognitive reading strategies, which is quite different from low proficiency group. “Using context clues”, “adjusting reading rate” and “thinking in both languages when reading” were only employed by low proficiency students as their top five strategies. It may indicate that they use alternative ways to facilitate understanding and speed up their reading when they encounter reading difficulties. On the other hand, high and intermediate proficiency students try to solve the reading problems by using PROB reading strategies, such as “guessing meaning of unknown words” and “paying close attention to reading”. All these top five reading strategies would be further identified in twelve chosen students’ stimulated recall and semi-structured interview session and analyzed qualitatively in the next chapter.

#### **4.4.2 Students’ reading strategy use and their EFL achievements in the SORS**

To answer the second research question (“What is the relationship between students’ language proficiency and the use of metacognitive strategies in their English reading?”), a Factorial Multivariate Analysis of Variance (MANOVA) was conducted to determine if there were any significant differences between the levels of students’ English proficiency and their use of reading strategies in

each category. The dependent variables were the three subcategories of the SORS (global, problem-solving, and support reading strategies) and the independent variable was the level of participants' English proficiency (low, intermediate and high). MANOVA results indicated that the reading strategies reported being used by the three levels of English proficiency groups were significantly different (Wilks' Lambda = .661,  $F(6, 534) = 20.503, p < .001$ ) (See Table 21). This means that the different levels of English proficiency groups were significantly different in terms of using metacognitive strategies overall when reading English texts.

Table 21: Global, Problem-solving, and Support Metacognitive Reading Strategies Used by High, Intermediate, and Low English Proficiency Groups

Effect <sup>a</sup>	Wilks' Lambda <sup>a</sup>	F <sup>a</sup>	Hypothesis <sup>a</sup>	Error <sup>a</sup>	P <sup>a</sup>
	Value <sup>a</sup>		df <sup>a</sup>	df <sup>a</sup>	
Intercept <sup>a</sup>	.038 <sup>a</sup>	2234.053 <sup>a</sup>	3.000 <sup>a</sup>	267.000 <sup>a</sup>	.000 <sup>a</sup>
Group <sup>a</sup>	.661 <sup>a</sup>	20.503 <sup>a</sup>	6.000 <sup>a</sup>	534.000 <sup>a</sup>	.000 <sup>a</sup>

A series of ANOVA tests revealed the exact relations between the three levels of English proficiency groups on each dependent variable, metacognitive reading strategies, and the independent variable of the level of English reading proficiency. The multivariate  $\eta^2$  (eta squared) was used to explain effect size (see Table 22). The  $p$  values of the participants' self-reported strategy responses

on the GLOB, PROB and SUP reading strategies were all significant,  $F(2, 269) = 61.23, p < .001$ , partial  $\eta^2 = .313$ ,  $F(2, 269) = 59.03, p < .001$ , partial  $\eta^2 = .305$ ,  $F(2, 269) = 40.86, p < .001$ , partial  $\eta^2 = .233$ , respectively. Partial  $\eta^2$  means the effect size of the statistical tests. According to Cohen and Cohen (1975), the criterion for interpreting  $\eta^2$  is that  $< .06$  is small,  $.06 \leq \eta^2 < .15$  is medium, and  $\eta^2 > .15$  is large. The results of the partial  $\eta^2$  on the GLOB, PROB and SUP reading strategies all indicated a large effect.

As can be seen, there was a statistically significant difference between the levels of students' English reading proficiency and their use of reading strategies in the GLOB, PROB and SUP categories. In other words, the high-proficiency group outperformed the intermediate group and the low-proficiency group in the three categories of reading strategies. Higher frequency on the usage of metacognitive strategies while reading English was reported among students at the higher proficiency level than those at the lower proficiency level.

Table 22: ANOVA Tests of the Effects of the Global, Problem-solving, and Support Metacognitive Reading Strategies Used by High, Intermediate, and Low English Proficiency Groups

Source <sup>a</sup>	Dependent Variable <sup>a</sup>	Sum of Squares <sup>a</sup>	df <sup>a</sup>	Mean Square <sup>a</sup>	F <sup>a</sup>	P <sup>a</sup>	Partial Eta Squared <sup>a</sup>
Group <sup>a</sup>	GLOB <sup>a</sup>	53.565 <sup>a</sup>	2 <sup>a</sup>	26.783 <sup>a</sup>	61.232 <sup>a</sup>	.000 <sup>a</sup>	.313 <sup>a</sup>
	PROB <sup>a</sup>	64.696 <sup>a</sup>	2 <sup>a</sup>	32.348 <sup>a</sup>	59.031 <sup>a</sup>	.000 <sup>a</sup>	.305 <sup>a</sup>
	SUP <sup>a</sup>	40.915 <sup>a</sup>	2 <sup>a</sup>	20.457 <sup>a</sup>	40.864 <sup>a</sup>	.000 <sup>a</sup>	.233 <sup>a</sup>

4.4.3 Reading strategies used by different proficiency groups in the MARSI

To find the relationship between students’ levels of Chinese proficiency and their use of metacognitive reading strategies, the use of the differences between the high, intermediate and low Chinese proficiency students should be observed. The scores range from 80 to 100 for the 85 high Chinese proficiency students and their average score is 84.18. The scores range from 60 to 79 for the 149 intermediate-proficiency students and their average score is 69.94. Meanwhile, the scores range from 37 to 59 for the 38 low-proficiency students and the mean is 50.09 in their 2011-2012 end-of-term Chinese examination.

The means and standard deviations for overall metacognitive reading strategy use in all categories was  $M=3.75$ ,  $SD=.56$  for the 85 high Chinese proficiency

students;  $M=3.34$ ,  $SD=.67$  for the 149 intermediate Chinese proficiency students; and  $M=2.64$ ,  $SD=.77$  for the 38 low Chinese proficiency students.

Table 23: Means and Standard Deviations for High, Intermediate, and Low Chinese Proficiency Groups When Reading in Chinese

Level of Proficiency <sup>a</sup>	N <sup>a</sup>	Mean <sup>a</sup>	Std. Deviation <sup>a</sup>	Std. Error <sup>a</sup>
High-proficiency group <sup>a</sup>	85 <sup>a</sup>	3.7498 <sup>a</sup>	.55460 <sup>a</sup>	.06015 <sup>a</sup>
Intermediate-proficiency group <sup>a</sup>	149 <sup>a</sup>	3.3358 <sup>a</sup>	.67410 <sup>a</sup>	.05522 <sup>a</sup>
Low-proficiency group <sup>a</sup>	38 <sup>a</sup>	2.6386 <sup>a</sup>	.76733 <sup>a</sup>	.12448 <sup>a</sup>
Overall <sup>a</sup>	272 <sup>a</sup>	3.3678 <sup>a</sup>	.73810 <sup>a</sup>	.04475 <sup>a</sup>

With respect to the three MARSIs categories, problem-solving reading strategies was the category that among high-, intermediate-, and low-proficiency students was used most frequently (high-proficiency group:  $M=4.05$ , intermediate-proficiency group:  $M=3.44$  and low-proficiency group:  $M=2.71$ ), while support reading strategies was the least used category by all high-, intermediate- and low-proficiency group students (high-proficiency group:  $M=3.37$ , intermediate-proficiency group:  $M=3.16$  and low-proficiency group:  $M=2.57$ ) as shown in Table 24.

Table 24: Means for the High, Intermediate, and Low Proficiency Chinese Junior Secondary School Students' Perceived Use of Reading Strategies When Reading in Chinese

Category	Strategy	Low	Intermediate	High
		(N=38)	(N=149)	(N=85)
		Mean	Mean	Mean
GLOB 1	Setting purpose for reading	2.71	3.60	3.84
GLOB 2	Using background knowledge	2.87	3.72	4.31
GLOB 3	Previewing text before reading	2.58	3.66	4.33
GLOB 4	Checking how text content fits purpose	2.63	3.24	3.29
GLOB 5	Noting text characteristics	2.79	3.44	3.98
GLOB 6	Determining what to read closely	2.71	3.12	3.21
GLOB 7	Using text features	2.71	3.44	3.88
GLOB 8	Using context clues	2.58	3.50	3.94
GLOB 9	Using typographical aids	2.63	3.25	3.85
GLOB 10	Analyzing and evaluating the text	2.42	3.13	3.41



GLOB 11	Checking understanding	2.47	3.36	3.95
GLOB 12	Guessing text meaning	2.84	3.40	3.87
GLOB 13	Confirming predictions	2.34	3.28	3.91
<i>Overall</i>		<i>2.64</i>	<i>3.40</i>	<i>3.83</i>
PROB 1	Reading slowly and carefully	2.95	3.36	4.04
PROB 2	Trying to stay focused on reading	2.63	3.49	4.00
PROB 3	Adjusting reading rate	2.97	3.40	3.76
PROB 4	Paying close attention to reading	2.55	3.44	4.40
PROB 5	Pausing and thinking about thinking	2.71	3.37	3.82
PROB 6	Visualizing information	2.50	3.61	4.18
PROB 7	Re-reading for better understanding	2.61	3.40	4.13
PROB 8	Guessing meaning of unknown words	2.79	3.48	4.07
<i>Overall</i>		<i>2.71</i>	<i>3.44</i>	<i>4.05</i>





SUP 1	Taking notes while reading	2.63	3.03	3.00
SUP 2	Reading aloud for better understanding	2.66	2.86	2.84
SUP 3	Summarizing and reflecting on important information	2.47	3.22	3.58
SUP 4	Discussing with others	2.39	3.09	3.49
SUP 5	Underlying information in the text	2.71	3.19	3.13
SUP 6	Using reference materials	2.50	3.30	3.55
SUP 7	Paraphrasing for better understanding	2.34	3.35	3.65
SUP 8	Going back and forth in the text	2.61	3.09	3.49
SUP 9	Asking oneself questions	2.84	3.26	3.60
<i>Overall</i>		2.57	3.16	3.37

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Table 25 listed the five most frequently used metacognitive strategies across the students' Chinese reading proficiency level. As can be seen from Table 17, in the category of GLOB, PROB and SUP metacognitive strategies, "paying close attention to reading" (PROB 4) was ranked the most frequently used strategy by the high proficiency group, and "using background knowledge" (GLOB 2) was ranked the most frequently used strategy by the intermediate proficiency group. As to the low proficiency group, "adjusting reading rate" (PROB 3) was the reading strategy used most frequently. "Using background knowledge" (GLOB 2) was also listed as the most commonly used strategy by all high, intermediate, and low proficiency groups. In addition, "previewing text before reading" (GLOB 3) and "visualizing information" (PROB 6) were ranked as the Top 5 strategies by both high and intermediate proficiency students, while only the low proficiency group reported "reading slowly and carefully" (PROB 1) and "asking oneself questions" (SUP 9) as their commonly used strategies (see Table 25).

To sum up, the results indicated that high and intermediate proficiency groups use the same most-used metacognitive strategies in general when they are reading Chinese texts. However, low proficiency students employed different most-used reading strategies from high and intermediate proficiency groups,

such as “adjusting reading rate”, “reading slowly and carefully” and “guessing text meaning” to enhance their understanding of the texts as they attained limited Chinese proficiency level .



Table 25: The Most-used Metacognitive Reading Strategies by High, Intermediate, and Low Proficiency Groups When Reading in Chinese

Low-proficiency Group <sup>a</sup> Top 5 Used Strategies <sup>a</sup>	Intermediate-proficiency Group <sup>a</sup> Top 5 Used Strategies <sup>a</sup>	High-proficiency Group <sup>a</sup> Top 5 Used Strategies <sup>a</sup>
1. Adjusting reading rate <sup>a</sup> (PROB 3, $M=2.97$ ) <sup>a</sup>	<i>Using background knowledge<sup>a</sup></i> (GLOB 2, $M=3.72$ ) <sup>a</sup>	Paying close attention to reading <sup>a</sup> (PROB 4, $M=4.40$ ) <sup>a</sup>
2. Reading slowly and carefully <sup>a</sup> (PROB 1, $M=2.95$ ) <sup>a</sup>	<i>Previewing text before reading<sup>a</sup></i> (GLOB 3, $M=3.66$ ) <sup>a</sup>	<i>Previewing text before reading<sup>a</sup></i> (GLOB 3, $M=4.33$ ) <sup>a</sup>
3. <i>Using background knowledge<sup>a</sup></i> (GLOB 2, $M=2.87$ ) <sup>a</sup>	<i>Visualizing information<sup>a</sup></i> (PROB 6, $M=3.61$ ) <sup>a</sup>	<i>Using background knowledge<sup>a</sup></i> (GLOB 2, $M=4.31$ ) <sup>a</sup>
4. Guessing text meaning <sup>a</sup> (GLOB 12, $M=2.84$ ) <sup>a</sup>	Setting purpose for reading <sup>a</sup> (GLOB 1, $M=3.60$ ) <sup>a</sup>	<i>Visualizing information<sup>a</sup></i> (PROB 6, $M=4.18$ ) <sup>a</sup>
5. Asking oneself question <sup>a</sup> (SUP 9, $M=2.84$ ) <sup>a</sup>	Using context clues <sup>a</sup> (GLOB 8, $M=3.50$ ) <sup>a</sup>	Re-reading for better understanding <sup>a</sup> (PROB 7, $M=4.13$ ) <sup>a</sup>

\* The strategies marked in *Italic* are shared by different proficiency groups.

#### **4.4.4 Students' reading strategy use and their Chinese achievements in the MARSI**

To answer the second research question (“What is the relationship between students’ language proficiency and the use of metacognitive strategies in their Chinese reading?”), MANOVA was conducted to determine if there were any significant differences between the levels of students’ Chinese proficiency and their use of reading strategies in each category. The dependent variables were the three categories of the MARSI (GLOB, PROB and SUP reading strategies) and the independent variable was the level of participants’ Chinese proficiency (low, intermediate and high). MANOVA results indicated that the reading strategies reported being used by the three levels of Chinese proficiency groups were significantly different (Wilks’ Lambda = .680,  $F(6, 534) = 18.955$ ,  $p < .001$ ) (Table 26). This means that the different levels of Chinese proficiency groups were significantly different in terms of using metacognitive strategies overall while reading Chinese texts.

Table 26: Global, Problem-solving, and Support Metacognitive Reading Strategies Used by High, Intermediate, and Low Chinese Proficiency Groups

Effect <sup>a</sup>	Wilks' Lambda	F <sup>a</sup>	Hypothesis	Error df <sup>a</sup>	P <sup>a</sup>
	Value <sup>a</sup>		df <sup>a</sup>		
Intercept <sup>a</sup>	.048 <sup>a</sup>	1751.791 <sup>a</sup>	3.000 <sup>a</sup>	267.000 <sup>a</sup>	.000 <sup>a</sup>
Group <sup>a</sup>	.680 <sup>a</sup>	18.955 <sup>a</sup>	6.000 <sup>a</sup>	534.000 <sup>a</sup>	.000 <sup>a</sup>

An analysis of variance (ANOVA) tested the relations between the three levels of Chinese proficiency groups on each dependent variable, metacognitive reading strategies, and the independent variable of the level of Chinese reading proficiency. The multivariate  $\eta^2$  (eta squared) was used to explain effect size (see Table 27). The  $p$  values of the participants' self-reported strategy responses on the GLOB, PROB and SUP reading strategies were all significant,  $F(2, 269) = 41.28, p < .001$ , partial  $\eta^2 = .235$ ,  $F(2, 269) = 13.86, p < .001$ , partial  $\eta^2 = .093$ ,  $F(2, 269) = 48.09, p < .001$ , partial  $\eta^2 = .263$ , respectively. The results of the partial  $\eta^2$  on GLOB and SUP reading strategies indicated a large effect ( $\eta^2 > .15$ ) and the partial  $\eta^2$  on PROB was medium ( $.06 \leq \eta^2 < .15$ ). As can be seen, there was a statistically significant difference between the levels of students' Chinese reading proficiency and their use of reading strategies in the GLOB, PROB and SUP category respectively.

Table 27: ANOVA Tests of the Effects of the Global, Problem-solving, and Support Metacognitive Reading Strategies Used by High, Intermediate, and Low Chinese Proficiency Groups

Source <sup>a</sup>	Dependent Variable <sup>a</sup>	Sum of Squares <sup>a</sup>	df <sup>a</sup>	Mean Square <sup>a</sup>	F <sup>a</sup>	P <sup>a</sup>	Partial Eta Squared <sup>a</sup>
Group <sup>a</sup>	GLOB <sup>a</sup>	37.504 <sup>a</sup>	2 <sup>a</sup>	18.752 <sup>a</sup>	41.276 <sup>a</sup>	.000 <sup>a</sup>	.235 <sup>a</sup>
	PROB <sup>a</sup>	16.743 <sup>a</sup>	2 <sup>a</sup>	8.372 <sup>a</sup>	13.855 <sup>a</sup>	.000 <sup>a</sup>	.093 <sup>a</sup>
	SUP <sup>a</sup>	49.427 <sup>a</sup>	2 <sup>a</sup>	24.713 <sup>a</sup>	48.091 <sup>a</sup>	.000 <sup>a</sup>	.263 <sup>a</sup>

4.4.5 The relationship between the SORS and MARSI

The grand means of all the items of the SORS and MARSI were  $M=3.29$  and  $M=3.37$  respectively reported by the 272 Chinese junior secondary school students when they are reading English and Chinese texts. According to Brace (2009, p.165), the value of  $r$  indicates the strength of the correction, “ $r$  values of 0 to .2 are generally considered weak, .3 to .6 moderate, and .7 to 1 strong.” The Pearson’s correlation coefficient of the total scores between all the corresponding items for SORS and MARSI reported by the 272 Chinese junior secondary school students was  $r = .803$ ,  $N = 30$ ,  $p < .001$ . There is a fairly strong correlation between the participants’ metacognitive strategy use in reading English and Chinese. That is to say, the metacognitive strategy used by Chinese junior secondary school students in reading English is generally

consistent with the metacognitive strategy while reading in Chinese. From the examination results of self-reported use of metacognitive strategies, we can conclude that Chinese reading strategies can be transferred to English reading at junior secondary school level.

#### **4.5 Summary of the Quantitative Analysis**

The quantitative data analysis was conducted using descriptive and inferential statistics. The results showed that students on the whole reported using the metacognitive strategies when reading both in English and Chinese texts at a moderate-frequency level. The difference in the use of the overall reading strategies between reading English and reading Chinese was not statistically significant using a Paired-Samples T-Test:  $t(271) = -2.63$ ;  $p > .05$ . That is to say, the reading strategies that the participants employed when reading English and Chinese texts were the same in general although the overall mean scores of the reading strategy use when reading Chinese were a little higher than when reading English. Specifically, students more frequently employed GLOB reading strategies in reading Chinese than English, but there is no statistically significant difference in the use of PROB and SUP categories when reading English and Chinese texts.



Problem-solving reading strategies (PROB) were reported as the most frequently used strategies in SORS and MARSI; global reading strategies (GLOB) were the second most frequently used category, and support reading strategies (SUP) were the least frequently employed. More specifically, “using background knowledge” (GLOB) and “previewing text before reading” (GLOB) within the global reading category were ranked the two most frequently used strategies by all the participants when they are reading in both English and Chinese. However, “reading aloud for better understanding” (SUP), “taking notes while reading” (SUP) and “determining what to read closely” (GLOB) in support and global reading categories were reported as the three least used strategies when reading in English and Chinese.

Moreover, there were quite a lot of differences in students’ selections of reading strategy use in their English and Chinese reading when proficiency is considered. Specifically, the quantitative data analysis on SORS showed that “predicting or guessing text meaning” (GLOB) was ranked the most frequently used strategy by the high proficiency group when reading English texts, while “using context clues” (GLOB) was ranked the most frequently used strategy by the low-proficiency group. “Previewing text before reading” (GLOB) and

“translating from English to Chinese” (SUP) were the reading strategies used most by the intermediate proficiency group. In addition, “guessing meaning of unknown words” (PROB) and “paying close attention to reading” (PROB) were listed in the top five most used strategies by both high and intermediate proficiency students when they read in English, while only the low proficiency group reported “adjusting reading rate” (PROB) and “thinking in both languages when reading” (SUP) as their commonly used strategies (see Table 20). As for the data analysis of MARSII, high proficiency students reported that they applied “paying close attention to reading” (PROB) and “previewing text before reading” (GLOB) as their most-used reading strategies when reading Chinese texts, while the intermediate proficiency group was in favour of “using background knowledge” (GLOB) and “previewing text before reading” (GLOB)” and low proficiency participants frequently employed “adjusting reading rate” (PROB) and “reading slowly and carefully” (PROB) in their Chinese reading process.

MANOVA and ANOVA results revealed that reading proficiency was related to the use of metacognitive strategies (e.g. GLOB, PROB and SUP reading strategies) when they read both English and Chinese texts, which means that the reading strategies reported to be used by the three levels of English and Chinese

proficiency groups were significantly different. The high-proficiency group outperformed the intermediate- and low-proficiency groups and the intermediate group outperformed the low-proficiency group in overall strategy use, and these differences were statistically significant. Students at the higher proficiency level employed metacognitive strategies more frequently.

Furthermore, the Pearson's correlation coefficient showed that metacognitive strategies used by Chinese junior secondary school students in reading English are generally consistent with the metacognitive strategy while reading in Chinese. It suggests that Chinese reading strategies can be transferred to English reading. The results of further exploration of junior secondary school students' actual reading strategy use when reading English texts, and the impact of L1 reading on their L2 reading by qualitative studies will be presented in the following chapter.

## CHAPTER 5

### QUALITATIVE INQUIRIES

This chapter presents findings of the qualitative studies which further explain the quantitative research findings with regard to actual similarities and differences of metacognitive strategy use by different levels of participants' English proficiency and their employed strategies when reading English texts as well as factors that influence their English reading.

Twelve students chosen from the three proficiency groups were involved in the stimulated recalls and semi-structured interviews to explore the first two research questions more explicitly and also respond to the third research question: *Can L1 reading strategies benefit L2 reading?*

The qualitative analysis of the data was conducted to develop a more in-depth perception of how individual participants used processing reading strategies to construct meaning from the texts. The findings of the qualitative examinations would offer additional evidence to investigate the quantitative findings presented above. To explore these findings further, the selected twelve participants were divided into three proficiency groups — high, intermediate



and low proficiency groups in both the stimulated recalls and in-depth semi-structured interviews which enabled me to have extended interactions with these students. This was also to provide them with a chance to explain their thinking and to gain authentic student responses which overall would give a comprehensive view of how metacognitive strategies were applied. The qualitative data also helped further situate the interpretation of the students' stated reading strategies use in their English learning. The analysis of the participants' reading strategy use revealed some similarities and differences in their language learning experiences and practices. This qualitative examination focused on two aspects: first, the different level of language proficiency groups in strategy use; and second, the impact of L1 reading strategies on L2 reading strategy use.

### **5.1 The Steps of Reading Strategy Use by the Three Proficiency Groups**

To gain more insights into students' actual use of reading strategies while reading English texts, the steps of reading strategy use were observed according to students' different proficiency levels. The steps of the reading strategy use among the three proficiency groups of participants were classified into three stages — before, while and after reading stage according to their stimulated

recall and semi-structured interview sessions. The general steps of reading strategy use in common among the four participants in each proficiency group were presented and summarized as follows.

### 5.1.1 The steps of high proficiency students' strategy use

All the four high proficiency participants (S1, S2, S3, S4) said that they *went through the passage trying to get the gist before reading*. They quickly determined the topic of the passage and *predicted what would be discussed*. As Xu (S1) stated:

“I read the text quickly for an overview of the content and then I read it intensively. I often predict the content of reading materials according to the title and subtitles.” (Ex.1: S1)

Secondly, they stated that they *read the comprehension questions* and then start to read the text, as Ma (S3) commented:

“Reading the questions can help me focus later on the text much more precisely. I know what I should pay attention to, especially when reading a long English text.” (Ex.2: S3).

Two of the students mentioned they *planned their reading* and they knew how and why they used the planning strategy to complete a reading task better. For example:

“When I received the reading tasks, I flipped through all the questions to see which text and questions were easy. I completed the easier questions first before trying to finish the more difficult questions because I was not sure that I would have sufficient time to complete them all.” (Ex.3: S4)

When faced with unknown words or expressions while their reading was in progress, they attempted to avoid consulting the dictionary first because it was time-consuming and it disturbed the continuity in reading. Instead, they made *use of context clues* provided and guessed the meaning of unknown words first.

They commented:

“I usually begin with contextual clues and guess the meaning of words that I don’t know that help me read faster and more easily without stopping to consult every unknown word in a dictionary.” (Ex.4: S1, S3)

“When I do not understand a sentence or a part of one, I go on

reading the next sentence trying to imagine the meaning from the rest of the text. So I always try to make use of the given context first.” (Ex.5: S4)

Furthermore, they *drew on what they already knew* to facilitate their comprehension of the passage. For example, Guo (S2) was trying to answer the fifth question of the Reading Task 2 about No Car Day and environmental protection in the stimulated recall session.

“I answered this question from my personal and general knowledge as the passage is long and hard to understand with some unknown words. Apparently, drivers should not be encouraged to drive a car on No Car Day, so they may walk or ride a bike to work according to my experience about the real world. When my understanding of a text was impeded by a language obstacle, I used my existing knowledge about the real world to guess its meaning.” (Ex.6: S2)

In addition, when they were a bit confused attempting to find an answer, they relied on the strategy — *going back and forth in the text* in order to find relationships among ideas in it. Ma (S3) and He (S4) pointed out:



“I’m attempting to justify why we should have No Car Day. The first and the last paragraphs explain this. I think I need to re-read these two passages to find the answer.” (Ex.7: S3,S4)

Furthermore, when they sometimes struggled with understanding complex ideas presented in the text, they *paid close attention to reading* and *re-read carefully to better understand*, as Xu (S1) and Guo (S2) indicated:

“The answer should be in this paragraph, but it seems too difficult to understand. I took some time to read what it says here more carefully and slowly.” (Ex.8: S1,S2)

“This sentence ‘*In the first quarter of 2007, Beijing only had 52 blue sky days. This was 11 days less than the number for the same period last year*’ is very difficult to understand. I read it three times to try to figure it out.” (Ex.9: S2)

At the same time, most of the high proficiency participants claimed that they *checked their understanding* and *summarized the main idea* after finishing reading a paragraph to enhance their comprehension. The following comment is representative:

“Checking my understanding is essential, as sometimes, even if I finish reading a paragraph, I need to check and occasionally double check to ensure that my understanding is correct and summarize ideas to reflect on essential information in the paragraph.” (Ex.10: S3)

Finally, they *looked up the unknown words in the dictionary* to confirm that their guess was correct after finishing their reading. Then, as they stated:

“I need to look up these unknown words in the dictionary now (finish reading). I will take down the meaning of these words and keep reciting them in order to enlarge my vocabulary.” (Ex.11: S1, S2, S3)

They also mentioned that they would like to *ask their teachers or classmates’ help* when they come across problems or barriers in their English reading, as exemplified by the following extract:

“If I found a few ideas or sentences new to me or difficult to understand, I would ask my teacher or classmates for help because my English is poor. I have some friends whose English is much better than mine.” (Ex.12: S1)

### 5.1.2 The steps of intermediate proficiency students' strategy use

Intermediate proficiency participants (S5, S6, S7, S8) also said that they *previewed the text before reading*. For example:

“I scan the text to have an overview of the text and think about what I will read next.” (Ex.13: S5)

All of the intermediate proficiency students stated that they also *read the comprehension questions* to quickly provide responses to those questions before reading the texts. As Zhang (S6) stated:

“I prefer reading the questions first, and then I start to read the entire passage. At last, I respond to the reading comprehension questions.” (Ex.14: S6)

Intermediate proficiency participants also *activated their background knowledge* to facilitate their understanding of the text during their reading. As they reported:

“The first reading task is about fish keeping. I am very familiar with this topic, thus I didn't find it too difficult to understand the text as I already know something about fish keeping. I answered

these reading questions almost according to my background knowledge about fish keeping.” (Ex.15: S5)

*Interpreting what is read from L2 into L1* is the most frequently used strategy by intermediate proficiency participants. They paid much attention to the use of translating what they read into Chinese (L1) while reading the text. Among the four participants, Zhang (S6), Zhao (S7) and Wei (S8) seemed to depend on translation into Chinese. I found many Chinese translations written in their reading materials when doing the reading task. For example, on a two-page reading task sheet from Zhao (S7), Chinese translations were almost everywhere, with arrows from unknown words and phrases with Chinese characters, in the margins on the two pages. As Zhao (S7) stated,

“I read the text in English, but in my mind, the thinking or understanding is done in Chinese. I have to keep thinking in Chinese to understand my reading. I translated every sentence to make sure I can gain a thorough understanding. I read carefully and slowly in general.” (Ex.16: S7)

When it came to an unknown word, they stated they might *guess its meaning from the context clues* first, but they must consult a dictionary to understand

these unknown words immediately. As Zhang (S6) and Wei (S8) explained,

“I try to understand an unknown word from the context at first; if I cannot manage it, I will consult a dictionary.” (Ex.17: S6)

“In principle, I would look up each word that I don’t know in the dictionary, as it allows me to understand the exact meaning of a sentence. I always look up all the unknown words to make sure that I can understand everything I want to know. The second text has too many new words and I cannot continue reading it after reading a few sentences. I must get all the words’ meanings clear then I know how I could continue.” (Ex.18: S8)

As revealed in their stimulated recall and interview session, intermediate proficiency participants expected to gain a complete understanding of the information by relying on translation and they spent most of the time decoding what unknown words meant in order to achieve a thorough comprehension of the text.

Meanwhile, they *underlined or circled important information* in the text while reading in order to figure out the reading questions easily and quickly. For

example:

“I underlined the important information and made marks to remind me and help me find the answers easily when I am answering the reading questions later on. I think it’s an effective way to find answers to questions easily and quickly.” (Ex.19: S5)

In addition, they also claimed that they *paid close attention and re-read* some difficult or complex sentences or sections within the text for better understanding, as Liang (S5) and Wei (S8) commented:

“This paragraph is too difficult to understand. I have to read it more carefully and slowly. I tried my best to get the meaning of it.” (Ex.20: S5)

“I cannot find the answer in the text and I’m sure it must be in this paragraph, so I focused more on this paragraph and read it again and again.” (Ex.21: S8)

The intermediate proficiency participants were also aware of *monitoring their understanding*. For example:

“I need to go back and check my understanding of the difficult sentence as it would be used repeatedly to answer comprehension questions. I think it is important to check my understanding.” (Ex.22: S5)

After finishing the reading, the intermediate proficiency participants indicated that they would *double check their answers* in order to avoid carelessness while answering the questions. As one of them reported:

“I often make careless mistakes. For example, when answering a question which required me to choose an answer that matches with the text out of the four choices, I picked a choice which did not match with the text. I should have read the instruction more carefully. So I would double check my answers after finishing it.” (Ex.23: S6)

Meanwhile, two of the participants stated they would like to *ask teachers, classmates or parents for help* to figure out the difficulties that they cannot deal with. For example:

“I’d like to look for my English teacher’s help if there is something I cannot understand. If I keep quiet all the time even

if I don't understand the meaning of the sentence or the text, then I will never comprehend it and I will never make progress in my English learning.” (Ex.24: S7)

### 5.1.3 The steps of low proficiency students' strategy use

The same as high and intermediate proficiency groups, the four low proficiency participants (S9, S10, S11, S12) also stated that they *read the comprehension questions before reading* the text. As Jin (S9) explained,

“In order to save time, I always read the questions first, and then start to read the text.” (Ex.25: S9)

While reading, they constantly found the texts they read difficult because of their low proficiency. In order to tackle the text difficulty they encountered, they realized that they needed to *adjust their reading rate and read slowly and carefully*. As Miao (S11) reported:

“Reading in English is pretty difficult for me. I got stuck quite often while I was trying to comprehend the text. I read much more slowly and carefully. Slowing down my reading speed was very crucial when I wanted to figure out a difficult sentence.”



(Ex.26: S11)

The same as high and intermediate participants, they are also capable of *using background knowledge* to help them understand the text being read.

“I answered this question from my personal and general knowledge as the passage is long and hard to understand with a lot of unknown words. Apparently, drivers should not be encouraged to drive a car on that day, so they may walk or ride a bike to work according to my experience about the real world. When my comprehension of a text was blocked by words I don’t know, I used my existing understanding about the real world to figure out its meaning.” (Ex.27: S10)

Furthermore, they *use context clues* to guess the meaning of unknown words.

For example:

“I don’t know the meaning of the word ‘chairman’ from the sentence of the second reading task ‘*we can’t control the weather, but we can choose not to drive, said Wu Zhonghua, a car club chairman*’, but I am sure it is related to the person Wu Zhonghua.” (Ex.28: S12)

Three of the low proficiency students also claimed that they *translated English into Chinese* and tried *thinking in both languages*, for example:

“To fully understand the content of the text, I must translate English into Chinese and think about the information in Chinese. Otherwise, I won’t be able to understand the sentences, let alone the text.” (Ex.29: S10)

However, all of the four low proficiency students stated they did not want to consult the dictionary because there were too many unknown words in the texts. Moreover, they sometimes *skipped difficult sentences or sections* where probably key ideas were embedded and provided answers to comprehension questions based only on their prior knowledge. For example:

“I rarely consult a dictionary because there are too many unknown words and I have not enough time to consult a dictionary in the reading task. So, I will answer the question based on what I already know. If I find so many difficult parts, I just skip them.” (Ex.30: S10)

Inevitably, because of their incomplete comprehension, they tended to rely

fundamentally on their own assumption and *wild guessing* without using supporting evidence from the specific text they read and as a consequence they answered questions randomly. This point is demonstrated as follows:

“The entire passage is about the importance of World Environment Day. I don’t know which paragraph is more important, though. I cannot find a suitable sentence that answers the question. I just guess the answer should be ‘Yes’, as I notice that the right answer to the “yes” or “no” questions is usually ‘yes’.” (Ex.31: S11)

“Oftentimes, I find it difficult to fully understand the text in English, especially when it is long. I have to go back and forth again and again, but I still cannot find the right answer. Also, I don’t understand some paragraphs, so I give it up and just choose one answer out of the four choices randomly or leave the blank there.” (Ex.32: S12)

Moreover, due to their limited English proficiency, they had difficulty with long and complex sentences. Three of the low proficiency participants stated that they *determine what to read* of the text. For example, they only read part of

the text instead of reading the whole text. They commented:

“I just read the paragraph or sentences relevant to the questions to be answered. It would take too much time to read the whole text.” (Ex.33: S9)

“I usually read all the questions to locate where the information I need to find in the text and then read these parts and paragraph.” (Ex.34: S10)

“I sometimes read only the first and the last paragraphs of the text because my teacher told us that the first paragraph should give me some background information about the text, and the last paragraph always summarizes what is discussed in the whole text.” (Ex.35: S12)

*Asking for others' help* is the only step that low proficiency students applied after finishing their reading. As they stated:

“I ask the high proficiency classmates to explain the meaning of some unknown words, the answer of the reading questions or translate the difficult sentences for me.” (Ex.36: S9)

“My sister’s English performance is very good. She helped me  
when I couldn’t manage homework or school assignments.”  
(Ex.37: S12)

In sum, the above qualitative analysis revealed that there were similarities and significant differences in the steps of reading strategy use among the high, intermediate and low proficiency readers when reading English texts. The high proficiency group generally used more strategies than the other two groups, which is consistent with the quantitative finding presented earlier. Table 28 summarized the main strategies involved in each step of the three proficiency groups.

The high and intermediate proficiency group of participants stated that they take an overall view of the text to see what it is about before reading it, while it was not mentioned by the low proficiency group. During their reading, the high proficiency group of participants paid more attention to specific aspects of language input or situational details, understood better the text for successful completion of the task, monitored comprehension regularly and made summaries and predictions. They were more likely to guess the unknown words

from context and were more focused on achieving the overall understanding of the text. The intermediate proficiency participants relied on translation and felt it was necessary to need to know the meaning of all words in the text before they felt confident that they understood the text as a whole. They used the dictionary to get the meaning of any unknown word they encountered in the text. As to the low proficiency participants, they ignored or gave up a point they failed to understand and engaged in wild guesses and generally did not use a dictionary to deal with the unknown words. This is the salient difference between the different levels of proficiency of the students during their reading. After finishing reading, the high proficiency participants used the dictionary to get the meaning of unknown words and confirm that their guess was correct, while the intermediate proficiency students would check their answers and see if there was any misunderstanding caused by their carelessness. However, there is no response from the low proficiency group after finishing reading except asking their classmates or family members for help sometimes.

## **5.2 Similarities and Differences of the Three Proficiency Groups' Strategy Use in Reading English**

The previous section revealed the similarities and differences which existed



between the high, intermediate and low proficiency groups in the steps of their reading strategy use based on their stimulated recalls and semi-structured interviews. The following section analyses specifically the similarities and differences of the reading strategy use among the three proficiency groups during their independent reading tasks.

### **5.2.1 Similarities of the three proficiency groups**

This part focused on gaining an understanding of the similarities of reading strategy use which existed in the steps of reading strategy use among the three proficiency groups of participants when they were reading English texts.

#### **5.2.1.1 Reading the questions before reading the text**

The first common strategy used by the three proficiency groups is *reading the questions before reading the text*. Ten of the twelve chosen participants alleged that they always scanned the reading questions first and then read the passage.

For example:

“I usually try to get the meaning of the questions and then read the passage with the aim of finding the answers. I think it is a

very efficient way when doing reading comprehension.” (Ex.38:

S5, I<sup>1</sup>)

#### 5.2.1.2 Using background knowledge

Participants in this study prefer applying the *use of background knowledge* in their English reading. Ten of them claimed that they made use of what they already knew in order to facilitate their comprehension of the text. The high-proficiency student Ma (S3) was trying to answer the second question of the Reading Task 1 about Fish Keeping in the stimulated recall session, as shown by her extract.

“Nine goldfish are kept in my home, so I have an idea of the passage is talking about when I begin to read it. This helps me a lot. The second question is about how often we can feed the fish, so I know the answer immediately; it is ‘once a day’ without having to look for it in the text. I often read English passages and answer questions based on my background knowledge and the common sense of life.” (Ex.39: S3, H)

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<sup>1</sup> “H” means high proficiency; “I” means intermediate proficiency; “L” means low proficiency





The same as Ma (S3), a low-proficiency student used the same way when he was trying to answer the seventh question regarding whether more and more people in Beijing will join the activity of No Car Day in the second passage.

“Some questions can be answered using my life experience. For example, the second reading task is about No Car Day and protecting the environment. The Seventh question is asking if more and more people in Beijing will join the activity. I didn’t find the answer in the text, but I guess the answer is ‘yes’ as the government promotes environmental protection and the bus and subway instead of private cars.” (Ex.40: S10, L)

In the excerpt above, the two participants tried to relate what they were reading to their background knowledge, which assisted them in gaining a thorough understanding of the text. They also used information from their own lives to foresee the content of the texts. In addition, the other eight participants all mentioned using background knowledge to guess and predict, which facilitated their understanding of the reading materials. They depended on their background knowledge to understand what they read to fill in many gaps in their understanding.

### 5.2.1.3 Using context clues

All the twelve participants claimed that they also chose to *take advantage of context clues* available to help them better understand what they are reading and handle the unknown words and sentences at times. The following extracts illustrate how they manipulated the particular strategy.

“I prefer using context clues to using a dictionary in dealing with vocabulary problems. When I do not understand a sentence or a part of it, I go on reading the next sentence trying to imagine the meaning from the rest of the text. So I always look at context first.” (Ex.41: S3, H)

“I want to speed up my reading, so I always make an effort to guess the meaning of the new words in their context. The context clues work faster than a dictionary.” (Ex.42: S10, L)

As revealed above, it was evident that both of the students attempted to depend on context clues first to derive the meaning of unknown words. The excerpts indicate that, to deal with vocabulary difficulty, the students preferred guessing the meaning of unknown words by using context clues.

#### 5.2.1.4 Asking others for help

*Asking for help* to clarify meaning in reading was viewed as being helpful among the three groups of students. Most of the participants mentioned that they would like to ask their teachers or classmates for help when they come across problems or barriers in their English reading, as exemplified by the following extracts:

“I often ask for my English teacher’s or English subject leader’s help when I encounter reading difficulties. Without their help, I could not improve my English proficiency rapidly.” (Ex.43: S1, H)

“Every time I made mistakes in English examinations, my teacher always found me to correct my mistakes, analyze them, and explain the corrections to me clearly. I benefited a lot from her help.” (Ex.44: S7, I)

The qualitative data confirmed the quantitative statistical data that using *background knowledge, previewing text before reading and using context clues* were most favoured by all the three proficiency levels of participants. On the

other hand, the chosen students showed that they employed *reading the questions before the text* and *asking others for help*, which were not included in the SORS questionnaire.

### **5.2.2 Differences between the three proficiency groups**

The statistical data made it clear that the reading strategies reported being used by the three levels of English proficiency groups were quantitatively significantly different when reading English texts. This part discusses the important qualitative differences between high, intermediate and low proficiency students in their steps of reading strategy use.

#### **5.2.2.1 Planning reading used by the high proficiency group**

The high proficiency students tended to have a heightened awareness of the need to *plan their reading* and they knew how and why they used the planning strategy to complete reading tasks. For example,

“I first previewed all the passages and reading questions to see which ones were easy and which ones were difficult before doing the reading tasks. Then I started with the difficult questions because when I first began working on the task, my



brain was still fresh and not so tired. When I felt tired, I would still be able to do those easy questions.” (Ex.45: S2, H)

From the above example, the high proficiency student knew which planning worked best for them to complete the read task. Guo (S2) adjusted the order of finishing the reading questions according to his feeling. However, the intermediate and low proficiency students all completed the reading questions according to the given sequence of the question numbers. For example:

“When answering the reading comprehension questions, I just followed the exact number of these questions in the order of Question Number 1, 2, 3.” (Ex.46: S6, I)

#### **5.2.2.2 Predicting or guessing text meaning used by the high proficiency group**

Only students in the high proficiency group claimed that they predicted what would be discussed in the text and they also indicated that they learnt this strategy from their Chinese reading and then applied it in their English reading.

As Guo (S2) and Ma (S3) stated:

“I often predict the meaning of the texts according to the title, key words and background knowledge to judge what would happen

in the text. Making predictions was taught and used in Chinese reading at first and I think it also can be employed in my English reading.” (Ex.47: S2, H)

“When I read an article, I try to find contextual connections and predict the incoming information of the text or paragraphs. I also do the same in my Chinese reading.” (Ex.48: S3, H)

### **5.2.2.3 Previewing the text before reading used by high and intermediate proficiency groups**

*Previewing the text before reading* was more frequently mentioned by students of the high and intermediate proficiency groups. However, the participants in the low proficiency group did not mention it. The following quotes illustrate how the high and intermediate proficiency students implemented this strategy:

“I went through the passage trying to get the gist before reading. By focusing on the most important information and connecting the information that I already know, I usually have an overview of the text and it can help me understand the text better.” (Ex.49: S3, H)

“I always look over the text and get an overview of the content before I start reading in order to help me become familiar with text content.” (Ex.50: S7, I)

#### **5.2.2.4 Consulting a dictionary by high and intermediate proficiency groups**

Whether consulting a dictionary or not when encountering unknown words is a salient difference between the three proficiency groups. High and intermediate students all mentioned that they *looked up unknown words in the dictionary*. Intermediate students indicated they consulted a dictionary immediately when encountering the unknown words. For example:

“I need to know the unknown word ‘slogan’ and I can understand the sentence better. Sometimes I may guess the meaning from the context but I still prefer consulting a dictionary. If there was no dictionary or I was taking an exam, I would have to guess its meaning.” (Ex.51: S7, I)

While the intermediate proficiency readers used this strategy very often as indicated above, the high proficiency readers normally tried to guess the

meaning of unknown words. They stated that they guess the meaning first and then look it up in the dictionary to check whether their guess was correct or not later. As Guo (S2) and He (S4) stated:

“I don’t know the word ‘slogan’, but it doesn’t affect my comprehension of the whole sentence. I’d look it up in the dictionary later after finishing my reading as it’s a new word and I’m interested in knowing it.” (Ex.52: S2, H)

“I can guess the unknown word ‘slogan’ and would look it up later in the dictionary to see whether it means what I guessed.”  
(Ex.53: S4, H)

However, as to the four low proficiency readers, they all responded that it was not important to look up the unknown words if they could *guess the meaning*.

The following comments are representative:

“Basically I could guess this word ‘slogan’ from the context. I don’t think the word is important to look up in the dictionary.”  
(Ex.54: S9, L)

“I skipped the unknown word ‘slogan’ and I didn’t have time to



consult a dictionary because there were too many new words for me to look up every new word in the dictionary.” (Ex.55: S11, L)

#### **5.2.2.5 Checking understanding used by the high and intermediate proficiency groups**

*Checking understanding* in the reading process was regarded as another important difference between the three groups of students. Most of the high and intermediate proficiency participants claimed that they were aware of monitoring their understanding. The following comment is representative:

“I think it is important to check my understanding as it is quite difficult to get the ideas of long and complicated sentences. Sometimes, I need to finish reading the whole text and then come back to check my understanding of the meaning of these sentences.” (Ex.56: S2, H)

But low proficiency participants indicated their lack of concern for checking their understanding. The following example helps illustrate this difference:

“I skipped the sentence that I cannot understand. It’s just too tiring to check the understanding of every unknown word and

sentence.” (Ex.57:S11, L)

Monitoring is a reflection of “learners’ abilities to accurately assess the state of information within their own cognitive system” (Wellman, 1985, p.3; see also Flavell, 1987, 1992; Garner, 1994) and is one of the most important and useful strategies relating to metacognitive knowledge. The lack of concern for checking their understanding showed that low proficiency participants did not attach value to this important aspect.

#### **5.2.2.6 Problem solving strategies used by the high and intermediate proficiency groups**

When the complexity of the sentences was encountered during their reading, a string of interrelated problem-solving strategies could initially be identified, which consisted of *paying close attention, going back and forth in the text, re-reading for better understanding and reading slowly and carefully*. As Zhang (S6) explained in her report:

“If the text is not too difficult, I read it quite fluently. Anyway, whenever some parts are complicated to understand, I just need to pay a lot of attention to read and re-read several times what it says in the paragraph where you can find an answer.” (Ex.58:



S3, H).

Like Ma (S3), intermediate proficiency students also said they read in the same way when they faced difficult sentences and were confused when attempting to find an answer. The following excerpt demonstrates the point:

“For me, this is a pretty difficult passage to read. I couldn’t get all the main ideas. Instead, I had to read quite slowly and carefully. Also, I felt the need to pay close attention to reading and focus on every detail in order to understand what it says in each paragraph.” (Ex.59: S6, I)

#### **5.2.2.7 Underlying information in the text used by the intermediate proficiency group**

*Underlying information in the text* was one of the only two strategies reported by intermediate proficiency students, which the high and low proficiency students did not report. Two of the intermediate proficiency students pointed out:

“I found the important sentences and phrases that I underlined and marked with numbers helped me to complete the task. I think it’s a very efficient way to find them when answering the

comprehension questions.” (Ex.60: S7, I)

#### **5.2.2.8 Double checking answers used by the intermediate proficiency group**

*Double checking answers* was another strategy reported only by intermediate proficiency students. Two intermediate proficiency participants indicated that they would *double check their answers* after reading in order to avoid carelessness while answering the questions. As Wei (S8) reported:

“I am too careless sometimes as I made a few stupid mistakes.

So I often remind myself to read the questions carefully and check my answers twice in the end and I can get better scores.”

(Ex.61: S8, I)

#### **5.2.2.9 Translating from L2 into L1 and thinking in both languages used by the intermediate and low proficiency groups**

It also should be noted that intermediate and low proficiency readers preferred using strategies such as *translating L2 into L1*, *word-for-word translation*, *thinking in both languages*. For instance:

“I need to translate almost every word and sentence in the text as it can make me feel confident to understand the text as a whole.

Translation makes everything easy for me to understand and I have enough confidence in what I am trying to understand.”

(Ex.62: S6, I)

*Translating into the mother tongue and thinking in both languages* were of frequent occurrence among the intermediate and low proficiency students. They tended to use translation as a strategy to understand every detail of the text. However, high proficiency students claimed that they seldom translated from L2 into L1 or only translated some sentences of the text they could not comprehend during reading or some specific words. They thought that translating could sometimes take up too much of their time and force them to go back and forth constantly between languages. He’s (S4) report demonstrates the typical features of high proficiency students’ strategy usage:

“I sometimes translate the sentences or words into Chinese, but I rarely do so, as translating every sentence is too time-consuming for reading.” (Ex.63: S4, H)

In contrast, Miao, constrained by his low English proficiency, reported:

“Reading and thinking in English only confused me sometimes. So, I must translate it into Chinese. Thinking about the content

in my native language gave me the chance to better interpret the information.” (Ex.64: S11, L)

#### **5.2.2.10 Adjusting reading rate used by the low proficiency group**

It was obvious that the low proficiency readers used adjusting reading speed deliberately when they encountered difficult or complex sections within the text they read. They pointed out:

“This paragraph is long and difficult in terms of the ideas presented. So, I adjusted my reading speed and focused more on this paragraph to make sense of it.” (Ex.65: S12, L)

#### **5.2.2.11 Skipping sections, determining what to read and wild guessing used by the low proficiency group**

Due to low proficiency students’ limited English proficiency, they found difficulties in dealing with certain sentences. They did not want to continue consulting the dictionary because of their decreased motivation to read. They only read part of the text instead of reading the whole text, something which was not reported by the high and intermediate proficiency students. They commented:



“I just read the paragraph or sentences related to answering the questions. It would cost too much time to read the whole text and too tiring to look up every unknown word in a dictionary.”  
(Ex.66: S9, L)

“I think it is too time-consuming for me to read the whole section full of unfamiliar words. So, I will answer the question based on what I already know..... I’ll just leave it unanswered or pick a random choice if I could.” (Ex.67: S10, L)

The qualitative data showed that similarities and differences exist in the use of steps of each proficiency group which were generally consistent with the results of the quantitative analysis. To further explore and answer the third research question: *Can L1 reading strategies benefit L2 reading?*, the interview transcripts and videos for the stimulated recalls were repeatedly studied and some factors that influence junior secondary school students’ English reading were summarized in the following sections.

### **5.3 L1 as a Factor Having an Impact on L2 Reading**



Students' Chinese reading strategies can benefit their English reading, as indicated by the Linguistic Threshold Hypothesis (Cummins, 1979). That is to say, readers need to develop a certain level of L2 proficiency before they can transfer L1 reading strategies to improve L2 reading comprehension. When reading in L2, readers have access to their L1 and often make use of their L1 as a reading strategy (Upton & Lee-Thompson, 2001). Readers tend to transfer their L1 reading strategies to their L2 reading (Yamashita, 2002a). Based on the quantitative data analysis, the results showed that the metacognitive strategy used by students in reading English is generally consistent with their metacognitive strategy while reading in Chinese. However, most of the participants from different proficiency groups also indicated in the semi-structured interviews that reading in Chinese and reading in English were similar in some way, despite the fact that the two languages used different orthographies. The impact of L1 reading strategies on L2 reading was also revealed from the data interpretation. More specifically, the participants' reading strategies in Chinese reading can be beneficial to their English reading in some aspects. They explicitly identified several strategies acquired from learning their L1, which subsequently could be applied to reading their L2. For example, when asked if they perceive any impact of L1 reading on L2 reading, a high proficiency student Guo (S2) clearly knew the advantages of making use



of reading strategies in Chinese for his English reading.

“Reading strategies are similar for both Chinese and English materials. Some strategies I initially learned from Chinese reading and subsequently applied to English reading, such as inferring from a title, focusing on key information, summarizing the main ideas, re-reading for better understanding and using background knowledge.” (Ex.68: S2, H)

Guo’s (S2) explanation shows that global (using background knowledge), problem-solving (re-reading for better understanding) and support reading strategies (summarizing main ideas) were all employed during his English reading. These strategies were not intentionally acquired for L2 reading; rather, they were automatically transferred from L1 to L2.

Like Guo (S2), intermediate students also discovered certain L1 strategies that could be of help to their L2 reading comprehension. For instance:

“Chinese reading strategies such as identifying a topic sentence from a text, paying close attention to reading, and re-reading could be applied to English reading. I read English in some

ways as I do in Chinese.” (Ex.69: S5, I)

At the same time, some other participants also indicated that Chinese reading ability and strategies help enhance English reading, as exemplified in the following extract:

“Chinese reading ability can enhance my comprehension skills and practise my concentration. It helps my English reading which could benefit from it.” (Ex.70: S3, H)

“In general, our classmates who have good Chinese proficiency always get good achievement in their English. I think Chinese and English learning have something in common. Chinese reading can assist English reading.” (Ex.71: S4, H)

“My Chinese teacher taught us to summarize the main idea and search for key information when reading Chinese, which I often apply to my English reading.” (Ex.72: S10, L)

Nonetheless, some of the interviewees stated there are marked differences between reading the two languages. In their L1 reading, they read faster and

rarely use dictionaries. On the other hand, they read English slowly and often refer to dictionaries to check unknown words, and translate from L2 to L1.

“I think that there are many differences. I have used some approaches in reading Chinese. For example, when I read Chinese newspapers, I don’t have to read everything. I can get the general idea by reading some words and sentences related to the topic. However, I think it is very difficult to apply this method to reading English, as I am not familiar with English words. I have to read word-by-word through translation. It is impossible to find the main points at one go. Therefore, I think it is very hard to apply the method.” (Ex.73: S7, I)

Furthermore, the participants also commented that reading in Chinese did not involve unknown words and phrases as was the case when reading in English. Three of the four low proficiency students said that they were not successful in English reading only because they did not have a large vocabulary, and that English grammar was complicated.

“Chinese reading strategies can be used in English reading, but it is under the condition that one must have a certain amount of

English vocabulary to comprehend the text. If not, reading strategies don't work.” (Ex.74: S12, L)

In summary, most of the participants realized that they employ similar strategies for their English and Chinese reading in some way. They learned some strategies in their L1 reading and then applied them in their L2 reading. These approaches included inferring from a title, focusing on key information, predicting the text meaning, summarizing and using background knowledge. Also Chinese reading strategies can benefit their English reading strategy use. However, low proficiency students seemed to be prevented from transferring reading strategies in Chinese to reading in English on account of their low English proficiency. This indicates that EFL students need to develop L2 proficiency to a certain threshold level in order for the transfer to occur.

#### **5.4 Other Factors that Influence Junior Secondary School Students' English Reading**

Based on the semi-structured interviews, the data analysis revealed that some factors have also influenced students' English reading. The high, intermediate and low proficiency participants reported differently on a number of individual



factors including vocabulary and motivation of learning and reading English as well as social factors such as their teachers' guidelines and parents and family members' support for their English learning.

#### **5.4.1 Individual factors**

##### **5.4.1.1 Vocabulary**

Vocabulary knowledge is one of the best indicators of reading achievement (Richek, 2005). Bromley (2004), in a comprehensive review of research on vocabulary development, concludes that vocabulary knowledge promotes reading fluency, boosts reading comprehension, improves academic achievement and enhances thinking and communication. The interview data showed that the high, intermediate and low proficiency participants all regarded vocabulary as their greatest concern in their L2 reading and lack of vocabulary as the biggest problem in their English reading. The following extracts are representative,

“My biggest problem in English reading is that I don't have a large vocabulary. When I feel the text is difficult to understand, it is mainly because my vocabulary is limited.” (Ex.75: S4, H)

“My vocabulary is very weak and this is a big problem for me. In most instances, I can’t understand a sentence or a paragraph because there are so many new words.” (Ex.76: S6, I)

“I have problem with so many difficult words in English. I do memorize the word lists of our textbook, but I was still always daunted by lots of unknown words and didn’t understand the whole passages when taking exams. Without enough vocabulary, reading skills don’t help me understand the text and succeed in English reading. ” (Ex.77: S11, L)

It seems that both the high and low proficiency participants have to face the similar challenges and problem with vocabulary. They all reported that without good lexical knowledge, reading in English would be very difficult. It seemed that vocabulary was the basic condition for meaning construction for them. Vocabulary knowledge plays a key role in students’ overall reading understanding of a text.

Furthermore, some intermediate and low proficiency participants explained how their small repertoire of vocabulary hindered their understanding of the text,



even though they knew each of the individual words in a phrase. For example:

“When I read the text, I have a lot of problems understanding difficult words, especially phrases and terms. For example, I cannot understand the sentence from the reading task—‘In Beijing, more and more people are *taking part in* the activity.’ I know every word of the sentence, but I can’t make sense of the sentence.” (Ex.78: S5, I)

“I usually get stuck on some parts of a text I read because of the phrases and terms used. I don’t know how to understand the text without knowing what the phrases and terms mean first.” (Ex.79:S8, I)

As revealed above, student Liang (S5) did not get the meaning of the phrase ‘take part in’ which hindered his understanding of the whole sentence and the other student pointed out how important it is to be aware of the meanings of the terms and phrases they encountered while reading in order to fully understand the text. It indicated that a lack of vocabulary and difficulty in understanding phrases and terms hindered their comprehension from time to time. In contrast,

a large vocabulary and a good understanding of the phrases and terms can facilitate reading comprehension. Furthermore, junior secondary school students are still at the language developmental process. The need to expand their scope of knowledge and enlarge their vocabulary is necessary for all the three proficiency groups. Also, it shows that learners in this study have difficulty in mastering phrases such as ‘take part in’ as shown above. Nation (2001) talked about the role of chunking in the language learning and indicated that “the memorization of unanalyzed chunks” is an important learning strategy (p.336). Students who are in the early stages of language learning should try to memorise useful chunks and phrases to enlarge their vocabulary.

#### **5.4.1.2 Learning motivation**

It is widely acknowledged that motivation is essential to success in language learning (Dörnyei, 2003; Gardner, 1990). A truly-motivated student usually makes great efforts in language learning and enjoys learning tasks (Gardner, 2001). Indeed, motivation plays a role in determining L2 achievements (Dörnyei, Csizer, & Nemeth, 2006). Throughout the interview, integrative motivation and instrumental motivation of learning and reading English were both frequently mentioned by the high and intermediate proficiency participants



as opposed to the low proficiency participants, as exemplified by the following extracts:

“I am very interested in learning English. After school, I often read English stories from all genres, such as folk tales, legends, adventures, chapters of comic and picture books. It can improve my English proficiency. Due to my good English performance, I dream I could be a translator in the future.”

(Ex.80: S1, H) (integrative motivation)

“When I was in primary school, I didn’t enjoy learning English because I could not get good exam scores. But English is a very important subject in middle school, so I had to study English hard. When I entered the junior secondary school, the academic achievement became my aim for learning English.” (Ex.81: S7,

I) (instrumental motivation)

However, the unsatisfactory examination achievement and learning difficulties impede low proficiency students’ motivation to learn English, as one of the low proficiency participants reported:

“There were so many new words and grammar rules and it was

more and more difficult to remember them. I gradually lost interest in learning English due to my poor examination results. Although English is an important subject, I do not like learning it. I have no choice but to learn it as it is an important subject. I only finish my homework and seldom read my English textbook and other materials after class.” (Ex.82: S11, L)

Throughout the interview, improving English proficiency and achieving satisfactory examination results stand out as a strong indicator of students’ motivation and interest. Moreover, the data reveal that their learning motivation is in line with their English proficiency. All the four high proficiency participants showed their interest in learning English and that they enjoy extracurricular reading. They were not limited to reading English textbooks. Naturally, they thought it would surely help enhance their English proficiency. As for the intermediate proficiency participants, only two participants mentioned that they were somewhat interested in learning English and enjoyed reading English stories and proverbs after class. The other two participants stated that their motivation in learning English is only for getting good examination results as English is a very important subject. However, all of the four low proficiency participants indicated they felt compelled to learn English

in school with little interest as English is a compulsory subject. Moreover, their low proficiency as well as the difficulties and challenges they encountered impeded their motivation to learn English.

#### **5.4.2 Social factors**

##### **5.4.2.1 Teachers**

Teachers play a critical role in supporting language development (Wong-Fillmore & Snow, 2005, p.7). Teachers' efforts improve language learners' ability to learn a language (Wenden, 2002, p.32). The interview data analysis showed that the participants' comments on their school teachers cover two major aspects: attention and praise as well as instructional approaches to learning and reading. High proficiency students indicated how teachers' praise and encouragement influenced their sense that they were doing well. Below are typical responses:

“The more compliment I got from my teachers, the more I like in learning English. Without teachers' attention and encouragement, I would not have learnt so much and done well.” (Ex.83: S2, H)

“I really enjoy learning English and it was my favourite subject at school. I am quite inspired by my current English teacher, so I want to learn more and keep my good achievement because my teacher expects me to do so.” (Ex.84: S3, H)

“I don’t like my former English teacher, so my English performance was not good at that time. However, I like my current English teacher very much. She often reads some interesting stories for us and then asks us to do role-play according to the stories. I learn some words by heart gradually and can read some short stories easily. Her encouragement stimulates me do better and better in learning English.” (Ex.85: S7, I)

The participants also held a positive view of their teachers’ influence on their approach to reading. The following examples suggest that the teacher taught them the reading strategies needed to read a text and deal with the unknown words.

“The teacher suggested that we could scan and get the meaning of the reading questions and then read the text with a purpose. I

think it is a very efficient way when answering reading comprehension questions. Meanwhile, I preview the text to decide which part I should pay attention to read.” (Ex.86: S4, H)

“The teacher taught us that we need to read a passage three times and each time for different purposes: to obtain the gist, to read for detail, to pinpoint or clarify some difficult parts, etc. I always follow this approach and when I get to the most important part of the text, I try to look for key words and main ideas.” (Ex.87: S8, I)

“When encountering the unknown words, the teacher taught us that we should try to skip them and look for some contextual clues. If I still cannot get their meaning, I will answer the questions according to my background knowledge and it often works” (Ex.88: S10, L)

The above data suggest that the participants not only employed the approaches to reading which they learned from teachers, but also applied with some success

to more self-directed learning situations. The participants also mainly held positive attitudes towards their English teachers and their teachers affected the participants' English language development as language learners.

#### **5.4.2.2 Parents**

In language learning research, parental involvement is commonly considered to contribute to learners' language learning, especially Chinese parents, are often closely involved in their children's second or foreign language learning (Sung & Padilla, 1998). Chinese parents provide immense support for their children's development as English language learners (Wenden, 2002). Most of the high proficiency and intermediate proficiency participants stated that their parents had positive attitudes towards their English learning, highlighting the importance of English language for their future, as exemplified by the following extracts:

“My parents are very strict with me. They have been telling me about the importance of English. They expect me to have a good English learning performance at school and acquire more knowledge that would be quite helpful to my future.” (Ex.89: S3, H)

“My parents always told me about the importance of English when I was very young. I was also told by my grandparents, uncles and aunties. They all convinced me that English is very important and often encouraged me to study it hard.” (Ex.90: S6, I)

Also, all of the four high proficiency participants indicated that their parents were involved in their English learning and helped them improve their English.

“My parents tried their best to support my English learning, such as buy children’s books and cartoon DVDs of English for me when I was in kindergarten. Also, my mom told the importance of memorizing and reciting words from the textbooks and other extracurricular reading materials. Later, my parents took me to tutorial classes on Saturdays when I got to junior middle school. I think I benefit a lot from the extracurricular English learning.” (Ex.91: S2, H)

“My mom sent me to English training classes when I was just in Primary 1. She asked me to learn and recite every article from

‘New Concept English’ every day. She also accompanies me to English Corner sometimes. I do think my good English achievement is in part due to all the help she has given me.”  
(Ex.92: S3, H)

However, only one low proficiency participant mentioned his family helps him with his English learning.

“My sister’s English performance is very good. She taught me grammar and English learning methods. She helped me a lot when I had problems with school assignments.” (Ex.93: S12, L)

Parental support is a big key to academic success. Chinese parents are as closely involved in their children’s development as English language learners as they are in their academic development (Stevenson & Stigler, 1992). The interview data revealed that most of the high and intermediate proficiency participants’ family members have provided great support and been much involved in their English development. However, only one low proficiency participant mentioned his family had supported his English learning.



## 5.5 Summary of the Qualitative Data Analysis

The qualitative data showed that the participants at different reading proficiency levels were aware of various metacognitive strategies when engaged in English reading. The three proficiency groups of students all used the metacognitive strategies of “using background knowledge” (GLOB) and “using context clues” (GLOB) within the global reading strategies which match the quantitative results of the top five strategies that were used most by the 272 participants when reading in English (See Table 13). Meanwhile, the metacognitive strategies of “preview the text before reading” (GLOB), “paying close attention to reading” (PROB) and “guessing meaning of unknown words” (PROB) were frequently used by the participants, as revealed from the qualitative data analysis, and also match the top five strategies in Table 13. In addition, the reading strategies of the least used five strategies in the quantitative analysis (see

Table 14) were not mentioned by any of the twelve participants during their stimulated recalls and semi-structured interviews.

Table 28 summarized the reading strategies applied by the three proficiency groups of students before, while and after their English reading.



Table 28: The Steps of the English Reading Strategy Use by the Three Proficiency Groups

	High proficiency Group	Intermediate proficiency Group	Low proficiency Group
Pre-reading	<ul style="list-style-type: none"> <li>● Previewing the text before reading (GLOB)</li> <li>● Reading the questions before reading the text (supplementary)<sup>2</sup></li> <li>● Predicting or guessing text meaning (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>● Previewing the text before reading (GLOB)</li> <li>● Reading the questions before reading the text (supplementary)</li> </ul>	<ul style="list-style-type: none"> <li>● Reading the questions before reading the text (supplementary)</li> </ul>
While-reading	<ul style="list-style-type: none"> <li>● Planning reading for better completing tasks (GLOB)</li> <li>● Guessing meaning of unknown words (PROB)</li> <li>● Using context clues for better understanding (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>● Using background knowledge (GLOB)</li> <li>● Translating from L2 into L1 (SUP)</li> <li>● Using context clues for better understanding (GLOB)</li> <li>● Consulting a dictionary (SUP)</li> </ul>	<ul style="list-style-type: none"> <li>● Adjusting reading rate (PROB)</li> <li>● Reading slowly and carefully (PROB)</li> <li>● Using background knowledge (GLOB)</li> <li>● Using context clues for better</li> </ul>

<sup>2</sup> Supplementary strategies refer to those not included in one of the three categories (GLOB, PROB or SUP).

	<ul style="list-style-type: none"> <li>● Using background knowledge (GLOB)</li> <li>● Going back and forth in the text (SUP)</li> <li>● Paying close attention to reading (PROB)</li> <li>● Re-reading for better understanding (PROB)</li> <li>● Reading slowly and carefully (PROB)</li> <li>● Checking understanding (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>● Underlying information in the text (SUP)</li> <li>● Paying close attention to reading (PROB)</li> <li>● Re-reading for better understanding (PROB)</li> <li>● Reading slowly and carefully (PROB)</li> <li>● Checking understanding (GLOB)</li> </ul>	<ul style="list-style-type: none"> <li>understanding (PROB)</li> <li>● Translating from L2 into L1 (SUP)</li> <li>● Thinking in both languages (SUP)</li> <li>● Skipping difficult sentences and sections (supplementary)</li> <li>● Determining what to read closely (PROB)</li> <li>● Wild guessing and randomly answering questions (supplementary)</li> </ul>
Post-reading	<ul style="list-style-type: none"> <li>● Consulting a dictionary (SUP)</li> <li>● Asking others for help (supplementary)</li> </ul>	<ul style="list-style-type: none"> <li>● Double checking answers (supplementary)</li> <li>● Asking others for help (supplementary)</li> </ul>	<ul style="list-style-type: none"> <li>● Asking others for help (supplementary)</li> </ul>



Based on the qualitative data, the strategies (see Table 28) employed by the twelve chosen students at three proficiency levels in the three-step-process of their English reading were also generally consistent with the results of the most-used strategies by the three proficiency groups of 272 participants in the quantitative analysis (see Table 20). Moreover, some additional reading strategies were also used by students of different levels of proficiency. Specifically, “reading the questions before reading the texts” and “asking others for help” were used by all the three groups of students; “planning reading for better completing tasks” and “going back and forth in the text” were favoured only by high proficiency students; “consulting a dictionary”, “re-reading for better understanding” and “checking understanding” were adopted by both the high and intermediate proficiency students; “underlying information in the text” and “double checking answers” were employed only by intermediate proficiency students; “skipping difficult sentences and sections”, “determining what to read closely” and “wild guessing and random answering questions” were applied by low proficiency students.

Overall, the different proficiency groups of students employed metacognitive strategies differently from each other both quantitatively and qualitatively. The

students' selection of metacognitive strategies in reading varied according to their reading proficiency. In order to comprehend English texts, the low proficiency students tended to make use of parsimonious strategies, such as adjusting reading speed, skipping difficult sentences and sections, and wild guessing and random answering of questions. In contrast with this group, the high and intermediate proficiency groups, especially the former, were more capable of utilizing sophisticated metacognitive strategies which include predicting the text meaning, planning reading and checking understanding. The intermediate proficiency group employed more support reading strategies to aid them in comprehending the text than high and low proficiency students, such as translating from English to Chinese, underlying information in the text and consulting a dictionary. This study indicated that EFL junior secondary school students used varied metacognitive strategies in order to comprehend the text and eventually solve their reading problems. More proficient students employed more sophisticated and global metacognitive strategies to monitor and manage their reading process.

Some strategies reported in the steps of reading strategy use by the twelve participants were not included in the SORS questionnaire, such as “reading the questions before reading the text”, “planning reading for better completing

tasks”, “going back and forth in the text”, “skipping difficult sentences and sections” and “asking for others’ help”. Therefore, the qualitative results further developed the SORS and future research might need to consider these strategies when dealing with Chinese students.

Furthermore, the qualitative study clearly showed that Chinese reading can benefit their English reading. Chinese reading strategies can be transferred to English reading, but EFL students need to develop their L2 proficiency to a certain threshold level for the transfer to occur. Some other individual factors, i.e. English vocabulary, motivation for English learning and reading as well as social factors, i.e. their teachers’ instruction and parents’ support, were also observed in the twelve participants, which result in the differences in their English reading proficiency and preferred strategy use.

Based on the results of the quantitative and qualitative data analyses presented in Chapter Four and Chapter Five, the next chapter discusses interpretations of the results in detail.

## **CHAPTER 6**

### **DISCUSSION AND CONCLUSION**

The findings of the current study reveal what and how metacognitive strategies are applied while reading English and Chinese by junior secondary students, a group seldom targeted by researchers. As stated earlier, the study examined the metacognitive strategies employed by the learners with different proficiency levels and attempted to explore the impact of L1 reading strategies on L2 reading strategy use. This chapter focuses on the discussion and interpretation of the results. It first summarizes the objectives of the study and is then followed by a discussion. Implications for teachers and students, limitations of the study and recommendations for further research are also put forward.

#### **6.1 Summary of the Study**

With English gaining increasingly importance in China, it is critical to explore ways to improve English reading proficiency for the academic success of Chinese junior secondary school students. In the review of the literature LLS, L2 reading and some factors influencing L2 reading, as well as metacognitive strategies in reading, were examined. This review led to the development of



three research questions and mixed-method research undertaken to explore three research objectives.

The first research objective was to examine metacognitive strategy use adopted by Chinese junior secondary school students who are at the early stage of language learning. The quantitative data obtained showed that all the participants in this study reported using metacognitive strategies at a moderate-frequency level when they were reading English and Chinese texts. Then, the qualitative data indicated that the students employed a repertoire of metacognitive strategies to deal with various kinds of comprehension problems and to meet the reading requirements while they are reading English texts. Therefore, students with certain metacognitive awareness showed that they enable to interpret a reading task.

The second research objective was to examine how proficiency can affect Chinese junior secondary students' metacognitive strategies in both their L1 and L2 reading. Quantitative analysis of the data revealed statistically significant differences between the levels of students' language proficiency and their use of metacognitive reading strategies. That is to say, students at the higher proficiency level were capable of employing metacognitive strategies

more frequently. Meanwhile, qualitative data showed that the twelve participating students at different reading proficiency levels were aware of metacognitive strategies when engaged in English reading. However, differences of the strategy use involved in the three-step reading process were evident and suggested that high proficiency learners were more concerned with achieving the overall meaning of the texts and were better at planning for reading and monitoring their comprehension.

The third research objective was to explore the impact of L1 reading strategies on L2 reading strategy use of Chinese EFL learners at junior secondary school level. The quantitative data analysis showed that the participants' metacognitive strategy use in reading English is generally consistent with their metacognitive strategy use while reading in Chinese. That is to say, Chinese reading strategies may be transferred to English reading at junior secondary school level. Furthermore, the semi-structured interviews indicated that Chinese reading strategies can benefit their English reading when EFL students reach a certain level in L2 proficiency.

The key to achieving the three research objectives lies in the mixed research method applied in this study. There follows a detailed discussion of the three

research objectives.

### **6.1.1 Metacognitive strategy use among Chinese junior secondary school students**

The quantitative data from this study showed that Chinese EFL junior secondary school students reported using the three categories of metacognitive strategies available when reading both English and Chinese texts at a moderate-frequency level. To be specific, the mean reported use of the metacognitive strategies in reading for English texts was 3.29, with a standard deviation of .772. The metacognitive reading strategy use with Chinese texts was 3.37, with a standard deviation of .740. It indicates that Chinese EFL junior secondary school students reported an overall higher level in using metacognitive strategies when reading in Chinese than in English. However, the difference in the use of the overall reading strategies between reading English and reading Chinese was not statistically significant using a paired-samples *t*-test:  $t(271) = -2.63; p > .05$ . These average ratings were lower than those of Zhang and Wu's (2009) study in which SORS was to investigate the use of metacognitive strategies when reading English among 249 EFL Chinese second-year students at a senior high school (Form 5, according to the Hong

Kong education system) in Hainan province of China and reported a grand mean of overall metacognitive strategy use in English of 3.50. That is to say, senior high school students apply metacognitive strategies more frequently than junior secondary school students while reading English texts. It agreed with the findings of Wu's study (2002) that, despite other factors, elder and more proficient readers appeared to have more awareness of their metacognitive skills.

Of the three SORS and MARSI strategy categories, the average score of PROB strategies was the highest, followed by GLOB reading strategies and SUP reading strategies. When problems in reading arose, most of these students were ready to adopt strategies like guessing meaning of unknown words, paying close attention to reading, reading slowly and carefully, re-reading for better understanding, and so on, to solve problems. By contrast, they least used SUP reading strategies like reading aloud for better understanding, taking notes while reading, finding links within the text and so on. Such results are in accordance with the findings of Mokhatari and Reichard (2002), Alsheikh (2002) and Zhang and Wu (2009), in which PROB reading strategies was the high usage category, and SUP reading strategies were the least frequently used among the three categories. Participants reported using more PROB reading

strategies than other strategies: English ( $M=3.42$ ) and Chinese ( $M=3.53$ ). Among the PROB reading strategies, “guessing meaning of unknown words” should be strongly encouraged in EFL programmes, especially for taking tests, such as high school or college entrance exams. Moreover, participants used the PROB reading strategies frequently both in their English and Chinese reading, such as paying close attention to reading, guessing meaning of unknown words, re-reading for better understanding and reading slowly and carefully. It can be seen that when problems in reading arose, most of these students were ready to adopt these strategies for better understanding the texts and solving the problems. The result of this study indicates that PROB strategies are most frequently employed by EFL Chinese students at junior secondary school level while reading L1 and L2.

Global reading strategies were reported to be the next most frequently used strategies. GLOB reading strategies focused on setting the stage for reading (previewing text content, predicting what the text is about). Even though the global reading strategy category was not ranked the most frequently used, the top three strategies that participants in this study employed all fell into this category. Using background knowledge and previewing text before reading were very frequently employed and ranked the two most used strategies when

reading both English and Chinese texts (see

Table 14 &

Table 17). Apparently, participants activated background knowledge and previewing text before reading, whether reading in English texts ( $M=3.64$ ,  $M=3.59$ ) or in Chinese texts ( $M=3.79$ ,  $M=3.72$ ) respectively. It has been shown that a reader's background knowledge in the form of schemata plays a major role in their active construction of meaning of the text (Anderson & Pearson, 1984). Participants in this study gave much credit to the use of background knowledge in both their English and Chinese reading. This indicates that successful L2 learners were capable of using personal and general knowledge to associate with the text being read and that background knowledge of the content material is a necessary component of academic competence (Block, 1992).

Support reading strategies, which means support methods or tools aimed at seeking to clarify text information (e.g., use of reference materials like dictionaries, underline information, ask oneself questions, and paraphrase to better understand) (Mokhtari & Reichard, 2002), were least frequently employed (Chinese,  $M=3.14$ ; English,  $M=3.19$ ). The mean of this category of reading strategies employed by the junior secondary school participants when reading English texts was slightly higher than that of reading Chinese texts, but

was not statistically significant using a Paired-Samples T-Test. The limited use of SUP reading strategies might have been due to participants' inability or unwillingness to use these SUP reading strategies when they had comprehension difficulties in reading English. The finding that support reading strategies were rarely employed when the junior secondary school participants read texts in English and Chinese in this study appears to contradict the results of Sheorey and Mokhtari (2001), who found that "ESL students attribute high value to support reading strategies regardless of their reading abilities" (p.445). However, the finding of this study supports Alsheikh's (2002) results that most of his subjects seldom used SUP reading strategies in Arabic and in English. Among the category of SUP reading strategies, "reading aloud for better understanding" and "taking notes while reading" were the two least employed strategies reported by all the 272 junior secondary school participants. There are several possible reasons for the infrequent use of SUP reading strategies: the focus of English education in mainland China is to prepare the students to pass English examinations of various kinds. Strategies like reading aloud and note-taking are not seen as linked to achieving good test scores. Moreover, students did not use these SUP reading strategies frequently when reading Chinese (L1) texts and then they were less likely to employ them when reading English (L2) texts.

### 6.1.2 Students' levels of proficiency and their use of reading strategies

The results based on multiple sources of data in this study indicated that different proficiency levels of students employed metacognitive strategies differently from each other both quantitatively and qualitatively. Specifically, as shown by the quantitative data analysis, Chinese EFL junior secondary students, who had a comparatively high proficiency in English and Chinese reported overall metacognitive strategy use at a high-frequency level in their English ( $M=3.75$ ) and Chinese ( $M=3.76$ ) reading, while intermediate and low proficiency students both reported using metacognitive strategies at moderate-frequency level when reading English (Intermediate:  $M=3.23$ , Low:  $M=2.67$ ) and Chinese (Intermediate:  $M=3.33$ , Low:  $M=2.64$ ) respectively. Higher proficiency students displayed a significantly higher mean on the use of metacognitive strategies than students who had lower English proficiency and the differences were statistically significant among the three groups. It appeared that students' reading proficiency was one of the most crucial factors impacting their employment of metacognitive strategies when reading English and Chinese texts. Students' strategy use is closely related to their overall reading proficiency. High proficiency learners demonstrated the most frequent use of





the three (GLOB, PROB & SUP) categories of strategies and they were distinguished from their low proficiency counterparts. The results lend evidence to support previous studies in which a significantly greater overall use of metacognitive reading strategies was found among more successful readers (Almasi, 2003; Block, 1986, 1992; Moktari & Reichard, 2002, Zhang & Wu, 2009). These researchers found a positive relationship between language proficiency and metacognitive strategy use both in English and Chinese reading and the same relationship was found in this study.

Additionally, the selected students' metacognitive strategy use in the actual English reading tasks varied according to their English proficiency. The qualitative data revealed that the higher proficiency students were more able to plan their reading and monitor their cognitive processes. Also, they were more aware of which strategies to use and how to use them at junior secondary school level. In contrast, the lower proficiency students had to rely heavily on bottom-up decoding strategies for processing information in English texts. This may suggest that EFL junior secondary school students with low competence in L2 experience a linguistic limit on their ability to read in L2.

In order to understand English texts, the low proficiency students tended to

make use of certain strategies that can be easily applied, such as adjusting reading speed, skipping difficult sentences and sections and wild guessing and randomly answering questions. In contrast with this group, the high and intermediate proficiency groups, especially the high proficiency group, was more capable of utilizing sophisticated metacognitive strategies which include predicting the text meaning, planning for reading and monitoring understanding. The intermediate proficiency group employed more support reading strategies to aid them in comprehending the texts than high and low proficiency students, such as translating from English to Chinese, using underlying information in the text and consulting a dictionary. This indicates that EFL junior secondary school students varied their metacognitive strategies to understand the text and eventually solve their reading problems. In addition, EFL Chinese junior secondary school students employed a number of distinct reading strategies in a three-step-process, i.e. before reading, during reading, and after reading, in comprehending English texts. Higher proficiency students can be more proactive than lower levels of students during each step of reading. More proficient students employed more sophisticated and global metacognitive strategies to monitor and manage their reading. The result produces evidence in support of Reichard and Mokhtari's (2002) finding that high proficiency readers showed more awareness of employing various reading strategies and were



aware of when and how to use these strategies in a systematic and strategic manner.

Another aspect that is worthy of further discussion concerns the translation strategy. During the stimulated recall session, this strategy was more frequently observed among the intermediate and low proficiency groups than the high proficiency group. The participants in these two groups relied on L1 translation when they read the English texts and preferred to translate the text and think about the content in their native language, which might help them better understand the information in the target language. This point echoes Zhang's (2001) finding that a more frequent use of translation was observed among Chinese readers who were struggling than among those more successful students.

### **6.1.3 Reading strategies in the first language (L1) and second language (L2)**

As junior secondary students are seldom targeted as a research subject, revelation of their metacognitive strategy use, as observed in the current study, vividly unfolds the maturation of language development with the application of a wide variety of strategy use, which seems rather unexpected. Equally

unexpected is the fact that they can already apply L1 reading strategies in their L2 reading at an early stage of language learning. When exploring the impact of L1 reading on L2 reading, the quantitative data analysis showed that the students employed similar strategies in reading both languages, such as using background knowledge, previewing text before reading, paying close attention to reading, and guessing meaning of unknown words. The data also shows that the interviewed students were aware that they were utilizing the strategies they learned from their L1 reading in reading English. The qualitative data also revealed that students' strategy use in Chinese reading can benefit their English reading strategy use. They explicitly identified several strategies acquired from learning their L1, which subsequently could be applied to reading their L2. This finding provides support for Grabe's (2009) argument in that L2 readers may use and extend their L1 reading strategies and experiences in their L2 reading. The finding of this study is also consistent with the view of scholars who affirm that L1 reading strategies can promote the learning and practice of students' L2 reading approaches (Dressier & Kamil, 2006; Garcia, 2003). The students in this study generally approached EFL reading after they had been learning their Chinese for a few years and had developed an awareness of Chinese reading strategies. As a result, it is natural that they should transfer some of their

Chinese reading strategies to EFL reading (Grabe & Stoller, 2002; Zhang, 2008).

Grabe and Stoller (2002) stated that transfer “refers to the idea that L2 readers will use their L1 knowledge and experience to help them carry out L2 reading tasks” (p.52). More specifically, transfer can occur with general background knowledge, problem-solving strategies and inferencing skills. Therefore, the junior secondary school students used the problem-solving reading strategies frequently both in their English and Chinese reading, such as paying close attention to reading, guessing meaning of unknown words, re-reading for better understanding and reading slowly and carefully. It may indicate that Chinese EFL junior secondary school students who are at an early stage of both L1 and L2 learning have acquired these strategies when learning Chinese and then transfer them into their English reading. The Pearson’s correlation coefficient of the quantitative results showed that there is a fairly strong correlation between the participants’ metacognitive strategy use in reading English and Chinese. That is to say, the metacognitive strategy used by Chinese junior secondary school students in reading English is generally consistent with the metacognitive strategy while reading in Chinese. The finding corresponds with the study of a Chinese researcher Tang (2001) who investigated four ESL



students who used similar reading strategies when reading English and Chinese narrative texts. The results of this study indicate that Chinese EFL adolescent learners used similar strategies while doing L1 and L2 reading. It also shows that these young learners who are at an early stage of language learning have already acquired the ability to apply Chinese reading strategies in their English reading process and that they realize the L1 reading strategies can benefit their L2 reading.

In addition, a low L2 proficiency seemed to hinder the low proficiency students from transferring their reading strategies in reading Chinese to reading in English. This study indicates that EFL readers need to develop L2 proficiency to a certain threshold level in order for the transfer to occur. This echoes Bernhardt and Kamil's (1995) findings that a higher L2 proficiency may make it easier for the participants to transfer the higher level cognitive and metacognitive knowledge across the reading of two languages. This study also generally supports the Linguistic Threshold Hypothesis (Clarke, 1979; Alderson, 1984; Bernhardt & Kamil, 1995).

#### **6.1.4 Students' English reading difficulties**



In the semi-structured interviews, most of the twelve participants reported that vocabulary was the most difficult part of learning and reading English. They often encounter unknown words during their English reading. The finding of this study corresponds with those from Chumpavan (2000), Fitzgerald (1995) and Koda (2007) where vocabulary and grammatical structures were identified as the major obstacles to success in L2 reading. When reading English texts, a great number of unfamiliar words and complex grammatical structures usually prevent readers from fully comprehending the information. It is clear that vocabulary is a big challenge and obstacle for most of the students in this study and they reported using problem-solving strategies with English texts like adjusting reading rate, guessing meaning of unknown words and paying close attention to reading, which ranked in the top five of the most used self-reported reading strategies.

One difference among levels of participants that emerged from the study was that the intermediate proficiency students seemed to often use dictionaries to translate unknown vocabulary from English into their native language, whereas the high proficiency students did not use this strategy that much. However, low proficiency students seemed to give up or just guess the meaning of the unknown words as there were too many new words for them to consult a

dictionary. As a result, for most of the low proficiency students, English reading is “time-consuming” as they encountered too many new words and thus they hold a negative attitude towards English reading and gradually lost interest. They also blamed themselves for not having enough vocabulary and grammatical knowledge.

Promoting students’ vocabulary knowledge has become an educational priority as it is closely associated with their linguistic competence and thereby academic achievement (Fan, 2003; Gu, 2003, 2005; Ma, 2009). Helping students to develop a strong academic vocabulary, including commonly used phrases and language chunks requires the skill of look up words in a dictionary. Rather, students need effective instruction that assists them in acquiring new word knowledge and developing strategies that enable them to increase the depth of that knowledge over time. Moreover, motivation is linked with high frequency use of LLS (Oxford & Nyikos, 1989). Van Lier (1996) provided evidence that motivation was important in second language learning and may contribute to students’ academic success. Teaching students how to use reading strategies to solve comprehension problems should start with increasing their motivation to read (Guthrie, 2001; Guthrie & Alao, 1997). Previous studies demonstrated that the degree of expressed motivation to learn the language had a significant main





effect on strategy choice (Oxford & Nyikos, 1989; Oxford & Ehrman, 1995; Wharton, 2000). This suggests that we can help EFL students to raise their motivation in English learning and reading. We should also make Chinese EFL junior secondary school students perceive the value and importance of learning English: to communicate in English, to prepare the senior high school entrance examination and, in the future, to get a good job requiring good English ability.

The focus on metacognitive strategies in reading English and Chinese for EFL younger learners in this study is intended to provide suggestions to help these students who are at an early stage of English learning and improve their English reading proficiency. The results of this study suggest that high proficiency learners seem to be distinguished from their low proficiency counterparts in reading strategy use. Highly proficient learners are better at planning for reading, monitoring their comprehension, and selecting appropriate strategies. Therefore, low proficiency learners will benefit from training in the metacognitive strategy which their high proficiency counterparts employ frequently, as suggested by some researchers who have obtained positive effects of strategy training on EFL and ESL learning (e.g., Carrell et al., 1989; Hudson, 1998; Zhang & Wu, 2009). EFL educators may explore these results and focus on the need for explicit metacognitive strategy instruction in the classroom and



in various second language reading contexts. The findings of this study suggest a number of pedagogical implications in EFL settings.

## **6.2 Pedagogical Implications**

This study examined Chinese EFL junior secondary school students' metacognitive strategy use when reading in English and Chinese. The results of this study have some pedagogical implications for students and teachers.

An increased self-awareness of one's process of reading is needed for EFL students to make more efficient use of a wider range of strategic behaviors (Chamot & O'Malley, 1996). The use of metacognitive strategies is essential for EFL students at all levels. Students should learn what metacognitive strategies are, why they are important, how they can be used and when and how they should be transferred to new situations. Moreover, secondary school students are at a sensitive stage of development, the teenage years being a time of heightened self-awareness. This is an ideal stage to raise students' metacognitive awareness of their individual learning styles and provide them with wider choices of reading strategies (Rogers, 2008). Therefore, it is suggested that through self-directed learning, students may gradually develop

skills of managing their reading, regulating their reading process, and finally learn to be self-motivated, self-directed and self-regulated. In addition, the relationship between language proficiency and metacognitive strategy use in this study provided evidence that students' awareness of using reading strategies was related to their language proficiency. This finding suggests that developing a strong awareness of applying metacognitive strategies to the reading process may help L2 learners read more efficiently, and improve their English reading proficiency.

Although metacognitive strategies are mostly set out from the 'self' perspective, a proper guidance can certainly improve the efficiency of the reflection process. This highlights the importance of the role of the teacher's instructions. Firstly, as O'Malley and Chamot (1990) asserted, metacognitive strategies are responsible for regulating other strategies, so teaching students how to use these strategies appropriately becomes a prime consideration in the reading classroom. EFL teachers should raise their students' metacognitive awareness. Instead of only focusing on teaching content knowledge to the students, teachers need to think about how to help them become self-regulated and effective learners by increasing their awareness of the importance of metacognitive knowledge. It is believed that the teachers' explicit instruction can play a vital role in the

students' knowledge and use of metacognitive strategies. Therefore, teachers should consider delivering the metacognitive knowledge and strategy usage to their students' when designing and preparing effective language instruction lessons. It is advisable that teachers raise students' awareness of a wide range of reading strategies to help them comprehend the texts, process the text actively and monitor their comprehension. Teachers can play a vital role in enhancing students' awareness of metacognitive strategy use and in assisting them become "constructively responsive readers" (Pressley & Afflerbach, 1995). It is important for metacognitive strategy instruction to be integrated into the overall English curriculum so as to enhance students' metacognition with regard to reading. Such instruction can help promote an increased awareness of the mental processes involved in reading and the development of thoughtful and constructively responsive reading. Teaching students to become constructively responsive readers can promote skillful academic reading, which, in turn, can enhance academic achievement (Sheorey & Mokhtari, 2001).

Secondly, the results indicated that high proficiency students were distinguished from their low proficiency counterparts in strategy use and were more able to monitor and evaluate their reading processes. Therefore, low proficiency learners may benefit from an informed metacognitive strategy training course

that guides them to a better understanding and use of metacognitive strategies that are employed by high proficiency students in their English reading. The strategy of differentiation should particularly be applied in the training courses. By grouping students of different proficiency levels into the same group and allowing time for them to think aloud the strategies used while reading, the teacher can promote self-regulated learning in the classroom. Students are then given the opportunity to learn from each other and develop a better awareness of the application of strategy use. Therefore, low proficiency students can learn more about the effectiveness of metacognitive strategies proficient readers use and apply them to relieve comprehension difficulties and improve their English reading proficiency. Meanwhile, teachers with the appropriate amount of scaffolding can help students to develop L2 strategies for critically evaluating information while reading and let students work individually or in groups to discuss some possible ways in which they evaluate what they have read and report to the whole class.

Thirdly, according to Cohen (1998), metacognitive strategies which lead to effective reading and improved performance are divided into pre-reading (planning) strategies, while-reading (monitoring) strategies and post-reading (evaluating) strategies. Thus, teachers could recommend students to use the

different reading strategies in the pre-, while- and post-reading stages respectively. For example, in a lesson, they can teach students how to scan and guess the gist of a text before their reading. And then students could evaluate their metacognitive strategy use and receive feedback from their teachers, thus developing their metacognitive awareness of their own learning processes. Finally, the teacher should ask students to report the strategies they used, discuss reading difficulties they encountered and encourage students to express their opinions about the value of metacognitive strategies. If students show signs of confusion or need further assistance, teachers should provide clear explanations of how to remedy reading difficulties to enable them to become more self-directed. It is important that teachers explicitly explain why the strategy should be learned and used, which allows students to increase their metacognitive awareness to deal with the reading tasks.

Fourthly, developing the awareness that L1 reading strategies are transferable may assist L2 readers in their L2 reading. Cook (1992) indicated that “the L2 user does not effectively switch off the L1 while processing the L2, but has it constantly available” (p.571). Cook also maintained that when working with L2 learners, teachers must not treat the L2 in isolation from the L1. Indeed, according to Cook, “the L2 knowledge that is being created in them is

connected in all sorts of ways with their L1 knowledge” (p.584). Chinese plays a significant role in identifying and learning meaning of the English text in translating, guessing and predicting, checking comprehension and activating prior knowledge. It is also revealed from this research that students did not employ the monitoring and evaluating strategies in Chinese reading frequently, let alone automatically employ those metacognitive strategies in English reading without necessary training. Therefore, in order to promote positive reading strategy transfer from Chinese to English, it is recommended that teachers encourage students to consciously apply L1 reading strategies to L2 reading to enhance their English reading.

Fifthly, lack of vocabulary appears to be a critical obstacle for students at all proficiency levels. According to Graves (2000), students can be successful in understanding unfamiliar vocabulary during reading by learning about words, not simply acquiring new words. That is to say, instruction that integrates independent word-learning strategies is essential. Independent word-learning strategies are techniques that teachers can model and teach students so as to help them figure out the meaning of unknown words on their own. The effective word-learning strategies some researchers (e.g., Baumann, Edwards, Boland, Olejnik & Kame'enui, 2003; Blachowicz & Fisher, 2000) have

identified include: (1) the efficient use of the dictionary; (2) the use of word parts (prefixes, suffixes and roots) to unlock a word's meaning; and (3) the use of context clues. They argue that directly teaching these strategies can help students become better independent word learners.

Finally, teachers should attempt to help students maintain a high level of learning and reading motivation. This study indicated that high proficiency students were motivated and enjoyed reading. In other words, they read with interest and perseverance and were capable of choosing their time for reading. With regard to students' motivation to read, teachers may provide students with more authentic reading materials from newspapers, magazines and books. Students are encouraged to read extensively, engage in reading activities and have small group discussions when they share their thoughts and summarize the texts. At the same time, teachers should pay special attention to selecting texts that address students' interests according to their level of English proficiency. In this study, regardless of their language proficiency, students used their background knowledge frequently when reading. Teachers should gradually proceed from easy texts to difficult ones with topics that are more interesting to students, and incorporate a student-centred approach in order to boost their confidence and build a greater sense of achievement.



### 6.3 Limitations of the Study

The study has revealed some findings which uncover Chinese junior secondary school students' metacognitive processes which are involved in reading both L1 and L2 as well as inform EFL reading instruction. However, some limitations exist in this study.

The first limitation is that even though the stimulated recall protocol was used in the study in order to gain detailed information on how Chinese EFL students actually used metacognitive strategies, it was impossible report all possible strategies that can be utilized for them to accomplish their reading tasks. Some students might not be able to precisely articulate their metacognitive processes while undertaking the stimulated recall sessions or they might misreport what they were doing because they were not very accustomed to the stimulated recall procedures as a research tool. In order to overcome this limitation in future study, data will be collected over a longer period employing various data collection methods which may include the researchers' classroom observation, teachers' evaluation and participants' reflective journal writings. This may lead

to a more thorough exploration of the participants' metacognitive strategy use in both English and Chinese reading.

The second limitation is that the current study was only conducted in Taiyuan, Shanxi province. Although great care was taken in conducting the study, additional research is needed to test the validity of the results and, particularly, its dimensionality. This research was conducted in Taiyuan, China. While it is a provincial capital and a typical city of China in the north, it is important that the findings of this study should be further testified in other cities and regions given the existence of widely acknowledged regional differences of the country (Hu, 2003)

The last limitation is that 272 participants is a relatively low sample size for a survey study and this limits the validity of the results. Therefore, additional research with larger samples may help to validate the results of this study.

#### **6.4 Recommendations for Further Research**

Based on the results of this study, five recommendations for further research are made. First, metacognitive strategies in research are called for to further explore

second language learners' metacognitive strategy use and how they appropriately select and effectively utilize those strategies when reading L1 and L2 at an early stage of language learning. This research topic has so far received inadequate attention in the field of metacognitive reading strategy research. Although these students are still in their developmental process in terms of L1 and L2 reading, much can be found by a close examination of their metacognitive strategy use in reading both languages.

Second, this study draws attention to the impact of L1 reading on L2 reading by likert-scale questionnaires, stimulated recalls and semi-structured interviews and produces clear evidence that L1 reading strategies can be transferred to L2 reading at junior secondary school level. As this study places its focus on students' English reading process, future research may investigate young learners' actual use of the metacognitive strategies both in their English and Chinese reading by using stimulated recall or think-aloud tasks and examine if there exists a two-way tendency for the strategies to transfer. This is to find out whether reading strategies could be transferred from L1 to L2 or vice versa.

Third, as this study explored students' metacognitive strategy use from the combined use of likert-scale questionnaires, stimulated recalls and

semi-structured interviews in the mixed-method design, further studies may benefit from using a variety of tools to explore students' metacognitive awareness and reading strategy use. Examples of such instruments include the researchers' observations, teachers' evaluation and students' reflection journals. These may further research what, when and how students effectively implement different reading strategies.

Fourth, one of the objectives of this study is to explore what similarities and differences exist between the use of reading strategies among different proficiency levels of learners. Students from the high proficiency group and those from the less proficient groups employed metacognitive reading strategies differently in terms of both frequency and quality of use. Thus, it is clear that metacognitive strategies contribute to reading proficiency. In further research, the significance of metacognitive strategies for other language skills (i.e., listening, speaking and writing) should be examined in order to confirm that this type of strategy is essential to these skills as it is to reading comprehension.

## **6.5 Conclusion**



This study showed that Chinese EFL junior secondary school students reported applying metacognitive strategies at a moderate-frequency level overall when reading both L1 and L2 texts. Students' English and Chinese language proficiency had an impact on their metacognitive strategy use while reading. The metacognitive strategies reported being used by the three levels of English and Chinese proficiency groups were significantly different. High proficiency readers use more metacognitive strategies than less proficient readers. Moreover, the metacognitive strategies used in reading English were generally consistent with those involved in reading Chinese. That is to say, the adolescents used very similar metacognitive strategies in both Chinese and English reading. This suggests that L1 reading strategies can be transferred to L2 reading at junior secondary school level.

These results are confirmed by the sequential qualitative findings. The qualitative results showed that the participants at different proficiency levels were all aware of metacognitive strategies when engaged in English reading. When encountering challenges in reading comprehension, the students used metacognitive strategies, such as context clues, re-reading for better understanding, paying close attention to reading and guessing the meaning of unknown words. On the other hand, there were differences in strategy use

involved in reading among the participants with different proficiency levels, such as planning for reading, consulting dictionaries and monitoring their comprehension. These differences suggested that high proficiency readers were more concerned with obtaining the overall meaning of the texts. In addition, the results revealed that some important factors, such as L1 reading strategies, vocabulary, motivation, teachers and parents, may have influenced EFL junior secondary school students' English learning and reading.

This study enriches the research on students' metacognitive reading strategy in China and has provided practical implications for both students and teachers. By confirming that metacognition leads to self-regulated learning and therefore more effective learning, certain instructional methods can be promoted among English learners to enhance reading proficiency. Students at junior secondary school level are encouraged to become more aware of their reading processes and reflect on their own strategy use at a deep level. Meanwhile, English teachers can apply the pedagogical strategies suggested in this thesis to the Chinese learners for developing their English reading proficiency. It is hoped that this study can serve the larger community of English language education at junior secondary school level in China by helping learners achieve greater competence in English reading with a strategic application of metacognitive



strategies.

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## Appendices

### Appendix 1. Survey Of Reading Strategies

Kouider Mokhtari and Ravi Sheorey (2002)

The purpose of this survey is to collect information about the various strategies you use when you read school-related academic materials in English (e.g., reading textbooks for homework or examinations; reading journal articles, etc.). Each statement is followed by five numbers, 1,2,3,4, and 5, and each number means the following:

‘1’ means that ‘I never or almost never do this’

‘2’ means that ‘I do this only occasionally’

‘3’ means that ‘I sometimes do this’ (About 50% of the time.)

‘4’ means that ‘I usually do this’

‘5’ means that ‘I always or almost always do this’

After reading each statement, circle the number (1,2,3,4, or 5) which applies to you. Note that there no right or wrong responses to any of the items on this survey.

#### 作答说明

一. 本量表共30 题，主要是了解你在阅读英语学习教材（例如一篇英语课本上的课文，或者一篇英语考试中的短文，或者英文报纸杂志上的文章等等）时所使用的各种英语阅读方法。

二. 每个题目均有五种不同等级的程度，分别为1、2、3、4 或5，他们代表如下：

“1”表示“我从未或几乎不使用此阅读策略”。

“2”表示“我只是偶尔使用此阅读策略”。

“3”表示“我有时候使用此阅读策略”（大约有一半的时候是这样）。

“4”表示“我常常使用此阅读策略”。

“5”表示“我总是或几乎每次都使用此阅读策略”。

三. 请读完每题叙述后，圈选一个最符合你使用阅读策略程度的答案。请注意，答案并无对错之分，请据实回答。

Type	Strategy	Scale				
GLOB 1	I have a purpose in mind when I read. 当我阅读一篇英文文章时，我知道为何要阅读此篇文章。	1	2	3	4	5
SUP 2	I take notes while reading to help me understand what I read. 我会一边阅读，一边做笔记，来帮助自己了解文章内容。	1	2	3	4	5
GLOB 3	I think about what I know to help me understand what I read. 我会用已知的知识来帮助自己了解文章内容。	1	2	3	4	5
GLOB 4	I take an overall view of the text to see what it is about before reading it. 在阅读前，我会先浏览一下文章的内容是关于什么的。	1	2	3	4	5
SUP 5	When text becomes difficult, I read aloud to help me understand what I read. 当文章难度增加时，我会大声地念出来，以帮助了解文章的内容。	1	2	3	4	5
GLOB 6	I think about whether the content of the text fits my reading purpose. 我会思考文章的内容是否符合当初所要阅读的目的。	1	2	3	4	5
PROB 7	I read slowly and carefully to make sure I understand what I am reading. 阅读英文文章时，我会小心慢慢地读，以确保自己理解了文章的内容。	1	2	3	4	5
GLOB 8	I review the text first by noting its characteristics like length and organization. 我阅读英文文章时会先留意文章的长度和组织。	1	2	3	4	5
PROB 9	I try to get back on track when I lose concentration. 当我分心时，我会试着把自己的思路拉回来。	1	2	3	4	5
SUP 10	I underline or circle information in the text to help me remember it. 我会在文章上画线或画圈来帮助记忆。	1	2	3	4	5

PROB 11	I adjust my reading speed according to what I am reading. 我会根据正在读的内容调整阅读速度。	1	2	3	4	5
GLOB 12	When reading, I decide what to read closely and what to ignore. 阅读文章时，我会决定哪些需要仔细地阅读，而哪些可以省略不读。	1	2	3	4	5
SUP 13	I use reference materials (e.g. a dictionary) to help me understand what I read. 我会使用工具书，例如字典，来帮助我了解文章内容。	1	2	3	4	5
PROB 14	When text becomes difficult, I pay closer attention to what I am reading. 当文章难度增加时，我会更加仔细地阅读。	1	2	3	4	5
GLOB 15	I use tables, figures, and pictures in text to increase my understanding. 我会使用文章中的图表、数字和图片来增进理解。	1	2	3	4	5
PROB 16	I stop from time to time and think about what I am reading. 我有时会停下来思考所阅读的文章内容。	1	2	3	4	5
GLOB 17	I use context clues to help me better understand what I am reading. 我会用上下文的线索来帮助自己更好地理解正在读的文章。	1	2	3	4	5
SUP 18	I paraphrase (restate ideas in my own words) to better understand what I read. 我会把一些内容改写成自己的话来帮助自己更好地理解所读的文章。	1	2	3	4	5
PROB 19	I try to picture or visualize information to help remember what I read. 我会想象文章内容的情景来帮助自己记忆。	1	2	3	4	5
GLOB 20	I use typographical features like bold face and italics to identify key information. 我用文章里字体的特征，例如粗体和斜体，来确认重要的信息。	1	2	3	4	5
GLOB 21	I critically analyze and evaluate the information presented in the text. 我会批判性地分析和评估文章内容中所包含的信息。	1	2	3	4	5

SUP 22	I go back and forth in the text to find relationships among ideas in it. 我会来回地寻找文章中作者的各种观点和看法之间的关系。	1	2	3	4	5
GLOB 23	I check my understanding when I come across new information. 我会检查自己对于文章中新信息的理解是否正确。	1	2	3	4	5
GLOB 24	I try to guess what the content of the text is about when I read. 阅读英文文章时，我会试着猜测文章中内容的意思。	1	2	3	4	5
PROB 25	When text becomes difficult, I re-read it to increase my understanding. 文章难度提高时，我会重读一次，以增加对文章的理解。	1	2	3	4	5
SUP 26	I ask myself questions I like to have answered in the text. 我问自己问题，并希望在文章中找到答案。	1	2	3	4	5
GLOB 27	I check to see if my guesses about the text are right or wrong. 我会检查自己对文章的猜测是否正确。	1	2	3	4	5
PROB 28	When I read, I guess the meaning of unknown words or phrases. 阅读英文文章时，我会猜测不懂的生词或短语的意思。	1	2	3	4	5
SUP 29	When reading, I translate from English into my native language. 阅读英文文章时，我会把英文翻译成中文。	1	2	3	4	5
SUP 30	When reading, I think about information in both English and my mother tongue. 阅读英文文章时，我会同时使用英文和中文思考文章内容。	1	2	3	4	5

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**Thank you for your cooperation!**



## Appendix 2. Metacognitive Awareness of Reading Strategies Inventory

Kouider Mokhtari and Carla Reichard (2002)

Directions: Listed below are statements about what people do when they read academic or school related materials such as textbooks or library books. Five numbers follow each statement (1, 2, 3, 4, 5), and each number means the following:

‘1’ means “I never or almost never do this.”

‘2’ means “I do this only occasionally.”

‘3’ means “I sometimes do this” (50% of the time).

‘4’ means “I usually do this.”

‘5’ means “I always or almost always do this.”

After reading each statement, circle the number (1, 2, 3, 4, or 5) that applies to you using the scale provided. Please note that there are no right or wrong answers to the statements in this inventory.

作答说明

一. 本量表共30 题，主要是了解你在阅读中文学习材料（例如语文课本上的课文，或者图书馆里的书籍等等）时所使用的各种中文阅读方法。

二. 每个题目的备选答案均有五种不同等级的程度，分别为1、2、3、4 或 5，他们代表如下：

“1”表示“我从未或几乎不使用此阅读策略”。

“2”表示“我只是偶尔使用此阅读策略”。

“3”表示“我有时候使用此阅读策略”（大约有一半的时候是这样）。

“4”表示“我常常使用此阅读策略”。

“5”表示“我总是或几乎每次都使用此阅读策略”。

三. 请读完每题叙述后，圈选一个最符合你使用阅读策略程度的答案。

请注意，答案并无对错之分，请据实回答。



Type	Strategy	Scale				
GLOB 1	I have a purpose in mind when I read. 当我阅读一篇中文文章时，我知道为何要阅读此篇文章。	1	2	3	4	5
SUP 2	I take notes while reading to help me understand what I read. 我会一边阅读，一边做笔记，来帮助自己了解文章内容。	1	2	3	4	5
GLOB 3	I think about what I know to help me understand what I read. 我会用已知的知识来帮助自己了解文章内容。	1	2	3	4	5
GLOB 4	I preview the text to see what it's about before reading it. 在阅读前，我会先预览一下文章的内容是关于什么的。	1	2	3	4	5
SUP 5	When text becomes difficult, I read aloud to help me understand what I read. 当文章难度增加时，我会大声地念出来，以帮助自己了解文章的内容。	1	2	3	4	5
SUP 6	I summarize what I read to reflect on important information in the text. 我会总结反思所读文章内容中的重要信息。	1	2	3	4	5
GLOB 7	I think about whether the content of the text fits my reading purpose. 我会思考文章的内容是否符合当初所要阅读的目的。	1	2	3	4	5
PROB 8	I read slowly but carefully to be sure I understand what I'm reading. 阅读中文文章时，我会小心慢慢地读，以确保自己理解了文章的内容。	1	2	3	4	5
SUP 9	I discuss what I read with others to check my understanding. 我会通过和其他人讨论所读文章的内容，来检查自己对文章的理解是否正确。	1	2	3	4	5
GLOB 10	I skim the text first by noting characteristics like length and organization. 我阅读中文文章时，会先粗略浏览一下文章的长度和组织结构。	1	2	3	4	5

PROB 11	I try to get back on track when I lose concentration. 当我分心时，我会试着把自己的思路拉回来。	1	2	3	4	5
SUP 12	I underline or circle information in the text to help me remember it. 我会在文章上画线或画圈来帮助记忆。	1	2	3	4	5
PROB 13	I adjust my reading speed according to what I'm reading. 我会根据正在读的内容调整阅读速度。	1	2	3	4	5
GLOB 14	I decide what to read closely and what to ignore. 阅读文章时，我会决定哪些需要仔细地阅读，而哪些可以省略不读。	1	2	3	4	5
SUP 15	I use reference materials such as dictionaries to help me understand what I read. 我会使用工具书，例如字典，来帮助我了解文章内容。	1	2	3	4	5
PROB 16	When text becomes difficult, I pay closer attention to what I'm reading. 当文章难度增加时，我会更加仔细地阅读。	1	2	3	4	5
GLOB 17	I use tables, figures, and pictures in text to increase my understanding. 我会使用文章中的图表、数字和图片来增进理解。	1	2	3	4	5
PROB 18	I stop from time to time and think about what I'm reading. 我有时会停下来思考所阅读的文章内容。	1	2	3	4	5
GLOB 19	I use context clues to help me better understand what I'm reading. 我会用上下文的线索来帮助自己更好地理解正在读的文章。	1	2	3	4	5
SUP 20	I paraphrase (restate ideas in my own words) to better understand what I read. 我会把一些内容改写成自己的话来帮助自己更好地理解所读的文章。	1	2	3	4	5
PROB 21	I try to picture or visualize information to help remember what I read. 我会想象文章中的情景来帮助自己记忆。	1	2	3	4	5

GLOB 22	I use typographical aids like boldface and italics to identify key information. 我用文章里字体的特征，例如粗体和斜体，来确认重要的信息。	1	2	3	4	5
GLOB 23	I critically analyze and evaluate the information presented in the text. 我会批判性地分析和评估文章内容中所包含的信息。	1	2	3	4	5
SUP 24	I go back and forth in the text to find relationships among ideas in it. 我会来回地寻找文章中作者的各种观点和看法之间的关系。	1	2	3	4	5
GLOB 25	I check my understanding when I come across conflicting information. 当我遇到内容冲突的地方时，我会检查下自己的理解是否正确。	1	2	3	4	5
GLOB 26	I try to guess what the material is about when I read. 阅读文章时，我会尝试着猜测所阅读的材料是关于什么的。	1	2	3	4	5
PROB 27	When text becomes difficult, I reread to increase my understanding. 文章难度提高时，我会重读一次，以增加对文章的理解。	1	2	3	4	5
SUP 28	I ask myself questions I like to have answered in the text. 我问自己问题，并希望在文章中找到答案。	1	2	3	4	5
GLOB 29	I check to see if my guesses about the text are right or wrong. 我会检查自己对文章的猜测是否正确。	1	2	3	4	5
PROB 30	I try to guess the meaning of unknown words or phrases. 阅读文章时，我会猜测不懂的生词或短语的意思。	1	2	3	4	5

Mokhtari, K., & Reichard, C. A., (2002). Assessing Students' Metacognitive Awareness of Reading Strategies. *Journal of Educational Psychology*, 94 (2), 249-259.

**Thank you for your cooperation!**

### Appendix 3. Semi-structured Interview Questions

1. 你从什么时候开始学习英语的？你每天花多久进行英语阅读？  
When did you start learning English? How many hours do you spend on English reading every day?
2. 你喜欢看英语读物吗？喜欢看哪些英文读物？你阅读目的是什么？  
Do you like reading English materials? Please list a few of your favourite extracurricular materials written in English. Why did you choose them?
3. 谈谈你的一些英语阅读经历，可以是让你感到有趣的，难忘的或者痛苦的。这些经历对你现在的英语阅读有影响或帮助吗？  
Tell me something about your English reading experiences. Maybe the experiences are interesting, unforgettable or painful. Do the experiences influence or help when you are reading English?
4. 当你开始阅读一篇英语文章时，你通常会想到什么？还是什么也不想就开始读？  
What is taken into account when you begin to read an English article? Or do you not think much and begin to read directly?
5. 阅读一篇英文文章遇到不明白的地方时，你会怎么办？(后备问题：“你会把不懂的地方重新读一遍？还是会尝试运用已知的经验和知识去理解它们？”)  
What do you do usually when you encounter something that you cannot understand in an English article? (Back-up questions, “Do you go back to the previous text during your reading? Or do you relate it to your previous experience or prior knowledge?”)
6. 阅读英语文章时，碰到不认识的单词，你怎么办？  
What do you do when you come to an English word that you don't understand?
7. 你在阅读英文过程中会把文章内容翻译成中文吗？  
Do you ever translate from English to Chinese when reading English texts?
8. 你知道哪些英语阅读技巧？你从什么地方（或者从谁那里）学到的这些技巧？你认为哪些技巧对你的阅读有帮助？

What English reading strategies do you know? Where did you get them?  
What kinds of strategies are helpful to your English reading?

8. 你觉得目前自己在英语阅读方面有哪些困难和问题?你准备怎样去改进它们?

Do you have any English reading difficulty and problem right now? How do you overcome/cope with it?

10. 除了英语课堂以外,你还在哪里可以学到阅读技巧?这些方法或技巧日后也能帮助你阅读英文吗?(如果学生回答不出来,则接下来这个问题作为后备问题:“你在语文课上学过什么中文阅读技巧和方法吗?”)

Besides the English classroom, where else can you learn reading strategies? What are the strategies? Are these reading strategies helpful to your English reading? (Back-up questions, “What reading strategies have you learned for Chinese reading?”)

11. 你在中文阅读中会使用哪些阅读技巧?你会把它们运用到英文阅读中吗?如果会,请举例说明。

What reading skills do you use while reading Chinese texts? And have you used these strategies for your English reading? If yes, please give me an example.

12. 阅读英文和阅读中文相比有什么不同的地方?中文阅读技巧对英文阅读技巧有什么影响吗?

How is reading English different from reading Chinese? Do Chinese reading strategies have any impact on English reading strategy use?

13. 你觉得中文阅读能力是否可以提升英文阅读能力?是如何提升的?

Does being able to read Chinese help when you read English? How?

14. 你觉得如何才能成为一个成功的英语阅读者?

What does a person need to know to be a good English reader?

## Appendix 4: Reading Tasks

### English Passages

(1)

#### Why keep them?

People keep dogs and cats because they enjoy their friendship. Fish cannot be friendly, but they have beautiful shapes and colors. They are pleasant as they swim in tanks.



#### What do they need?

First of all, the fish need a suitable tank, and you must fill the tank with suitable water. It is also good for them to have a few water plants in the tank to keep the water pure. A few snails in the tank are good idea, too. They will keep the water clean.

#### What about feeding them?

There are many kinds of fish food that you can get in pet shops. Most are suitable for all kinds of fish. You should feed your fish once a day only. It is important not to give them too much food. Just give them as much as they can eat in about 15 minutes. This will keep them healthy.

1. It is not good to put \_\_\_\_\_ in the fish tank.
  - A. a few snails
  - B. a few water plants
  - C. only a little water
  - D. enough clean water
2. How often can you feed the fish?
  - A. Once a week.
  - B. Once a day.
  - C. Every fifteen minutes.
  - D. As many times as possible.
3. Which of the following is NOT true according to the passage?
  - A. Some people love to keep fish of beautiful shapes and colors.
  - B. A suitable tank with suitable water is important for fish keeping.
  - C. All the fish food sold in the pet shops is suitable for any kind of fish.

D. If it takes the fish 30 minutes to eat up the fish food, the food is too much.

—选自北京市 2010 年门头沟区年第一次模拟考试英语试卷

**Lexical density: 0.51**

(2)

No Car Day was first started by 34 cities in France on September 22, 1998. It was started to protect the environment. By now, more than 1,000 cities around the world have had a No Car Day.

The first No Car Day in China was in Chengdu in 2001. Other cities including Taipei, Shanghai and Wuhan, also support the day.

In Beijing, more and more people are taking part in the activity. It asks drivers to leave their cars at home for one day each month and walk or ride a bike to work. It also calls on Beijingers not to use cars on June 5th (World Environment Day). The slogan for the day is, "If we drive for one less day, we can have one more nice day."

So far, more than 200,000 drivers have shown their support. "We can't control the weather, but we can choose not to drive," said Wu Zhonghua, a car club chairman. Beijing is trying to have 238 blue sky days this year. In the first quarter of 2007, Beijing only had 52 blue sky days. This was 11 days less than the number for the same period last year. Much of the dust comes from the desert, but cars cause most of the air pollution. We must do more for No Car Day.

4. Why did people start No Car Day?

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5. On the No Car Day, what should the Beijing drivers do?

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6. When is World Environment Day?

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7. Do you think that more and more people in Beijing will join the activity?

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8. Will the car club chairman Wu Zhonghua not drive anymore?

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—选自人教版八年级下册第八单元练习

**Lexical density: 0.57**



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