EFFECTS OF METACOGNITIVE READING STRATEGY INSTRUCTION ON EFL HIGH SCHOOL STUDENTS' READING COMPREHENSION, READING STRATEGIES AWARENESS, AND READING MOTIVATION

By

MIN-TZU WANG

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To my parents who taught me determination
and to my family who provides me with inner strength

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By

Min-Tzu Wang

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Metacognitive reading strategy instruction (MRSI) has been valued in reading instruction in both L1 and L2 contexts and has been considered helpful for developing learners' reading awareness. This study explored the effect of metacognitive reading strategy instruction (MRSI) on Taiwanese EFL high school students' English reading comprehension, reading strategy awareness, and reading motivation. By using a sequenced mixed-method research methodology, five research questions were addressed in this study: (1) Does metacognitive reading strategy instruction affect high school EFL students' reading comprehension? (2) Does metacognitive reading strategy instruction affect high school EFL students' reading strategy awareness and reading motivation? (3) Does the effectiveness of metacognitive reading strategy instruction (MRSI) depend on general English reading proficiency levels? (4) What are the factors involved EFL high school students' English reading experience? (5) What features of metacognitive reading strategy instruction (MRSI) change EFL high school students' reading perceptions towards English reading?

The study involved a 10-week intervention with 110 public high school EFL adolescents in southern Taiwan. During the course of the study, participants were randomly selected and

randomly assigned to the experimental and control group. Data from pre/post measurements, classroom observations, group interviews, reading strategy journals were used to investigate the impact the intervention had on EFL adolescent students. Results from three post measurements indicated that metacognitive reading strategy instruction (MRSI) led to a measurable increase in EFL students' reading achievement after 10 weeks of metacognitive reading strategy instruction. EFL high school students in the experimental group showed statistically significant gains on three post measurements as compared with the control group which didn't receive intervention on self-monitoring or self-reflection reading strategy. In addition, the result indicated that metacognitive reading strategy instruction (MRSI) had an impact on EFL high school students of all proficiency levels.

Following the intervention study, group interviews with 24 subjects from the experimental group illustrated how EFL students' English reading experience has shaped their perception toward English reading. Moreover, interview data also indicated that the implementation of metacognitive reading strategy instruction (MRSI) changed both EFL adolescent students and the English teacher in some ways. For example, EFL students outgrew their previous passive English reading habit and became actively involved in English reading. Likewise, the English teacher, who participated in this study, realized that metacognitive reading strategy instruction is a way that should be integrated into EFL regular English class in order to help EFL students become independent readers and ultimately lifelong readers. Results of this study strongly suggested that metacognitive reading strategy instruction (MRSI) should be integrated into regular EFL reading classes. Limitations of this study and implication for future research as well as pedagogy are also discussed.

CHAPTER ONE
INTRODUCTION

Background of the Study

Strategy training in language learning has been topical since 1970s and a large amount of work has been done on identifying the strategies used by both successful and less successful learners. Lately, there is an increasing interest in the role of metacognition on reading instruction. While previous reading research has focused on reading strategy use among good and poor readers, researchers are examining readers' awareness of strategies during the reading process – their metacognitive awareness. Metacognitive knowledge or awareness is knowledge about learners' themselves, the tasks they face, and the strategies they use (Baker and Brown, 1984). Applying metacognition in the language learning field, it refers to the action that one uses for planning, organizing, evaluating, and monitoring of his or her language learning (O'Malley and Chamot, 1990). Followed by metacognitive studies in the L1 context, second language researchers have also drawn increasing attention on metacognitive strategies in second language learning, especially in the reading domain. Many second language reading researchers have pointed out the positive correlation of proficient second language readers with more awareness of using appropriate reading strategies in English reading tasks (Barnett, 1988; Devine, 1984; Kern, 1989; Pardon, Knight and Waxman, 1986). Moreover, several researchers (Carrell, 1998; Cordero-Ponce, 2000; Sheorey and Mokhtari, 2001) assert that in order to make reading strategies effective in the reading process, metacognitive awareness or metacognition must be employed. This "metacognitive awareness" refers to knowledge of strategies as well as controlling this knowledge of action in the reading process (Carrell et al., 1989). In response to this positive relationship between metacognitive reading strategies and reading comprehension, several second language instructors began training second language learners with metacognitive

reading strategies and the results suggested that metacognitive reading strategy instruction brings positive outcomes in language learner's metacognitive awareness and reading comprehension. For example, in a study of four-day training through semantic mapping strategy, regardless of its mixed results, Carrell, Pharis, and Liberto (1989) found that metacognitive strategy training was effective based on statistically significant evidence from increasing scores in one of the posttests.

Also, Auerbach and Paxton (1997) investigated whether giving learners opportunities in choosing their own research topics based on their interests could enhance their metacognitive reading awareness and expand their repertoire of reading strategies. The findings concluded that metacognitive training not only increased learners' metacognitive awareness, but also made English reading more enjoyable since reading materials were based on their interests and thus they gained control over their second language reading process. In addition to these direct effects of metacognitive reading strategy instruction on language learners' awareness and reading comprehension, research has demonstrated that cognitive reading strategy training only results in small, short-term improvement in second language learners' reading performance, while metacognitive reading strategy training results in more stable and long-term comprehension gains (Carrell et al., 1998, Tang and Moore, 1992; Zhicheng, 1992, cited in Koda, 2005). Therefore, the most favorable goal for metacognitive reading strategy instruction is hoping that it can make ESL or EFL students become regulators of reading strategies and use reading strategies selectively and flexibly according to different reading tasks they face. In the meantime, being able to control over their reading process, ESL or EFL students are expected to use these strategies as resources to pursue the goal of English reading as personal interpretation or meaning making rather than confining their experience or learning to an understanding or acquisition of English linguistic knowledge only (Carrell et al., 1998).

However, in spite of these persuasive and positive findings of metacognitive reading strategy instruction in the US context, many English teachers in Taiwan or other Asian countries such as Korea and Thai, still follow a traditional language teaching method, that is, grammar-translation method, through which vocabulary memorization and grammatical structures are emphasized (Huang, 2006; Merkelbach, 2006; Phakiti, 2003; Song, 1998) with the primary goal of helping EFL students to pass annual high school or college entrance examinations. As a result, the typical English teaching and learning activities for Taiwanese EFL students in middle schools and high schools are nothing but memorizing English vocabulary and drill practicing grammatical rules. And, although this traditional English teaching pedagogy seems to work well in yearly national entrance exams of high schools and colleges, evidence has shown that grammar-translation instruction keeps Taiwanese EFL students from developing critical thinking skills as well as positive attitudes toward English reading (Chern, 2003; Cheng, 1998). According to the cooperative study measured by the International Association for the Evaluation of Education Achievement (IEA) in the US and the National central University in Taiwan in 2005, Taiwanese students' reading comprehension is low in comparison with world average. Moreover, evidence indicated that the average number of days of the school year they read was 24%, which was lower than the worldwide average of 40% (NCU News Network).

Furthermore, another drawback of grammar-translation teaching method lies in that it makes EFL students feel frustrated in English reading since they spend time checking meanings from dictionaries and analyzing sentence structures, and yet don't get the main points from the reading materials, especially after all the translations are done. Gradually, they lose interests in reading English since it is hard to comprehend after so much effort and time has been spent. Consequently, most EFL students in Taiwan become unskilled readers, passive readers, and

dependent readers. With such negative English reading experience, it also builds up a psychological hindrance or avoidance for EFL students toward English reading. For instance, there is evidence that many Taiwanese college students have reported that they either avoid taking classes in which English textbooks are assigned or they hardly touch the English reading materials once they have completed their high school education, unless they are enrolled in English related majors in college or other language institutes (Merkelbach, 2006).

Nevertheless, as everyone knows, the majority of the latest resources and information on the World Wide Internet and professional magazines are written in English. In that sense, if one wants to be able to compete with others in this global market and expand their knowledge and world view, being a strategic English reader is inevitable. In addition, reading is the very foundation for mastering of a second language, especially for EFL students whose exposure to English environment is far less than ESL students. Therefore, being aware of this global trend, the Minister of Education (MOE) in Taiwan has advocated that one of the objectives of English education should provide EFL students with strategies in all language skills in order to make English learning successful and effective. As second language researchers has urged teaching productive reading strategies to ESL/EFL students to motivate reading and facilitate reading comprehension (Anderson, 2003; Chern, 1993; Eskey, 2002; Farrell, 2001; Grabe, 2004), this study plans to investigate whether providing EFL high school students with metacognitive reading strategy instructions (MRSI) in their regular English reading classrooms will help them become more metacognitively aware of their English reading process and be motivated to read more English materials in order to not only successfully acquire a second language, but also fulfill their personal interests and become lifelong readers.

A Research Focus: Metacognition in Foreign Language Reading

The study of metacognition originated in the field of cognitive development, especially developmental psychology (Flavell, 1978) and information-processing cognitive psychology (Wagner and Sternberg, 1984). Flavell (1978) appears to be the first one, in early 70's, to define metacognition as knowledge of one's learning that consists of two elements: (1) metacognitive knowledge - that is "knowledge of cognition", and (2) regulation of cognition - that is "strategy use." Similarly, Brown (1981) describes metacognition as "the deliberate conscious control of one's own cognitive action." (p. 453). In accord with Flavell's (1978) definition, Baker and Brown (1984) further note that there are two types of metacognitive activities: (1) those that concern a person's knowledge about his or her own cognitive resources and the compatibility between the learner and the learning situation, and (2) those that regulate and modify the process of a cognitive activity. Taken as a whole, Koda (2005) summarized metacognition as knowledge of recognition which refers to a learner's understanding and control of his or her own thinking and learning.

When metacognition is applied to the reading process, effective readers, according to Baker and Brown (1984), thus are aware of and able to control the cognitive activities they are engaged in during the reading process. In other words, effective reading usually involves metacognition. To illustrate how metacognition is involved in reading, Baker and Brown (1984) suggest that the following strategies are typically used by good readers during the reading process: adjusting reading rate, skimming, or being aware of and revision the materials. To be specific, metacognitive reading strategies refer to procedures that one uses for monitoring his or her own reading processes including evaluating the effectiveness of cognitive strategies being used in reading. That is to say, if cognitive reading strategies are about knowledge of what strategy to use and how to apply it, then metacognitive reading strategies involve understanding

the rationale for applying a particular strategy in a particular context, and evaluating its usefulness in terms of effectiveness for that reading situation. Auerbach and Paxton (1997) also maintain that strategic reading can only be efficient when metacongitive reading strategies are actively used.

Consistent evidence from previous studies has found that the major difference between skilled readers and less skilled readers lies in how much they are engaged in a self-regulated process, that is, the use of metacognitive strategy of comprehension monitoring (Baker and Brown, 1984). From these findings, it is believed that less skilled readers are less strategic, largely because they fail to monitor the situation of their comprehension during reading. Comprehension monitoring is viewed as essential to the whole reading process, from planned use of reading strategies to changes in strategies use in the reading process. Skilled readers use a different approach once they become aware that their current approach is not contributing to their reading comprehension. To sum up, characteristics of the metacognitive theory of reading stresses that skilled or proficient readers actively evaluate their understanding in the reading process and apply or select appropriate reading strategies to construct meaning from the reading text. That is, skilled readers use strategies that they find effective for the kinds of tasks they need to accomplish in the L2 (Chamot, 2004). For that reason, metacognitive awareness is essential for reading comprehension and is crucial for readers to possess and evaluate when and where to use the strategies they know. Chamot (2005) also proposes that it is important for language teachers to help ESL students develop their metacognition in language classrooms because metacognition help them select the most appropriate strategies according to a given task and their individual language learning preferences.

Moreover, the reading task that foreign language readers face is far more complex and demanding than native language readers since reading comprehension involves both the reader and the reading text, which is linguistically and culturally specific. For example, Farrell (2009) points out the reasons why English language learners have difficulty reading in English and he highlights areas such as first language and second language dissimilarities, age, learning styles, and cultural schemata. For that reason, metacognition in foreign language reading process is vital for foreign language learners to possess. Many studies, both in L1 and L2, have found a positive correlation between the effective use of metacognitive skills and fluent reading as well as the fact that the main difference between skilled and unskilled readers is believed to be in the ability that skilled readers are engaging in deliberate activities that require thinking, flexible strategies use, and constant self-monitoring (Sheorey and Mokhtari, 2001). Thus, it is based on this theoretical background that the idea of present study was developed to investigate the effect of metacognitive reading strategy instruction on EFL high school students' reading process.

ESL Versus EFL Reading Strategies

Differences between ESL and EFL largely relate to where English is taught. An ESL instructional environment is defined as an environment where English is the primary language used in the society in which the language is studied. For instance, learners studying in the US, England, or Canada are in an ESL environment (Anderson, 2003). By contrast, an EFL instructional environment is one where English is not the primary language of society in which the language is being studied. For example, learners in Korea, Japan, and Taiwan are in an EFL environment (Anderson, 2003). Under this condition, EFL students have fewer chances to apply English to situations outside of classrooms than ESL students and thus have certain amount of influence on EFL students' strategies use. Riley and Harsch (1999) are a few of the researchers examining how the learning environment may influence strategy use. They conducted a research

project to compare the strategy use of Japanese learners of English in ESL (in Hawaii) with EFL (in Japan) environments. Their findings supported the notion that learners in an ESL environment use more strategies than learners in an EFL environment. The reason supporting this finding is that ESL students have more opportunities to use English in daily lives and therefore have a greater need to use strategies to survive. By contrast, EFL students have much less opportunities to access English in their daily lives and thus use fewer strategies. However, this doesn't mean that strategies aren't important for EFL students. The limited opportunities in accessing English make English reading strategies equally important to EFL students because English written materials become major resources and language input for EFL students to learn and acquire English. Reading is a valuable source of language input for language acquisition and it is the most durable of all L2 language skills and most cost-effective means of providing information regarding second language and culture (Bernhardt, 1993). Thus, reading strategies should be emphasized in the initial stages of language learning. EFL students need to know or learn how to read with ease in order to be motivated to read more English materials in order to build up their English ability.

EFL Reading Problems in the Context of English Education in Taiwan

The context of the learning situation and the cultural value of the learners' society can be expected to have a strong influence on choice and acceptability of language learning strategies (Chamot, 2004; Farrell, 2009). Pritchard (1990) and Grabe (1991) have also pointed out that reading strategy and strategy preference are socially and culturally constructed. The following section briefly describes how English reading is learned and taught in Taiwan from a socio-cultural perspective. Three major factors that contribute to English learning and teaching in Taiwan can be identified from literature review into the following categories: (1) examination-

oriented education system, (2) grammar-translation pedagogy, and (3) Chinese literacy tradition influence (Cheng, 1998).

Long before, English has become one of the major subjects to be tested in all yearly national entrance examinations of high schools and colleges in Taiwan (Chern, 2003). As a result, these major examinations have played a predominant role in leading English education. The content and questions appeared in written English exams are usually focused on testing EFL students' linguistic knowledge such as vocabulary and grammatical rules (Shih et al., 2000). Therefore, in order to help EFL students well-prepared for these examinations, the major English instruction and learning have directed to acquire linguistic aspects of English (Hung, 1996, 2000; Hsu, 2003). In other words, memorizing grammatical rules and vocabulary from textbooks become the major goals and tasks of English learning (Sharp, 2002; Shih et al., 1999). As a result, when the center of English instruction focuses on linguistic aspect, reading skills, on the other hand, has long been overlooked. In addition, English teachers often assume that once EFL students are equipped with grammatical and structural rules and adequate vocabulary knowledge, then they will know how to read automatically. However, this assumption has became problematic as research has found that certain EFL students with good grammatical and vocabulary knowledge still fail to construct meaning from a reading text (Smith, 2004). From interactive reading theorists' viewpoint, reading is a complex process which interactively involved the reader and the reading text, instead of a process of word decoding (Eskey, 2005; Grabe, 2004). That is to say, reading, instead of word-by-word decoding, is a meaning-making process that integrates a reader's prior knowledge and expectations with a writer's intentions. Therefore, only with linguistic knowledge doesn't contribute to sound reading comprehension.

Grammar-translation pedagogy has been reported as the dominant teaching method in English classes at most middle and high schools (Hung, 1994; Shih et al., 2000) and English reading strategies have not been addressed in most English classes in Taiwan (Merkelbach, 2006). By looking at most Taiwanese highs school students' English textbooks, it is common to find that Chinese translations are written between every line. Taiwanese EFL students are taught to pay close attention to word-level cues (morphology and syntax), which is exactly the same as what they are expected to do when reading classical Chinese literature. That is, carefully analysis and translation of each word is strongly emphasized while guessing the meaning of each word is not encouraged. However, getting to read or understand an English text by this method takes an excessively long time and laborious. Over-reliance on Chinese translation may not only hinder EFL students' English reading abilities but it may also decrease their interests in reading English (Chia and Chia, 2001). Therefore, English reading experience like this is hard for an EFL student to maintain a high level of motivation or interest, let alone engage in an enjoyable reading experience and accomplishment. However, like L1 readers, motivation to reading is one of main factors to language acquisition and reading achievement. In conclusion, grammar-translation teaching instruction has made word-by-word translation method the only strategy for EFL students to approach an English reading text, and as Schultz (1983) states, this teaching method results in a lack of contextual focus and immediate frustration as soon as the reader encounters an unknown word or comprehension breakdown. This disengagement is counter-productive to the purpose of English reading which allows EFL students to acquire new vocabulary words and understand grammatical patterns. English reading activities in Taiwan are not designed to develop reading skills, strategies, or develop high levels of reading ability. To sum up, lexical units and syntactical structures as well as word-by-word translation are the focus

of reading instruction in Taiwanese English classrooms (Yang, 2003) and it results in several problems of which English teachers in Taiwan should be aware.

Research has found that the majority of the EFL students in Taiwan is word-bounded and relies on word-to-word translation when reading English (Abbott, 2006; Parry, 1996; Yang, 1996, 2000, 2002). One possible explanation for this is the influence of Chinese L1 literacy tradition and practice which has shaped teachers and students' views of teaching and learning English (Abbott, 2006; Farrell, 2009; Parry, 1996). As Farrell (2009) points out L2 learners' reading strategies and habits will be influenced not only by the text structure of their L1 but also by their beliefs about the reading process in general. In Taiwan, reading Chinese classical literature is required starting at the upper grades in elementary schools. Students are frequently taught to translate each word in classical Chinese literature into modern Chinese language to derive its meaning. Therefore, the nature of Chinese literacy practice and learning of this kind has been transferred to English reading contexts and has more or less shaped Taiwanese students' perception of how reading should be processed (Farrell, 2009; Parry, 1996). Also, Cheng's (1998) a qualitative research further confirmed the influence of L1 literacy on L2 reading behaviors and habits. His subjects, Chinese speakers from Taiwan of a US university, offered evidence that English instruction in Taiwan was drill practice and grammar translation oriented and thus has made the subjects in Cheng's (1998) study have negative attitudes towards reading in English and their English reading approaches tended to be bottom-up.

Being aware that English has become the global language across the world in business and politics as well as education, Taiwanese government has made English education a priority to enhance Taiwan's economic competition. Starting in 1997, the Taiwanese government declared that English instruction would be extended beginning in the 3th grade instead of the 7th

grade as of 2001. However, receiving English instruction four years earlier doesn't guarantee for successful language learning, what is important is that EFL students should be taught how to learn English strategically. Many college students in Taiwan, even though they are considered competent in English, still felt reluctant and held less positive attitudes towards reading in English (Cheng, 1998; Hung, 2000; Lin, 2003). This inability to read English effectively has not only caused Taiwanese students to experience barriers to academic success (Lin, 2003), but has also disadvantaged them in their career performance or in gaining access to the latest trend of globalized information (Lin, 1996).

Moreover, in responding to the widespread use of Communicative Language Teaching pedagogy in the second language field as well as the realization of the drawbacks of grammar-translation pedagogy in Taiwan's English education, the Ministry of Education (MOE) in Taiwan has called for a reform in all national entrance examinations from testing linguistic knowledge to examining EFL students' overall use of language knowledge and global comprehension abilities. The purpose of this movement is hoping to have certain amount of influence on English education pedagogy from grammatical focus to communicative and interactive pedagogy. However, this change in the content of English examinations seems to have produced little effect on the traditional teaching methodology, which has rooted deeply in overall English teaching climate in English classes in high schools (You, 2004).

The Need for Effective Reading Strategies Instruction

As mentioned above, in an EFL context, the chance for EFL learners to read English material is a lot more limited than ESL learners in the US. However, this doesn't mean that English reading abilities and skills should be overlooked or not necessary to be developed. In contrast, reading skills or ability should be valued with the following reasons. First, with limited opportunities to use English in everyday life, EFL students rely on written texts as a major

source of language input for English learning. For instance, Griffiths (2004) finds that reading is actually a useful strategy for language learning because it expands vocabulary and grammar usage, thereby assisting the development of both receptive (reading and listening) skills and productive skills (speaking and writing). However, the reading skills learned in EFL students' first language is not necessarily will automatically transfer to EFL students' second or foreign language (Hassen et al., 2005; Farrell, 2009). Therefore, reading strategy instruction should be known to EFL high school students.

Second, English is one of the major languages in the world and most information stored in computerized data-bases world-wide is in the English language as well (Kaplan, 1982). For that reason, if one wants to be competitive in his or her filed of expertise and expand his or her world view, the chances to read English information can be anticipated. Besides, with regard to the role of English in information access, no country can ignore the importance of English and still expect to compete professionally and economically (Grabe, 1988). Accordingly, to be well-prepared to face the new challenges of the 21st century, English educators in Taiwan are advised to help their EFL students go beyond grammar and vocabulary learning and become effective readers of English for academic and professional success through lifelong reading and learning. Moreover, English reading demands a lot of knowledge that EFL students might have insufficient knowledge to support them for reading comprehension. Considering the challenges of second or foreign language reading, especially the cognitive, cultural and linguistic aspects, all prove that second language reading is much more difficult and complicated than that in L1. Seeing that reading bear some knowledge specific to Western society and culture, EFL students are supposed to employ or select appropriate strategies in order to be able to understand what they read and to achieve a satisfactory academic performance. Yang (2002) recommends that

English teachers in Taiwan should develop EFL students' reading strategies repertoire and metacognitive awareness regarding to increase their control over their own reading process. With adequate metacognitive awareness, EFL students will be able to monitor their own reading process and identify and solve problems when they encountered them by using the resources and strategies they have learned. While researchers in the U.S. has advocated for teaching productive reading strategies to ESL learners to motivate and facilitate reading (Anderson, 2001 and 2003; Eskey, 2002; Farrell, 2001; Grabe, 2004), English educators in Taiwan should know there is a need to incorporate reading strategies instruction into regular English classes to foster reading comprehension among high school students as well as foster motivation and positive attitude towards English reading (Chu, 2000; Yang, 2000; You, 2004). According to a survey study from 212 EFL college students' perspectives in relating to the situational factors that would motivate them to read English materials, Huang (2006) concludes from the data that EFL college students would have read more effectively and efficiently and read more widely if reading strategies had been taught in middle and high schools. In other words, there is evidence showing that reading strategies were not widely taught in high schools ore middle schools in Taiwan and EFL students were hoping that reading strategy should have been taught to them. Therefore, how to assist EFL students in taking control of their own reading process while fostering success and positive attitudes toward EFL reading has become one of the most urgent tasks facing educators who teach English throughout Taiwan.

Furthermore, motivational factors of English reading is of interest in this study because research findings have suggested that students' affective factors in English such as attitudes, motivation, and self-esteem potentially contribute different levels of impact to English reading achievement (Dörnyei, 2001; Griffiths, 2004). These affective factors need to be noticed here.

In view of the fact that English is taught as one of the most important academic subjects in schools, EFL students are forced to "study English" with no exception. Besides, as a subject matter for tests, English is taught in emphasizing testing EFL students' knowledge of vocabulary and grammatical structures. Oftentimes, EFL students get frustrated by the pressure of constant tests, learning English in this way is neither meaningful nor pleasant, but a constant cycle of unsuccessful experiences due to ineffective strategies use, and hence they are not motivated to read English, let alone extensively read outside the classroom. However, as mentioned above, English reading is the major resources for language input to EFL students. It is on this phenomenon that motivation is of interest in this study. The assumption lies in that if EFL students are given the opportunity to learn reading strategies and are made aware of the reading process, they will be able to read more effectively and easily. If they have got over with initial reluctance of English reading and are having confidence in their English reading ability and then motivating them to read extensively could be anticipated.

At the same time, it should also be noted that just providing EFL students with a list of reading strategies is not enough for them to become successful foreign language readers. It is just like if one wants to teach a kid how to fish, offering him a fishing rod is not good enough. He or she also needs to let the kid know how to use that fishing rod in the right situation. The fishing rod is just like cognitive reading strategies, and when and how to use it is just like metacognitive reading strategies. Moreover, because everyone has his or her learning preference, in order to become motivated and selective strategy users, EFL students need to self-regulate or self-monitor their reading strategy use (Anderson, 2001; Chamot et al., 2004). In other words, EFL students have to consciously or metacognitively know what and when to apply appropriate reading strategy when comprehension breaks down. Metacognition is the way that helps EFL

students become the owners of their learning process and "awareness of the metacognitive process and of their strategy resources will give them ways to keep nourishing themselves through school." (Block 1992, p. 338). Therefore, EFL students need to be explicitly taught how to properly use reading strategies to monitor their reading comprehension and identify the cause of their reading comprehension problems, and then successful learners could be expected.

In conclusion, the goal of English reading instruction is to make English reading effective for EFL students and to change their attitudes towards English reading. In addition, in order to develop EFL students' global perspective and to increase their competitive edge, English education in Taiwan should not limit itself to preparation for a test. Reading for academic and professional purposes in English not only requires adequate language proficiency but also proper training in reading skills and strategies. Therefore, it is hypothesized that metacognitive reading strategy instruction will help English language learners become more aware of the reading process and use reading strategies to compensate for their insufficient language knowledge or cultural understanding. Through the employment of metacognitive reading strategy instruction in English class, EFL students should be able to improve their reading comprehension and experience a higher level of competency to further motivate them to read on a regular basis.

Rationale of the Study

Given the scarcity of experimental studies examining the effect of metacognitive reading strategy instruction with high school students in EFL contexts, reading theory and models in literature review section provide the background to investigate the impact of metacognitive reading strategy instruction on reading strategy awareness, reading comprehension, and reading motivation. The theoretical framework that guides this study is: (1) metacognition theory (Flavell, 1978), (2) constructivism (Vygotsky, 1978), and (3) reflective practice (Dewey, 1911).

First, it should be noted that a lot of research in second language reading stems from research conducted in English as a first language setting. For that reason, the benefit in L1 reading strategy instruction can't be ignored and numerous first language training studies have demonstrated that struggle readers' reading comprehension improved after they received explicit instruction in metacognition (Baker, 2002; Cohen, 2003; Duffy, 2005; Grabe, 2004; Palincsar and Brown, 1984). Such research has sought to better understand the contexts in which comprehension strategies improve comprehension, the training procedures which are most effective, and the variables such as learners' language proficiency levels and L1 and L2 relations, which influence strategy instruction.

Second, previous reading strategy training studies were mostly grounded in interactive and constructive or responsive reading theories. From the perspective of interactive reading theory, it argues that effective readers make use of top-down and bottom-up strategies interactively while reading depending on the reading situation, task, and the text (Bernhardt, 1991; Carrell, Devine, & Eskey, 1988). Similarly, Grabe's (1991) interactive perspective posits that fluent readers simultaneously apply higher- and lower- level skills to comprehend and interpret text. Goodman's (1992) transactive theory of reading and Pressley and Afflerbach's (1995) theory of responsive reading are also relevant here as they emphasize an interaction between "the reader" and "the text." That is to say, in order to maximize comprehension, readers must control their use of strategies through constant monitoring, and the reader must employ both top-down and bottom-up strategies to construct meaning. Therefore, since better readers apply metacognition more often and more effectively than do those who read less, one might expect that, if the strategy is learned and taught, a simultaneous increase in reading comprehension would be evident. Moreover, effective reading strategy instruction should make

students aware of multiple reading strategies and know when and how to employ strategies effectively, and furthermore, allow readers to be more aware of their own reading behaviors and processes. Research in the area of metacognitive awareness and reading comprehension has shown that if a reader is aware of what is needed to perform effectively, then it is possible for him or her to take steps to meet the demands of a reading situation more effectively. If, on the other hand, a reader is not aware of his or her limitations as a reader or of the complexity of the task at hand, then the reader can hardly be expected to take actions to anticipate or recover from difficulties (Baker and Brown, 1984; Carrell, 1989; Devine, 1993).

Purpose of the Study

The purpose of this study is to investigate the effectiveness of integrating metacognitive reading strategy instruction (MRSI) to EFL high school students on their reading strategies awareness, reading comprehension, and reading motivation. Even though the teaching of reading strategies to improve students' achievement has been the focus of a number of studies and has been positively associated with an increase in academic achievement in ESL, the outcome is not conclusive (Taylor, Stevens, and Asher, 2006). Besides, the effectiveness of cognitive reading strategy training and metacognitive reading strategy training on second language reading comprehension is not firmly established (Taylor, Stevens, and Asher, 2006). For instance, Taylor et al. (2006) in meta-analysis of twenty-one research studies found that 68% of training studies were effective in improving L2 students' reading comprehension and thus there is no significant difference between training programs with cognitive reading strategies and with metacognitve awareness training. Moreover, even though reading strategy training studies carried out in ESL or EFL contexts have proved to improve the L2 readers' reading comprehension, they have been few in number (Barnett, 1988; Carrell at el., 1989; Chamot, 2005; Kern, 1989). Chamot (2005) points out that relatively small number of instructional language

learning strategy studies may be partially due to the inherent difficulties in conducting classroom research. Ideally, an intervention study should have randomly assigned participants to either a control or an experimental group. Instruction in each group should be identical except for the presence of absence of the instruction being studied. Furthermore, up to now there has been limited research of reading strategy training to EFL students of high school levels. Thus, this area of reading instruction needs to be further investigated.

The second purpose of this study is to see whether EFL high school students change their English reading motivation once they are trained with metacognitive reading strategies. Research done in motivational domain has mostly been targeted on L1 primary grade students; virtually little research has investigated the effect of reading strategies training on EFL students' English reading motivation. Insufficient experimental research on EFL secondary students' English reading comprehension and motivation leaves educators without critical knowledge about the role of metacognition in EFL reading and its possible impact on EFL high school students' reading motivation. English reading motivation is especially important to EFL learners and it is the motivation that helps EFL learners do extensive reading other than textbooks and thus "read to learn" or "read to acquire" a second or foreign language. Hence, it seems promising to do a study of integrating metacognitive reading strategy instruction (MRSI) into EFL high school English reading classes. According to Day and Bamford's (1998) motivation model for L2 reading, there are four major variables that determine the amount of L2 reading motivation, that is: (1) reading materials, (2) reading ability in L2, (3) attitudes toward reading in the L2, and (4) sociocultural environment. Metacognitive reading strategy instruction derived from Brown's reciprocal teaching and explicit reading strategy training embedded the possible positive impact

on EFL high school students' reading ability as well as reading attitude and thus has the potential to influence EFL students' reading motivation to certain degree.

Likewise, while this study tries to investigate the effect of metacognitive reading strategy instruction (MRSI) on EFL high school students' reading comprehension and reading motivation, EFL high school students' previous reading experience as well as their reaction toward MRSI experiment is also part of investigation of this study, with the intended goal of making connection between the reality and the theory. In other words, the purpose of this study is to explore the effects of metacognitive reading strategy instruction (MRSI) on EFL students' metacognitive awareness in reading, reading motivation, and reading comprehension of EFL high school students in Taiwan. In conclusion, this study plan to make use of quantitative and qualitative data with the attempt to see the effect of metacognitive reading strategy instruction and how this intervention change EFL students' reading perception and reading motivation. By identifying EFL high school students' previous reading experiences and reading problems along with the quantitative results can have a broader application for researchers and L2 literacy instruction.

Data Collection and Research Questions

This research study followed a sequential mixed-method research design. As Farrell (2009) points out that there are three variables that contribute to differences in first and second language reading: (1) linguistic differences, (2) individual differences and (3) sociocultural differences. Therefore, by using mixed-methods research design, intervention study would get a more comprehensive result in terms of the impact of MRSI on EFL highs school students' English reading comprehension, English reading strategy awareness, and English reading motivation. An experimental study started out first and later followed up with group interviews to examine the effect of metacognitive reading strategy instruction quantitatively and look for

causes and changes qualitatively with an attempt to see the possible potentials of benefits of metacognitive reading strategy instruction (MRSI) on EFL students' English reading. Five research questions of this study are as following. The first three research questions are used to guide the quantitative part of the study while the last two research questions are used for the qualitative part of the study.

1. Does metacognitive reading strategy training affect high school EFL students' metacognitive knowledge with respect to their perceptions about reading and motivation to read English materials?

2. Does metacognitive reading strategy training enhance high school EFL students' reading comprehension?

3. Does the effectiveness of metacognitive strategy training depend on previous level of general English language competence?

4. What are the factors contributing to EFL high school students' reading experiences and reading attitudes?

5. In what way can the features of metacongitive reading strategy instruction help current EFL English reading instruction?

Hypotheses

For this study, research hypotheses are as following:

H_{a1} : Perception about English reading will be greater for EFL high school students with metacognitive reading strategy instruction than those students without metacognitive reading strategy instruction.

H_{a2} : Motivation to read will be higher for EFL high school students with metacognitive reading strategy instruction than those students without metacognitive reading strategy instruction.

H_{a3} : Reading comprehension will be greater for EFL high school students with metacognitive reading strategy instruction than those students without metacognitive reading strategies instruction.

H_{a4} **:** The effect of the metacognitive reading strategy instruction will be larger for EFL high school students for all language proficiency levels.

Significance of the Study

The Minister of Education (MOE, 1999) in Taiwan has announced that all 3th graders began their English instruction in 2001. Taiwanese government believes that enhancing Taiwanese peoples' English ability will also enhance Taiwan's power to compete in a global society (Liou and Chen, 1998). Besides, like EFL students elsewhere in the world, Taiwanese students use the Internet to search for information and communicate with people in other countries. Since English is one of the main languages for global communication and of the computer (Liou and Chen, 1998), it becomes important for Taiwanese students to be able to use and read English effectively. This study plans to investigate the effect of metacognitive reading strategy instruction on EFL secondary students' metacognitive awareness in reading, reading comprehension, and reading motivation. Thus, the significance of this study lies in its potential for contributing to our deeper understanding of metacognitive reading strategy instruction on EFL readers, thus suggesting directions for future research. This study is also significant in that it uncovers a general picture of English education in Taiwan and its impact on EFL high school students' reading attitudes through qualitative investigation regarding EFL high school students' previous reading experience. By analyzing EFL students' reading experiences and the impact of traditional English education in Taiwan, this study thus gives a direction for English teachers and English education in Taiwan. Also, this study attempts to test the generalizability of the effect of metacognitive reading strategy instruction (MRSI) on ESL students to the field of foreign language reading in an EFL context. Although existing research shows that L1 elementary students and L2 college learners improve their reading comprehension from metacognitive reading strategy training, the extent to which this training is helpful to EFL secondary students is much less known.

Second, many studies of English learning on Taiwanese students involved only descriptive analysis of English language learning strategy profiles in general, not teaching them in using reading strategies or metacognitive reading strategies in particular (Huang, 2006; Lan and Oxford, 2003;Yang, 2003). Third, the length of the study, over two months, is longer than most other studies related to implementing metacognitive reading strategy instruction. Fourth, of the studies reviewed in literature review, few of them had selected sample randomly (Chamot, 2005). This study tries to randomly select sample in hoping to eliminate the confounding variables to minimum degree. Fifth, this study will use "reading strategy journal", the idea borrowed from Anderson (2001), as a media for high school students to self-reflect on their English reading experience such as difficulties they encounter and problem solving strategies they use or plan to use. Rubin (2003) also suggests using diaries for instructional purposes as a way to help students develop metacognitive awareness of their own learning processes and strategies. By keeping a reading strategy journal, this study is hoping that it will help EFL adolescent students make conscious, informed decisions about their own reading and become more aware of their reading strategies use during the reading process. Sixth, while Pressley (1998) found that by providing reading strategy to poor readers can improve learner's reading motivation in L1 context, little experimental study exists to test the effect of reading strategy instruction on EFL students' reading motivation. Finally and most importantly, the effectiveness of metacognitive reading strategy instruction on L2 reading comprehension has not been firmly developed (Taylor, Stevens, and Asher, 2006); this study is intended to provide more evidence of metacognitive reading strategy instruction on EFL learning for English educators in Taiwan and will be of great interest to all those people or educators interested in the complex issues of learning to read in a foreign language and pedagogical implication.

Definitions of Key Terms

READING STRATEGIES: Oxford and Crookall (1989) defined strategies as learning techniques, behaviors, and problem-solving or study skills which make learning more effective and efficient. Applied to second language reading context, reading strategies are processes used by the learners to enhance reading comprehension and overcome comprehension failures.

COGNITIVE READING STRATEGY: Cognitive reading strategies used by learners to transform or manipulate the language while reading. In more specific terms, this includes note taking, formal practice of sounds and sentence structure, summarizing, paraphrasing, predicting, analyzing, and using context clues.

METACOGNITIVE READING STRATEGY: Metacognitive reading strategies are behaviors carried out by the learners to plan, arrange, and evaluate their own reading. Such strategies, include direct attention and self-evaluation, organization, setting goals and objectives, seeking practice opportunities, and so forth. In the context of reading, self-monitoring and correction of errors are further example of metacognitive reading strategies. (Singhal, 1999).

MOTIVATION TO READ: Motivation to read was operationally defined as the scores obtained on *English reading Motivation Questionnaire* (Mori, 2002) in pre- and post-tests. Motivation to read has been defined by other researchers as "those feelings that cause a reader to approach or avoid a reading situation." (Readence et al., 1989, p.102). Motivation to read depends upon the expectation of successful performance when trying reasonably hard and the value available rewards for success (Good and Brophy, 1991). In this study, motivation to read was operationally defined as the EFL student's score on a 30-item Likert-type instrument where one stands for *very different from me* and four stands for *a lot like me*.

CHAPTER TWO
LITERATURE REVIEW

Introduction

The purpose of this study is to test the effects of metacognitive reading strategy instruction on EFL high school students' English reading perception, reading motivation, self-evaluation skills, and reading comprehension. In order to understand the context of this study, a review of related literature is presented in the following sections: (1) contemporary theories of L2 reading comprehension models are briefly summarized and discussed; (2) the role of metacognitive awareness in reading comprehension are addressed; (3) relevant research on reading strategies including descriptive and experimental studies along with their findings and brief criticisms of any shortcomings are presented; (4) a summary of overall contributions of previous reading strategy studies to current knowledge in the field, including a description of strengths and weaknesses in existing research and conclude in a list of the research questions of the present study which are designed to fill those gaps.

Reading Comprehension Models

Before reviewing of the research literature relating to reading strategies, I briefly summarize three major reading models originally proposed from the perspectives of first language reading research that are usually discussed and applied to L2 reading theory. Current reading research has supported the idea that both L1 and L2 readers seem to go through similar cognitive processes (Alderson, 1984, Grabe, 1991, 2004; Eskey, 2005). These reading models have been influential in both L1 and L2 reading research and can be distinguished from one another by its focus regarding how meaning is attained from print. For instance, 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, Shraw, and Ronning, 1999). In this study, metacognition is a new mode of instruction that focuses on "the interactive nature of reading," rather than a passive way of receiving information from the text through word identification and task analytic learning.

1. The Bottom-up Model

According to Gough (1972), the emphasis of this model is on print itself. Readers start reading by recognizing the letters, word identification, and they gradually progress toward larger linguistic chunks to sentences, and eventually ending in 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 (vanDuzer, 1999). This reading model believes that students who master this process quickly become proficient readers. However, students who are not successful at decoding become struggle 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 fast decoding improves reading comprehension.

However, the bottom-up has been criticized 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 and 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 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 on a regular basis. 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 or envision the reading process as a one-way makes it fail to notice the global or top-down processes (will explain in the next section) that take place during reading. Recognition of the limitations within the bottom-up model in explaining the reading process led to the emergence of the top-down reading model.

Application of the bottom-up model in L2. A growing body of research in L2 has supported the critical role of lower-level processing in reading comprehension (Bernhardt, 1986; Carrell, 1988; Eskey, 1988, 1997, 2005, Koda, 1992) and the lack of vocabulary "maybe the greatest single impediment to fluent reading by ESL readers." (Grabe, 1988, p.63). In a comprehensive review of L2 word-recognition research, Koda (1996) again stressed the very significant role of word recognition in L2 reading comprehension. What's more, in a study conducted the relationships between the role of higher-level syntactic and semantic processes and word recognition of sixty adult ESL learners in Canada, Nassaji (2003) found that lexical knowledge was strongly correlated with L2 reading comprehension. However, reading in a second language bears some knowledge specific to that culture and society. Therefore, although

a number of researchers and studies have emphasized the role of lexical knowledge in reading comprehension, some researchers maintain that vocabulary knowledge is a necessary, but insufficient condition for the outcome of successful reading comprehension (Koda, 1996). In other words, in order for true comprehension of a text to occur, a reader needs to possess other source of knowledge (Bernhardt, 1991, Carrell, 1988, Devine, 1987) and develop appropriate reading strategies (Anderson, 1991, 2001; Carrell, Pharis, and Liberto, 1989).

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 his or her vocabulary knowledge they possess in decoding words to confirm and modify previous expectations (Aebersold and 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 (2004), who is also in favor 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 inference 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 problem of over-reliance on a reader's prior linguistic and conceptual knowledge and neglect 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 text if the material is unfamiliar to him or her (Samuels and 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.

Application of the top-down model in L2 Since reading materials tends to be culture-specific, the top-down model takes into consideration that L2 readers may fail to understand a text if they do not posses or cannot access the appropriate cultural knowledge embedded in it. Reliance on top-down strategies at the expense of word identification skills might not contribute to comprehension. That is to say, limitations on cultural knowledge may cause distortion of the text meaning if the reader relies on guessing from context and prediction (Eskey, 1988). It has long been argued that during the reading process, the reader's language knowledge, personal experiences and knowledge of the textual structure connect interactively to achieve

comprehension. Thus, Alderson (2000) specifically stresses that "the whole reading process is not an "either/or" selection between the bottom-up and top-down models, but involves the interaction between both approaches." (p.38).

3. The Interactive Model

The interactive model combines features of the both 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. Rumelhardt (1977) says that "both sensory and nonsensory come together at one place and the reading process is the product of simultaneous joint application of all the knowledge sources." (p.735). 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)." 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). Proponents of this model suggest that a skilled reader simultaneously synthesizes the information available to him or her from several knowledge sources of either bottom-up or top-down 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 phenomena explain for the process that 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 of bottom-up processes (Stanovich, 1980).

Application of the interactive model in L2. Because second or foreign language learners often find it challenging to understand the context due to limitations with knowledge of the language and the culture unfamiliarity, most L2 reading specialists support the interactive reading model (Grabe, 2002, 2004; Eskey, 2005). According to Bernhardt (1990), in L2 reading, both text-driven and knowledge-driven processes operate simultaneously with varying degrees of success. The text-driven factors consist of word-recognition, phonemic decoding, and syntactic feature recognition, while knowledge-driven operations involve intertextual perception, metacognition, and prior knowledge. All of these factors contribute to successful L2 reading. Cook (2001) and Nassaji (2003) point out that even though readers may know all of the vocabulary and grammar, there are times that second language learners still cannot understand the text meaning. The difficulty seems to stem from the lack of social-cultural knowledge as comprehension is based on linguistic data (Bernhardt, 1991). Thus, background knowledge, in addition to the lower-level processing, has been viewed as another critical factor that needs to be developed as part of the reading process. In the reading process, the reader integrates the new information with the existing schemata (Anderson and Pearson, 1984; Carrell, 1983). Schema can be categorized as content schema and formal schema. For context schema, both Razi (2004) and Pritchard (1990) conducted studies in investigating the influence of cultural schema on reading comprehension. The results all showed that relevant cultural schemata obviously facilitated the reading process. In addition to relevant content or cultural knowledge, familiarity

with text structure (formal schema), is another factor affecting comprehension. Formal schema refers to the readers' expectations about how information parts in a text are organized (Carrell, 1987) and this knowledge has been recognized as an important factor in comprehension. For instance, Carrell's (1984) study found that students from different language backgrounds recalled more information when the structure of the reading task was close to the structure of their own language.

In summary, reading comprehension is a complex cognitive process, and it seems more complex in an L2 context. Clearly, reading in an L2 is an active process involving various sources of knowledge such as relevant language knowledge, appropriate background knowledge and knowledge of text structure. In addition to the relevant linguistic, content, and formal schemata, L2 learners also need to be equipped with effective strategies when approaching a reading task to compensate for insufficient knowledge in either language or content knowledge.

Metacognitive Awareness in Reading Comprehension

The theoretical framework that undergirds this study is metacognitive theory, the belief that self-monitoring or regulation is essential for reading comprehension (Flavell, 1976). Metacognitive awareness in reading processes deals with the knowledge that we perceive ourselves as readers, the reading tasks that we confront, and the reading strategies that we apply so as to solve the tasks (Baker and Brown, 1984, as cited in Singhal, 2001). Generally speaking, metacognition in reading refers to the learner-performed actions such as planning, monitoring, or evaluating the success of a particular learning task (O'Malley and Chamot, 1994). Metacognitive awareness, therefore, also involves the awareness of whether or not comprehension is occurring, and the conscious application of one or more strategies to correct comprehension (Baumann, Jones, and Seifert-Kessel, 1993). Several studies have been carried out to study the relationship between metacognitive awareness and reading comprehension. For

example, Devine's (1983) (as cited in Shinghal, 2001) conducted a study on L2 readers' conceptualizations of their L2 reading processes through interviews. The results showed that older and more proficient readers tended to focus on reading as a meaning-making process rather than a decoding process. Meanwhile, the younger and less proficient readers appeared to do the opposite. In addition, conducting a study of L2 reading with 278 French language students, Barnett (1988) pointed out that the proficient ESL readers displayed more awareness of their use of strategies in reading English than less proficient ESL readers. Furthermore, Carrell's (1989) study (as cited in Chern, 1993) also found support for positive relationships between readers' metacognitive awareness of strategy use and their reading capacity in both L1 and L2. More recently, Sheorey and Mokhtari (2001) (as cited in Mokhtari and Sheorey, 2002) discovered the relation between students' reading capacity and strategy use while reading. In both ESL and U.S. college student groups, high-ability readers showed a higher level of awareness and strategy use than low-ability ones. Moreover, recent research comparing the effectiveness of cognitive and metacognitive strategy training shows that explicit instruction on cognitive strategies yields small, short-term improvements in reading performance, whereas training on metacognitive strategies results in more stable, long-term comprehension gains (cite in Koda, 2005; Carrell, 1998; Cohen, 2003; Tang and Moore, 1992; Zhicheng, 1992).

Review of Studies on Reading Strategies

As O'Malley and Chamot (1990) point out, most research on strategies in both L1 and L2 contexts has focused on identifying and categorizing the reading strategies that "good" or proficient readers employ in comparison to "poor" or less-proficient readers. In the case of reading models, research on second language and foreign language reading strategies has largely been informed by research done in L1 reading contexts with the majority of the participants were primary graders or remedial students (Grabe, 1992). Given the differences in language learners

and contexts, it is reasonable to question the validity of using L1 reading research as a starting point of inquiry into L2 reading strategy use. A major concern is the logical question of the extent to which less proficient or remedial L1 readers are equivalent to less-proficient L2 readers (Grabe, 1992). In addition to the influence of a reader's first language and L1 literacy, his or her second language proficiency should be taken into consideration. However, one cannot deny that reading is a cognitively learned process for L1 readers, as it is of course for L2 readers as well. For that reason, L2 based research has relied so much on previous L1 work. The following is the brief summary of several key findings of L1 reading strategy studies that are relevant to L2 reading.

Reading Strategies in the L1 Context

Block (1986) summarized several descriptive studies carried out between the mid 1960s and early 1980s that focused on the "comprehension strategies" of proficient readers with English as their first language. She concluded that many of the strategies used by proficient readers were top-down and meaning focused strategies, as described by psycholinguistics such as Goodman (1967) and Smith (2004) in the top-down reading comprehension model. Such studies have suggested, for example, that proficient L1 readers are more capable of monitoring their comprehension, are more aware of the strategies they use, and are able to use strategies flexibly by adjusting them to the text and purpose of a reading task (Block, 1986). Additionally, proficient L1 readers have the following reading characteristics such as the abilities of differentiating between main points and details in a reading text, using textual clues to predict content and link information, recognizing discrepancies in a text, and solving the problems by using strategies to make such discrepancies understandable (Block, 1986). Research studies that focused on reading strategies point to the notion that the effective use of these strategies explains the deeper comprehension of proficient readers.

Other than the descriptive studies in the area of reading strategies, there is also a considerable body of literature on reading strategy training in a native language context. Overall, the types of reading strategy training among these studies have been aimed at training L1 readers in summarizing texts (Brown, Campione, and Day, 1981; Hare and Borchardt, 1984), using self-questioning during reading (Wong and Jones, 1982), monitoring of understanding, and the use of specific fix-up strategies (Garner, Hare, Alexander, Haynes, and Winograd, 1984), activating prior knowledge and making inference (Hansen, 1981; Hansen and Pearson, 1983), using reciprocal teaching and explicit explanations (Brown and Palincsar, 1985). After reviewing several successful L1 reading comprehension strategies training studies, the common finding of these training studies is that "direct instruction" in reading strategies has "consistently positive results" (Carrell et al., 1989, p.650). In other words, the key to successful training in these studies seems to be the ability to make instruction explicit enough to facilitate students' development of metacognitive control of strategy use by providing clear and extensive explanations of the value of strategy use, and information on when and how to use them.

Two influential bodies of research have documented how metacognitive strategy instruction can be integrated into daily reading instruction: reciprocal teaching (Brown and Palincsar, 1985) and explicit strategy instruction (Duffy et al., 1986; Duffy et al., 1987). Brown and Palincsar (1985) developed reciprocal teaching which focuses on direct instruction in comprehension-fostering and comprehension-monitoring strategies. In a training project, 7th graders of L1 were taught to use four concrete comprehension strategies: summarizing the main content (summarizing), formulating potential test questions (questioning), clarifying difficult parts of the text (clarifying), and predicting future content (predicting). During the training, the teacher worked with students and modeled how the strategies were used. Then, students

practiced this technique within a small group, and the teacher scaffolded until the students gradually took the responsibility for using those strategies on their own. Using such a technique directly impacted the independent test scores of poor readers who improved dramatically, going from below 40% correct to over 75% correct. This study demonstrated evidence to support the concepts that students can be taught reading strategies to improve their comprehension and teacher modeling of specific reading strategies use in how to improve reading comprehension should be included in reading instruction study. The reciprocal teaching method was later replicated by L2 reading researchers such as Cotterall (1990 and 1993) in the US and in the EFL contexts conducted by Song (1998) in Korea and Salataci and Akyel (2002) in Turkey.

Dole, Brown, and Teathen (1996) conducted another line of reading strategy research involving sixty-seven young L1 readers ranging from 5th grade to 6th grade. The authors compared a "teacher-directed" strategy in which the teacher read prepared scripts designed to activate prior knowledge with "interactive instruction" in which the teacher and students together activated and discussed students' background knowledge before reading. Results indicated that at risk L1 readers who received "interactive strategy" instruction made superior gains in comprehension performance over their peers who received traditional basal instruction, which is "teacher-directed" instruction. Also, an earlier study carried out by Hansen (1981) investigated the effects of two experimental methods on inferential reading comprehension of twenty-four 2nd grade L1 children. The children were grouped into three experimental conditions: 1) the strategy group, 2) the question group, and 3) the control group. The "*Strategy Group*" was trained in pre-reading strategies and focused on integrating text information with prior knowledge before reading. The "*Question Group*" received training in answering questions which required inference practice between the text and prior knowledge. The "*Control Group*" received

traditional story instruction accompanied with the typical activity of literal inference probe. The instruction was applied to ten basal-reader stories. Results of post-comprehension tests revealed that the performance of the children in both experimental groups outperformed that of the control group. Standardized test scores and scores on an experimenter-designed test also favored the experimental groups. In conclusion, when reading strategies are taught, readers' performance in comprehension improved.

A similar study about the inferential comprehension of good and poor fourth graders was investigated by Hansen and Pearson (1983). Forty 4th graders were assigned to one of four instructional groups, two groups of good readers (an experimental and a control group) and two groups of poor readers (an experimental and a control group). The experimental treatment consisted of three parts: 1) making students aware of the importance of drawing inferences between new information and prior knowledge structure, 2) getting students to discuss some of their own experiences that were similar to events in the text, and 3) providing students with many inferential questions to discuss after reading the texts. The results indicated that poor readers benefited significantly from this instruction, indicating that instructional procedures in reading do have positive effects on reading comprehension, especially for poor readers.

Also, there are studies examining reading strategy instruction on specific strategies such as comprehension monitoring. For example, Miller, Giovenco, and Rentiers (1987) examined the benefit of self-instruction training on performance of below average and above average readers. Forty eight 4th and 5th graders were tested on their ability to detect sentence contradictions in short expository texts after receiving either three sessions of self-instruction or equivalent didactic instruction. Twenty-four children in the self-instruction group were taught a series of self-statements designed to define the task, to select an approach to complete the task, to

evaluate the approach taken, to reinforce the learners' efforts, and to check on the completion of the task. The task closely resembled metacognitive and monitoring reading strategies. Subjects in the control group were not exposed to the self-verbalization strategies. Results of think aloud protocols and post-reading questions on nine passages indicated that self-regulatory remediation strategy in reading was successful in enhancing students' regulatory process while reading.

Loranger (1997) conducted another similar study to determine whether students who were taught specific research-based strategies using a transactional strategy instruction approach would improve in comprehension achievement and be more engaged during reading groups. The transactional strategies instruction refers to an approach that involves teaching readers to use comprehension strategies as they jointly construct interpretations of text. The emphasis is on making meaning of the text. Vocabulary instruction occurs as needed when students encounter difficulty while reading. The participants in this study were thirty-two 4th grade students between ages of 8 to 10. The treatment group was taught four comprehension strategies: predicting, questioning, clarifying, and summarizing which were parts of a reciprocal teaching method proposed by Brown and Palincsar (1985). The control group was conducted as a traditional reading group and the study lasted over eight weeks for a total of three hours of instruction per week. The reading sessions were videotaped and pre- and post- interviewed to determine knowledge of strategies performed by the students. Students were also required to keep response journals about their reading sessions. The findings favored the treatment group and Loranger (1997) concluded that transactional reading strategies training is an effective method in improving students' reading achievement.

Reading strategies and motivation in the L1 context

In L1 settings, the strongest evidence of the direct impact of positive motivation on reading comes from Guthrie and his colleagues. In their studies, they demonstrated the impact of

reading engagement on both reading amount and reading comprehension (Wigfield and Guthrie, 1997; Guthrie et al., 1997). They maintain that high motivation is highly correlated with the amount of reading. In addition, Schidfele (1999) demonstrated that personal interest (long-term intrinsic interest) is a significant predictor of comprehension and learning. Instruction of individual reading strategies has been shown to have a positive effect on reading comprehension, awareness of using strategies as well as motivation to read (Autrey, 1999; Black, 1995; Carriedo, and Alosno-Tapia, 1995; Cooper, 1998; Druitt, 2002; Guthrie et al., 1995, National Reading Panel, 2000). Another impact of teaching students how to use reading strategies to solve comprehension problems is on their motivation to read (Choochom, 1995; Guthrie, 2001; Guthrie and Alao, 1997; Hurst, 2004; Knoll, 2000). 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. (2001, 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 on their reading abilities. Based on this notion, the assumption of this study is that once students begin to know how to use reading strategies in English reading and take more ownership of their reading, then motivation would improve (Snow, 2002). Motivation and reading strategies are related in some ways. For instance, research has found that a student's motivation level impacts a student's willingness of using comprehension strategies (Choochom, 1995). In a survey study examining the effect of motivational orientation and strategy use with ninety students in the seventh, eighth, and ninth graders, Choochom (1995) concluded that intrinsically motivated students employed more strategies, exhibited greater frequency of self-regulation, and comprehended more from texts.

Besides, reading materials of high interest in a particular reading topic leads to high motivation, which leads to high comprehension (Hurst, 2004; Snow, 2002).

Summary of Reading Strategy Study in the L1 Context

Reading for understanding is a complex cognitive skill in which a reader constructs meaning by relating information from the text to prior knowledge. When a reading text can be easily understood or a reading task is simple, a reader can comprehend in the automatic way. But if a reading task is above one's reading level or difficult to understand, a reader needs to regulate his or her process of meaning construction more consciously (Baker and Brown, 1984). For that reason, reading instruction in how to employ reading strategies is necessary for reading comprehension (Snow, 2002). Strategy-based reading instruction has always been regarded as very important in educational psychology and reading pedagogy in L1 learning situation, as learner's internal monitoring and controlling of their learning processes are important to effective learning (Flavell, 1992; Pressley, 2002). Research along this line also indicates that the process at the metacognitive level plays a crucial role in the development of intelligence and helps learners to take active control of their learning (Pressley and Afflerbach, 1995). As extension of the studies on the differences between good and poor readers, follow-up studies on the effects of reciprocal strategy instruction have also been reported to have positive effects on learners' reading improvement (Loranger, 1997; Palincsar and Brown, 1984), and thus lend support to the benefit of strategy instruction. In all these L1 studies, L1 learners have demonstrated improvement in reading comprehension by virtue of the reading strategy instruction program they have gone through.

From the above discussion, it is clear that reading strategy instruction does improve reading achievement of young L1 children as well as L1 students with reading problems. In general, these L1 reading strategy training studies support the notion that students can be taught

to use strategies in helping them to comprehend better and read at ease. In addition, reading strategies should be explicitly and directly taught so students can understand the importance and application of reading strategies to reading. It is through explicit teaching of that reading comprehension and monitoring could be improved. Therefore, the goals for reading strategy instruction should be to enable students to select appropriate strategies, familiarize themselves with all kinds of reading strategies, employ them to solve reading problems (Presley, Johnson, Symons, McGoldrick, and Kurita, 1989; Wilhelm, 2001), and have them independently initiated by the students (Ellis, 1994; NRP, 2000; Snow, 2002). Moreover, effective reading does not rely on a single strategy, but incorporates the coordination of several strategies (Snow, 2002; Pressley and Wharton-McDonald, 1997) and involves the "constant, ongoing adaptation of many cognitive processes." (Williams, 2002, p.244), that is metacognitive reading strategy awareness.

After reviewing 3 decades of the current research on strategic reading instruction, Grabe (2004) summarizes the most contemporary discussions among L1 researchers center on the use of and training in multiple strategies to achieve comprehension (commonly including summarizing, clarifying, predicting, imaging, forming questions, using prior knowledge, monitoring, and evaluating). As the multiple strategies research suggests, most researchers now see that real value in teaching strategies as combined-strategies instruction rather than as independent processes or as processes taught independently of basic comprehension with instructional texts (Baker, 2002; Pressley, 2000). One should keep in mind that reading strategy instruction is not magic wand that will definitely improve students' reading comprehension; however, it is the students themselves who should constantly reflect and evaluate their individual needs during the reading process. The action of constantly reflection and evaluation is the "metacognition" that readers should possess in order to be successful readers. Agreeing with this

conclusion from L1 studies, I believe that incorporating reading strategies instruction into English as a foreign language classes would also help to improve EFL students' reading comprehension.

Reading Strategies in the L2 Context

A great deal of research on reading strategy in the first language has revealed its importance in the reading process and has applied to L2 reading domain. Researchers in L2 contexts conducted studies that were aimed not only at uncovering possible reading strategies which learners used (Anderson, 1991; Block, 1986; Hosenfled, 1977), but also the effects of strategic reading instruction on reading improvement (Carrell et al., 1989; Janzen and Stoller, 1998). For instance, Hosenfled (1977) started with an investigation in finding the different reading behaviors and strategies between good readers and poor readers of French as a second language. Similar to the findings of L1 reading study, there were evidence showing that the different strategies usage among good and poor L2 readers. Later in the last three decades, the attention in second language reading research has been focused on "understanding what proficient, skilled L2 readers typically do while reading, including identifying the strategies they use and how and under what conditions they use those strategies." (Sheorey and Mokhtari, 2001, p. 423). In other words, studies were conducted to investigate successful and unsuccessful L2 readers' reading strategy use through a variety of techniques such as think-aloud, interview, and questionnaire surveys. In addition to the characteristics of good and poor L2 readers, L2 researchers have tried to examine all the variables such as language backgrounds, learning preference, language proficiency, gender, cultural backgrounds, etc., which might affect L2 readers' strategy usage (Chamot, 2005). For example, studies which have examined the relationship between gender and strategy use have come to mixed and inconsistent conclusions (Ehrman, Leaver, and Oxford, 2003, 1990; Green and Oxford, 1995; Wharton, 2000). Ehrman

and Oxford (1989) and Green and Oxford (1995) have came to the same conclusion by discovering distinct gender differences in strategy use, while Ehrman and Oxford's (1990) failed to discover any evidence of differing language learning strategy use between sexes. It might be concluded that although men and women do not always demonstrate differences in language learning strategy use, where differences are found women tend to use more language learning strategies than men. On the other hand, Wharton's (2000) study found that men used more strategies than women (Wharton, 2000). As for the relationship between language learning strategies and the student's proficiency level is clearer. More proficient readers use a greater variety and often a greater number of reading strategies (Anderson, 2005; Green and Oxfrod, 1995; O'Malley & Chamot, 1990; Wharton, 2000).

Later in the early 1980s, several L2 researchers also began training poor L2 readers to use some of the same strategies that skilled readers do with the belief that once poor L2 readers were taught reading strategies, then their reading comprehension would improve. However, due to the complex traits of L2 readers in terms of their diverse linguistic and non-linguistic factors as well as different research methodology being used, findings from L2 research were unable to come to conclusive findings. The following discussion will categorize previous L2 reading strategies studies into descriptive studies and experimental studies.

Descriptive studies in L2 context

Taking cues from L1 reading researchers, second language researchers began to investigate differences between proficient and less-proficient readers in the late 1970s. Hosenfled (1977, cited in Carrell, et al., 1998) is widely acknowledged as the first to explore the processing strategies of second language texts by good and poor readers of French. Her subjects were 9th graders learning French as a second language. They were asked to read in French but reported in English about their thinking processes while reading French text. Through think-

aloud protocols, Hosenfeld found that successful readers of French as an L2 have the following characteristics: (1) keep the meaning of a passage in mind while reading, (2) read in "broad phrases," (3) skipped unimportant words, (4) had a positive view in reading. (Carrell et al., 1998, p.121). On the contrary, the unsuccessful readers of French as an L2 have the following characteristics: (1) lost the meaning of sentences as soon as they decoded them, (2) read in short phrases, (3) viewed all words as important to total phrase meaning and thus rarely skipped words as unimportant, and (4) had a negative self-view as a reader. (Carrell et al., 1998, p.121). This preliminary study clearly described the strategies of good and poor L2 readers used to process the reading text. In spite of its contribution, however, this study has been questioned for not linking the strategy use to comprehension of specific paragraphs or the text as a whole. The data only focused on sentence-level comprehension rather than overall comprehension of the entire text. Besides, think-aloud protocols, which did provide rich insights into unobservable mental reading strategies, tended to reveal on-line processing instead of metacognitive aspects of planning or evaluating (Chamot, 2004).

Years later, in a brief report of their research findings, Knight, Padron, and Waxman (1985) used an interview and think-aloud protocol to report the frequency and types of strategy use of fifteen native English speaking (defined as good readers) and twenty-three mainstreamed Spanish bilingual (defined as poor readers) elementary school students. The result showed significant differences in terms of both the frequency of strategy use while reading English texts as well as the types of strategies used. In general, they found that monolingual English readers used several top-down strategies and twice as many other strategies than bilingual readers used such as concentrating, noting details, and self-questioning. Spanish bilinguals, on the other hand, used fewer metacognitive strategies than native English speakers. From this data, Knight,

Padron, and Waxman (1985) concluded that the bilingual students' inability of using comprehension strategies was because they focused so much on decoding skills in reading English texts. Another possible explanation was that that they had not developed their own transferable strategies in their L1 due to early mainstreaming. This study offered insight into the effect of language backgrounds on the use of reading strategies. However, similar to Hosenfeld's preliminary study, this study has been challenged for not reporting the relationship between reading strategy usage and reading comprehension, either. What's more, the comparison made between native English speakers and ESL readers seems problematic because the L2 reading process is a lot more complicated due to other linguistic and nonlinguistic factors. It is therefore recommended that comparison should be drawn between L1 and L2 individuals with similar reading behaviors.

In order to accommodate for the previous two studies of not relating reading strategy usage to reading comprehension, Block (1986) chose to focus only on less proficient readers who failed in a college reading proficiency test before the study. Block's subjects were six ESL students (three Chinese and three Spanish) and three remedial native English speakers of college level. Prior to entering college, the ESL students in her study had attended in American secondary schools for approximately the same amount of time. Despite the fact that these students had similar language proficiency, Block found differences in strategy use within this group by using one-on-one interview / think-aloud technique. Subjects were asked to engage in thinking-aloud while reading two expository passages selected from an introductory psychology textbook and reported their reading process after each sentence. The process was recorded, transcribed, and scored, and then 20 multiple-choice comprehension questions were administered. Block then developed a coding scheme to classify reported strategies into two types of strategies:

(1) local and (2) general strategies. Of the nine students in the study, the findings showed that the readers with higher comprehension scores on the retellings and multiple choice questions used "general strategies" of integrating new information with old information, distinguishing main ideas from details, referring to their background, and focusing on the textual meaning as a whole. On the other hand, readers with lower comprehension scores rarely distinguished main ideas from details, rarely referred to their background, infrequently focused on textual meanings, and seldom integrated old information with new information. In addition, Block found that ESL students used metacognitive strategies and monitored comprehension similar to native English speakers. Thus, conflicting with the previous two studies, this study demonstrated that language backgrounds did not account for the use of particular strategies. Moreover, there was evidence of individual difference and all the readers made connections to their own experiences. What made a difference was that readers with low comprehension scores failed to reconnect back to the original text. Since this study was conducted only with non-proficient readers, it was later criticized that there is no way to know the role of language proficiency in reading strategy use.

Sarig (1987) investigated the contribution of L1 reading strategies and L2 reading proficiency on L2 reading as well as the relationship between L1 and L2 reading strategies. Her subjects were ten Israeli female high school EFL students of Hebrew as an L1 and English as a foreign language. Sarig (1987) set out to compare the strategies her subjects used in reading academic texts in each language, hypothesizing that L1 strategies transfer to L2 reading. The sample all had received eight years of formal instruction in English and represented low, intermediate, and high proficiency levels as determined by teacher evaluations and the results of proficiency test scores. Through think-aloud interviews, her subjects performed main idea analysis and overall text message syntheses using one text in their L1 and one in their L2. Then,

Sarig analyzed the frequencies and types of reading behaviors of her subjects in terms of what she called "reading moves," or strategies. In addition to identifying and classifying the types and frequency of strategies employed by her subjects, Sarig further analyzed the degree of effectiveness of each strategies used by her subjects in contributing to successful task performance depending on whether they promoted or discouraged comprehension. Sarig identified a number of strategies, and organized them into four types: "technical-aid strategies" such as skimming for the general idea, "clarification and simplification strategies" such as semantic decoding, "coherence-detecting strategies" such as using content or textual schemata to make sense of the entire text, and "monitoring strategies". Her results showed that the strategies employed by her subjects in reading L1 and L2 texts were virtually identical in terms of types, frequency, proportion, and relative effectiveness for each language. Therefore, the findings of this study are accord with Block's (1986) study in two aspects. First, both successful and unsuccessful readers use global strategies. In other words, the strategies were not inherently good or bad. Success in reading was shown to be a result of the quality of a reader's unique usage of a combination usage of strategies, rather than the use of a certain strategy. Second, the L2 reading process has a high degree of individuality. This study was unique in that strategies transfer did appear from L1 to L2 reading process and the ability to transfer is not dependent on foreign language proficiency. In other words, when lacking of L2 proficiency, L2 students will rely on L1 reading strategy to compensate their L2 disadvantage.

Anderson (1991) conducted another line of reading research by choosing to investigate the differences in second language reading strategy under two reading tasks-standardize reading test and academic reading task. Twenty-eight subjects in Anderson's study were Spanish L1 students of mixed proficiency levels from various countries studying ESL intensively at an

American university. Using a think-aloud protocol on two L2 reading tasks: 1) a standardized reading test with multiple choice comprehension questions, and 2) an academic reading task of greater length followed by multiple choice questions), Anderson recorded the types and frequencies of strategies employed by his research participants. He then performed simple regression analyses using the subjects' proficiency levels as independent variables and both standardized test and academic reading task scores as dependent variables. Results showed that L2 language proficiency accounted for more of the variance on the standardized test than any strategy or combination of strategies. As for the academic reading task, language proficiency accounted for only a small percentage of score variance. A key finding was that there is no single set of processing strategies that significantly contribute to success on these two reading tasks. Regardless the subjects' different proficiency levels, it seems that the readers with high and low scores use of the same strategies when reading and when answering comprehension questions on both tasks. This finding led Anderson to conclude that strategies were "per se not intrinsically either successful or unsuccessful, but rather it is the effective use of a strategy that makes comprehension successful." (1991, p.466). In general, subjects who reported using more strategies tended to score higher on both tasks and there was a significant relationship between frequency of strategy usage and subjects' scores. No significant relationship was found between the numbers of unique strategies used and test scores. Therefore, Anderson concluded from his data that it is not sufficient to know what strategies to use, but a reader must know how to use them according to their individual styles and needs successfully.

Block (1992) investigated the use of reading strategies with regard to proficient and non-proficient readers. There were eleven native speakers and fourteen Chinese speakers of college level. They were further categorized as 16 proficient readers (8 ESL and 8 native speakers) and 9

less proficient readers (6 ESL and 3 native speakers). She used a think-aloud method to compare the comprehension-monitoring processes of native speakers and second language learners of English as they dealt with reference and vocabulary problems in an expository passage. The findings showed that ESL speakers with more English proficiency took more actions to solve problems and check solutions. Block reported that "differences that existed in monitoring seemed due more to reading proficiency than to language backgrounds of the readers." (p.334). An important conclusion from this study was that "the less proficient readers seemed to favor a local word processing strategy while the more proficient readers tended to prefer a more global meaning based one." (p.334). This study thus indicated a shift in strategy use based on language proficiency.

Up to this point, the above studies seem to point out two very important findings: 1) good readers use strategies that best solve the problems, while 2) poor readers tend to use less effective and inappropriate reading strategies during reading. However, the relationship between reading strategies and comprehension was found to be more complicated than was suggested by these early studies. For instance, both Sarig (1987) and Anderson (1991) questioned the traditional dichotomy of good and poor readers. They think there is no good strategy or poor strategy; instead, it is the reader who decides which strategy to use when comprehension breaks down in the reading process. Anderson's study indicated that the same kinds of strategies were used by both high and low comprehension readers. Therefore, there is no one-to-one relationship between particular strategies and success or lack of success in reading comprehension. Moreover, or perhaps in contrast to apparent group differences in terms of proficiency and general approaches to L2 reading seen in the studies of Anderson (1991), Block (1986), Hosenfeld (1977), Knight, Padron, and Waxman (1985), and Sarig's (1987) findings suggested a

great degree of variability between individual learners. Anderson's (1991) findings and conclusion echoed Sarig's (1987) in two important perspectives. First, strategy use was found to be highly individualistic and no strategy was found to be inherently good when checked against subjects' test scores. Second, successful use of strategies, that is, using strategies strategically, requires a metacognitive approach to and control of the reading process. In closing, Anderson (1991) suggests that effective reading strategies instruction aims to foster language learners' development as strategic readers, which is best achieved through explicit reading strategy instruction of not only the what and how of individual strategy but, equally important the when and why as well. To be specific, that is the metacognitive awareness in the reading process.

Similar to Sarig (1987) and Anderson's findings, Kern (1997) carried out a case study of two American college juniors who learned French as a second language. The two students have different proficiency levels in French reading. The measurement consisted of a reading task interview. After analyzing their reading strategies, Kern found that the two readers of different language proficiencies used similar reading strategies, but they revealed differences in how they used these strategies in certain instances. Kern, once again, noted that no strategy has an inherently bad or good quality. The effectiveness of some strategies is dependent on a variety of contextual factors, including a reader's purpose, language competence, learning style, and L1 literacy background, as well as features of the particular text being read (Kern, 1997).

To sum up, no straightforward relationship appears to exist between strategy use and reading ability. As research evidence indicated, "use of certain reading strategies does not always lead to successful reading comprehension, while use of other strategies does not always result in unsuccessful reading comprehension." (Carrell, 1991, p.168). In addition, "strategies may not be inherently good or bad for a given reader. Rather, they may or may not promote

successful comprehension of a text, depending on the particular reader, the particular text, the context in which the reading is going on, and the choice of other strategies in conjunction with the chosen one."(Cohen, 1987, pp. 132-133). Therefore, to be strategic readers, students not only need to know what strategies to use but they also need to be aware of when, why, and how to use these strategies according to their individual preference appropriately and effectively. This kind of knowledge is called metacognitive awareness or metacognitive reading strategies. The following section will discuss previous research studies on metacognitive reading strategy.

Descriptive studies in Metacognitive reading strategies in L2 context

Research in the area of reading strategies has recently started to focus on the role of metacognition. Researchers in L1 area like Flavell (1992) and Pressley (2002) in particular argue for giving greater attention to the role of metacognition in helping students' self-regulation of their own learning. They maintain that students' metacognition, i.e. their awareness of, and cognitive control and regulation over, learning, can enhance learning efficiency and self-efficacy (Vennman and Beishuizen, 2004). "Metacognition" has been defined as "thinking about thinking" (Anderson, 1999, p.72 and Carrell, 1998, p.7) and as "cognition about cognition" (Carrell, 1998, p. 7). Sheorey and Mokhtari (2001) include both awareness and monitoring in their conceptualization of metacognition, which is defined as "the knowledge of the reader's cognition relative to the reading process and the self-control mechanism they use to monitor and enhance comprehension." (p. 432). Anderson (2002) briefly refers to metacognition as "the ability to reflect on what you know and do and what you do not know and you do not do." (p.10). A number of research studies with regard to metacognition (Barnett, 1988; Carrell, 1989; Sheorey and Mokhtari, 2001; Zhang, 2008; Kong, 2006) have examined the relationship between metacognition and reading strategies. For instance, Devine (1984) conducted a case study with two participants of beginning and intermediate language proficiency levels as defined by

University of Michigan Placement test. Devine (1984) used oral reading interviews to investigate second language readers' conceptualizations of their reading in a second language. Based on what language units they confessed to focus on, Devine classified subjects as sound-, word-, or meaning-centered. The finding found that different readers considered different aspects of reading as important. Results indicated that meaning-centered readers had good to excellent comprehension, while sound-centered readers were judged to have poor or very poor comprehension. In other words, the reader who used a meaning-centered approach demonstrated good reading comprehension. It was also observed that the use of a meaning-centered approach can mitigate the effects of low language proficiency, and thus allowing a reader to successfully transfer good first language reading strategies to the second language reading.

Barnett (1988) conducted a study of foreign language reading to investigate the relationships among reading comprehension, strategy use, and perceived strategy use (strategy awareness). Two groups of fourth semester French students in college participated in Barnett's study which followed several steps. First, students read an unfamiliar passage in French and rewrote the events in English. Second, before reading another unfamiliar story, they answered some general knowledge questions about it and then read it. Then, they answered a sixteen-item test to choose the best phrase, sentence, or paragraph to continue each item (strategy use). At last, students were asked to answer a questionnaire about reading strategies that they thought they had used while reading (perceived strategy use). The results indicated that all three strategies (reading comprehension, strategy use and perceived strategy use) were significantly correlated for cognitively mature university-level readers of French as a foreign language. Moreover, results showed that as scores of effective strategy use increased, perceived effective strategy use increased, too. Barnett concluded that students who kept context in mind

comprehended more of their reading than students who didn't use this strategy. Additionally, students who thought they used strategies effectively read and understood better than those who did not think so. Barnett stated that "students who were taught strategy use did show a significantly greater ability to read through context than did their traditionally taught peers." (p.157).

Carrell (1989) appears to have been the first L2 reading researchers to specifically focus on metacognition in second language reading strategy use, and to do so in a more quantitative fashion. In order to gather data on her subjects' perceptions of their reading abilities, repair strategies, preferred reading strategies, and the difficulties that they face when reading in both their first language and second language, Carrell administered a questionnaire to forty-five native Spanish-speaking intensive ESL students of intermediate and advanced proficiency and seventy-five native English speaking students studying Spanish as a foreign language of three different proficiency levels at a large American university. In addition, Carrell's subjects took a reading test in which they read two passages in their L1 and two passages in their L2 and then answered multiple-choice comprehension questions. Using simple regression analysis with questionnaire responses as her independent variables and L1 and L2 test scores as her dependent variables, Carrell found that for both her ESL and her Spanish as a second language groups, local or bottom-up approaches to reading (that is, decoding and sentences level strategies) negatively correlated with L1 test performance. For Spanish L1 students, the results showed significant correlations with more global or top-down strategies reported, which implied that these readers approached their reading in English in a similar fashion as their reading in their L1, Spanish. However, for English L2 students, Carrell obtained the opposite results. For native English speaking students reading Spanish text, self-reported local approaches positively correlated with

test performance. Carrell explained these results as being due to the relative difference in proficiency levels between the two groups as well as differences in learning environments. Specifically, Carrell's ESL subjects were learning English for academic purposes in an immersion environment, making functional use of their second language, whereas her subjects reading Spanish L2 text were studying the language as a foreign language in an obviously non-immersion environment and had only been studying for periods ranging from one to three years. Thus, as Carrell argues here, as well as in her later work, effective reading strategy instruction should seek to develop learners' metacognitive awareness and knowledge of second language reading process through clear and explicit explanation, because it is possible that L2 readers will be able to transfer L1 reading strategies to L2 reading tasks. Perhaps reading strategies instruction can be viewed as an attempt to jump start the transfer process and provide L2 readers with compensatory skills to construct meaning from texts before their bottom-up skills become automatized (Carrell, 1989).

Sheorey and Mokhtari (2001) compared the metacognitive awareness of the reading strategies of ESL college students with native speakers represented by American students. They sought to answer three questions: 1) are there any differences between ESL and US students in their perception of using strategies? 2) are there any gender differences? and 3) is there a relationship between reported strategy and self-rated reading ability? Students provided information about their backgrounds including rating their reading ability. Then they answered the *Survey of Reading Strategies* (SORS) which is divided into three categories: 1) metacognitive, 2) cognitive, and 3) support strategies. Results showed that ESL students reported using more support strategies. In addition, both ESL and the US high reading ability speakers reported more use of support strategies than the low-reading ability ones. Also, the gender analysis showed that

female students in general reported using certain strategies more than the males. However, the researchers stated that because of the unequal numbers of females and males in the study, gender differences were not statistically significant. An important finding was that reading ability was significantly related to students' reported usage of strategies. Sheorey and Mokhtari state that "students who gave themselves a high rating on reading ability, regardless of their language background, reported a higher use of all the reading strategies in the survey than did those students who gave themselves a low reading ability rating." (p. 446).

Summary of descriptive studies in L2 context

There are several points can be drawn from the above discussion regarding to the descriptive studies in the L2. First, proficient L2 readers are more focused on extracting meaning from texts and report greater frequency in (largely top-down) strategy use than less-proficient readers. Second, less proficient readers tend to focus more attention on decoding or bottom-up processes when reading a text. Third, reading strategies themselves are neither inherently good or bad. Forth, proficient or less proficient L2 readers do not significantly differ in terms of the number and types of unique strategies used in reading. Fifth, whether language backgrounds account for the reading strategy use is inconclusive. Last, but not least, metacognition, as it relates to a readers' overall approach to the reading task, appears to be important for successful comprehension by means of planning, monitoring, and evaluating reading, and coordinating use of strategies.

Experimental studies in L2 context

As early as the mid-1980, Hamp-Lyons (1985) appears to have been the first second language researcher to compare the relative effects of "traditional" and "comprehension strategy-based" reading instruction with intermediate-level ESL students. Her subjects were twenty-four Asian college students. They were divided into three matched groups, each with one of two

different teachers using different teaching methods, but both using the same text. These groups were each taught by a different teacher, received "traditional" instruction, with the third group receiving experimental "text-strategic" training. The posttest was identical to the pretest and the memory effect was discounted as there was a 16- week interval between pretest and posttest. Other intervening variables such as ages, majors, learner styles, time in the US and motivation were uncontrolled and thus assumed to be randomly distributed. The results proved to be statistically significant in favor of the experimental group. However, as Kern notes, only eight out of twenty-four subjects received reading comprehension strategy instruction in the study; the sample size was considered too small to statistically significant to have relevance.

Carrell, Pharis and Liberto (1989) examined the effectiveness of reading strategy training of semantic mapping (SM) and experience-text-relationship (ETR) methods on twelve students' reading comprehension and both methods resulted in the gained score of subjects' reading comprehension. This study involved a heterogeneous group of twenty-six ESL students in a level four intensive ESL program at the Southern Illinois University. Two experimental groups were formed of which one received the semantic mapping (SM) training and the other received the experience-text-relationship (ETR hereafter) training. Two control groups simply received the pre- and posttests. During four-day training, the semantic mapping (SM hereafter) group was given a series of reading passages with questions used to stimulate discussion and semantic maps were created. Meanwhile, the ETR group received the same passages as SM group and training activities included note taking, discussion, comprehension questions and vocabulary activities that related to the texts. All subjects received a pretest prior to the onset of training and a posttest nine days after the training. The tests included questions in varied formats and two out of the three passages on the test required the subjects to complete semantic maps. Scoring was

done according to predetermined criteria. The results indicated that the control group did not have significant gains in the scores between their pre- and posttests on any four dependent measures which were multiple-choice questions, open-ended questions, cloze semantic mapping, and open-ended semantic mapping questions. Each training group, however, did show significant gain scores in the open-ended questions, but not on multiple-choice questions. Carrell, Pharis and Liberto (1989) do caution, however, that such results need to be replicated or supported by further research in this area. The contribution of this study is that, in general, the strategy training on the two methods was successful in enhancing second language reading comprehension. More specifically, both groups of students showed similar significant gains on one of the measures (open-ended questions). However, each group showed different gain scores on other measures (cloze semantic maps, and open-ended semantic maps).

Carrell, Pharis and Liberto (1989) suggest that, based on the results, adult students in second reading courses "should benefit from the inclusion of explicit, comprehension fostering metacognitive strategy training."(p. 669). In spite of the contribution of this study to L2 reading strategy training field, this study has been questioned for the following aspects. First, there is no information regarding the validity of multiple choice questions. Second, results demonstrated that both semantic mapping and Experience-Text-Relationship training improved students' reading comprehension. However, it is not clear to what extend these strategies are differ. Third, the researchers didn't explain why semantic mapping was used as part of pre-and post tests. Besides, including semantic mapping in the post-test clearly favored the group who was trained with this technique. Fourth, no delay test was administered to see if the treatment effect was maintained. Fifth, the sample size of this study was too small (N=26) and whether the participants were randomly selected or not was not clear. Sixth, since different teachers taught

four groups, there is a possible threat to the validity of the experiment. Last but the most important, since ESL readers were trained for using semantic mapping to improve their reading behavior and comprehension in a classroom-based task, there was no evidence proving that they would be able to use this method on future and independent reading.

Kern (1989) conducted a semester-long study involving fifty-three students of French as a second language at a large American college to determine the effect of reading strategy training on reading comprehension and word inference ability. The subjects were native speakers of English and enrolled in the third semester ("intermediate-level") of French classes. Subjects were required to read longer authentic French literary text in order to successfully complete course requirements. Participation was voluntary, but training was conducted as part of normal French classes. The treatment group had two sections and the control group has three sections. In total, five different instructors were involved in the study. The treatment group received explicit instruction in reading strategy use in addition to the normal course content, while the control group received no instruction in reading strategy use, but covered the same materials as the treatment group. After the treatment, subjects were presented with a passage in French and were asked to report what they were thinking as they read each sentence, what they understood, what they didn't understand, how they determined the meaning of unfamiliar words, whether they made predictions or inferences, and whether they translated into English. Both comprehension and word inference measurements were derived from the reading task. Data analysis revealed that reading strategy training has a strong positive effect on L2 reader comprehension gain scores. Those who had the most difficulty in reading appeared to benefit the most from reading strategy instruction. Kern (1989) suggested that mid and high ability readers may have already transferred more of their effective L1 reading strategies to the second language

reading task. As for the effects of such strategy training on word inference ability, the results were less clear. Overall, Kern (1989) reported significant improvement with foreign language readers of French over a semester of training with emphasis placed on word, sentence, discourse, and reading purposes analysis strategies. Despite its positive result in improving reading comprehension, there are some gaps in this study. First, Kern (1989) didn't explain the possible effects of the confounding variable caused by five instructors who were involved in the study. Second, this study didn't demonstrate how these strategies were taught.

Strategy instruction was also found to be beneficial to low-level readers as demonstrated in a year-long qualitative study conducted by Jimenez and Games (1996). During a two-week period in a middle school, three bilingual students in English and Spanish were taught how to engage in a think-aloud method while reading. In addition, explicit metacognitive and cognitive reading strategies were taught in order to improve their poor reading skills. Through the use of culturally relevant texts, the instruction designed to promote comprehension was found to have a strong potential for promoting and fostering the reading ability of such students who were performing at low levels of literacy in the middle school grades.

Song (1998) also took a metacognitive approach to teach reading strategies in her study with adult Korean EFL readers in order to investigate instructional effects on reading comprehension. Song attempted to incorporate L1 reading research conducted largely with "poor" young readers and extends it to the adult second language classroom. The subjects were fifty tertiary-level Korean students of mixed language proficiency levels majoring in liberal-arts. The study was designed with all subjects receiving the experimental treatment. The data was analyzed in terms of low, mid, and high language proficiency groups as established on a treatment pretest. Strategy training took place over a 14-week semester and was integrated into

the regular classroom curriculum. The instructional approach employed was virtually identical to Brown and Palincsar's (1984) reciprocal teaching (one-on-one based) in terms of procedures with some modifications to fit the large size of classroom setting. Four reading strategies (summarizing, questioning, predicating, and clarifying) were taught simultaneously as a single four-step metacognitive approach to L2 reading. Learners were taught to read the beginning of a text and to first summarize the content of what had just been read. Next, questions were composed based on the text content. The third step was to predict the content of the following sections of the text. The last step was to evaluate the text content for compatibility with prior knowledge and identifying points that still needed clarification (Song, 1998).

In teaching the above approach to her subjects, Song states that she also included explicit explanations in L1 (Korean) of the nature of strategic learning and strategic reading. Song states that, in addition to the four main strategies taught, other strategies such as skimming, contextual word-guessing and using text structure to aid comprehension were also introduced to students on an occasional basis. Data collection for the study was done by means of a test-retest format. The instrument which served as both pretest and posttest was a multiple-choice reading proficiency test constructed for the purposes of the study. The test contained six short passages, each ranging from 302 -333 words in length. Each passage had three types of question items: main idea, factual, and inference. Results of the pretest administration were used to classify subjects as low-, mid-, and high-proficiency for later analysis. Pretest was also used as the posttest which as was administered at the end of the semester-long training period. Data was analyzed by means of Repeat-Measure ANOVA, with test time and proficiency level as the independent variables, and test scores as the dependent variables. Both significant main and interaction effects were reported, with a significant difference between overall pretest and posttest means

and training shown to benefit low and mid-proficiency learners more than high proficiency learners. A follow-up ANOVA conducted on question-types showed significant gains for main idea and inference questions.

Song concludes that the treatment did have a significant positive effect on her subjects' reading comprehension in terms of understanding main ideas and making inferences, which benefit low and mid-proficiency learners. Non-significant gains for high proficiency learners were interpreted as evidence of prior strategy use. While there are some encouraging aspects to Song's study- a relatively long training period, explanations of critical information in subject's L1, which support the validity of the study, and the lack of any control or comparison group creates some doubts as to the cause of her subject' significant gains.

Some studies have found that direct instruction of reading strategies were of greater help to students with lower proficiency in the L2. Based on the success of teaching students summarization strategies in L1, Cordero-Ponce (2000) conducted a study to test the effects of L2 metacognitive strategy training in summarization on the ability to comprehend and summarize expository texts. Thirty university level students enrolled at an intermediate French course were divided into the experimental and control groups. Testing included pretest, immediate posttest, and delayed posttest with all of them involving two tasks written recall and summarization. The training was conducted on two periods of sixty minutes. The researcher introduced the following rules to teach summarization: collapse list, use topic sentences, get rid of unnecessary detail and collapse paragraphs. Results indicated that students significantly improved their comprehension and recalled more ideas in the immediate posttest. In addition, training had positive effects on students' ability to summarize French texts incorporating the rules introduced to them in the immediate and delayed posttest. The author concluded that these summarization strategies can

be taught to college students with low levels of L2 proficiency to provide them with cognitive resources to rely on during comprehension. Cordero-Ponce (2000) comments this training study with intermediate-level French students that "such training programs may provide students with compensatory cognitive resources to rely upon during comprehension, thereby offsetting, to a certain degree, their limited L2 linguistic knowledge and lessening the cognitive load." (p.346).

Salataci and Akyel (2002) examined the impact of teaching reading strategies to pre-intermediate Turkish EFL students. They used the experience-text-relationship and reciprocal teaching methods. The instruction lasted four weeks (three hours a week). The strategies introduced and practiced by students included: using prior knowledge, summarizing, finding main ideas, prediction, clarification, and some other repair strategies. The findings indicated that students' use of bottom-up strategies such as using dictionaries and questioning meanings of word decrease when reading in English because they were not focused on word level understanding after the treatment. On the other hand, the instruction had a positive effect on students' use of top-down strategies when reading in English and Turkish. The strategies of prediction, summarizing, and using prior knowledge were used significantly more frequently. In addition, the use of metacognitive strategies was higher when reading in English after instruction. What's more, the reading comprehension scores increased after instruction.

Another line of L2 reading strategy training study has focused on providing L2 readers with knowledge of text structure. Research has found that different cultures have different ways of representing ideas in written text and this difference often causes certain amount of impact on L2 readers' reading comprehension while approaching English reading task. In response to this effect, Carrel (1985) conducted a training study with 25 high-intermediate proficiency college ESL students of various L1 backgrounds studying intensively at a large university in the US.

Over five one-hour class sessions in one week, subjects in the experimental group (N=14) received instruction which raised awareness of four types of English top-level structures (macrostructures) found in expository texts (comparison, causation, problem/solution, and collections of descriptions). Training for the experimental group initially centered on explicit and extensive explanations by the instructor concerning the nature of reading expository texts, the benefit of using the top-level structure strategy in supporting comprehension, and how to use the strategy with different top-level structure texts. In addition, students were given study packets with instructor explanations as well as practice texts and exercises for subjects to work on at their own pace. Checklists were also included in the packet so that subjects could "monitor and regulate their own learning." (p.736). During this period, a control group (N=11) read the same texts as the experimental group but engaged in various other linguistic and comprehension activities. Data collection instruments included pretest, posttest, and delay posttests on which subjects read two passages (one passage of comparison and one of collection of descriptions top-level structure) and produced written recalls without referring to the original texts. Recalls were done in the subjects' L2, English. For each test passage, subjects were also asked to identify the "organizational plan" the authors of each passage employed in writing through an open-ended question.

All written recalls were scored for the quantity and quality (in terms of top-level vs. lower-level ideas) of ideas recalled, with a reported interrater reliability of r = .96. In addition, the organization of each subject's recall was noted to check for subjects' use of the original top-level structure in the text in writing their recalls. Results of Chi-square and one-way ANOVA tests with the treatment as independent variable and text structure recognition, text structure recall use and posttest and delay posttest score (quantity and quality) as dependent variables,

showed significant differences in terms of recognition and use of top-level structures on the experimental group. In addition, a significant difference in posttest scores was found between the experimental and control groups in favor of the former, which appears to have held for the delayed posttest as well (although type of test employed was unspecified and statistics were not presented). Overall, the contribution of this study supports the notion that the explicit instruction in the top-level structures of English texts can enhance ESL students' comprehension and recall. It appears that based on the evidence presented in this conclusion is supported for the teaching of this particular strategy (use of knowledge of text structure) for strategy-based instruction as an instructional approach.

However, this study has been questioned for the following aspects. First, this study didn't specify how subjects were taught to actually use a text-structure based strategy (procedural knowledge), as opposed to merely being taught about text structure. Second, only 5 days of one hour per day training is a rather short training period (although this does appear to have produced significant results). Third, having subjects perform written recalls in their L2 rather than in their first language produced a potential violation of test content validity and likely had potential for producing confounding effects, although no differences were indicated between treatment groups on the pretest. Forth, the sample size (N= 25) of this study is small.

Modeled closely to Carrell's (1985) study with ESL students discussed above, Raymond (1993) studied the effects of text structure strategy training with French as a second language learners' recall. Forty-three native English speakers of French as a second language of high-intermediate proficiency levels were in the study. They ranged in ages from 18 to 23 and had completed five semesters (a total of 260 hours) of college level language study at a large Canadian university. Participants in the study volunteered to participate, but were paid for the

study. Subjects were divided into one experimental and one control group and were determined to be of equal proficiency by means of a pre-treatment standardized test. The study took place outside of the regular language class and was conducted by an outside instructor. During five one-hour training sessions spread over a two-week period, the experimental group received strategy training in the identification and use of five French top-level structures found in expository texts (description, sequence, causation, problem solution, and comparison) and accompanying signal words in order to promote recall. Instruction for the structure was designed to be metacognitive and included explicit instruction in: what was the strategy, why the strategy should be learned, how to use the specific strategy and when to use it. Short quizzes were provided to help the subjects to evaluate the use of the structure strategy. During the five sessions, the experimental group received strategy instruction, while another instructor taught the control group using the same texts as the experimental group for the same amount of time, but with standard questions and answers tasks. Data was gathered by means of pre- and post- tests on which subjects read one of two texts with the problem-solution top-level structure and determined to be roughly equivalent in terms of difficulty through readability measures, counterbalanced and randomly distributed so that half of the subjects read a given text on the pretest and the other half read the same text on the posttest. When subjects had finished reading the text, they answered 10 Likert-scale questions regarding their perceptions of text difficulty, memorability, affect, interest, background knowledge, and clarity of argument, organization, recommendations, content, and discussion of content (Raymond, 1993). After this was completed, subjects placed the text in an envelope and then recalled in L1 as much of the information in the text as possible in writing. Each subject's text reading time and recall writing time were also recorded. The posttest, given one month after the end of training, used the same

format as the pretest. Recalls were scored using an idea unit protocol, with scores calculated as ratios with the sum of the number of idea units present in a recall divided by the total number of units present in the original for each text. Because it was found that some of the subjects in both the experimental and control group "spontaneously" used the text top-level structure in their pretest recalls (that is, before the experimental group received explicit training on the structure strategy), it was determined that there was a difference in subjects' prior knowledge in the use of the text structure and signal words. Consequently, an analysis of covariance was first conducted on the data, with treatment condition as the independent variables, posttest recall score as dependent variable, and pretest recall score as a covariate. A mixed design repeated measure ANOVA was then performed with treatment, text, and text time (pretest stands for "Time I" while posttest stands for "Time II") as independent variables, and text recall mean (adjusted for pretest) as the dependent variable.

In contrast to Carrell's (1985) study, results of the analysis showed no main effect for treatment between groups. However, a within-group two-way interaction was found between text and time and a three-way within-group interaction was found between treatment, text, and time. That is, on the pretest, the two texts produced significantly different mean recall scores (analysis of difficulty and prior knowledge Liker items revealed significant differences between texts), which was also true on the posttests, but the text means reversed their relative position. This means that there was a higher recall mean for the more difficult text on the posttest and a corresponding drop for the easier text. For the experimental group, Raymond interpreted this interaction as the result of subjects' need to consciously apply a text structure strategy on the more difficult text in order to comprehension and recall it and it was not the case with the comparatively easier text. For the most part, no major problems were noted for this study.

However, as in the case of other intervention studies, the training period was short and may have contributed to the absence of main instructional effects. Besides, Raymond didn't offer any information regarding its validity in terms of the measurements used in the study. Moreover, using idea unit as a measurement of students' reading comprehension might not really be accurate since idea unit is affected by memory. Furthermore, the sample was selected through cluster randomization and thus more participants were needed. However, a significant gain was found on one text and as noted above, it was actually found to be the one that was more difficult. Findings from this study also make clear that reading comprehension is a complex interaction between reader, test, and task and that instruction in reading strategies may not offer quick solutions.

Summary of experimental studies in L2 context

From the above discussion regarding to the experimental studies in reading strategy training, several points can be summarized as the following. First, with regard to the benefits of strategy instruction, some results of the training studies reviewed here are mixed. Second, with various design and methodological problems, it gives us reasons to doubt the claimed benefits reported in several of the studies. Third, there are beneficial effects of training, especially for readers of lower language proficiency. Fourth, direct and explicit teaching of reading strategies had a strong positive effect on L2 readers' comprehension. Last, metacognitive strategy training in semantic mapping and experience-text relationship is effective in enhancing L2 reading comprehension.

Reading Strategy and Motivation in L2 context

In L2 settings, there is little research specifically on the relation between motivational variables and reading comprehension. Most L2 motivation research focuses more generally on language abilities. Dörnyei (2001) provides an excellent overview of motivational factors and

their influences on L2 learning. In Huang's (2006) survey study with 212 Taiwanese college students, the findings indicated that they would have read a lot more or extensively if they were taught reading strategies in high schools. Therefore, based on these studies with regard to the correlation between motivation and reading comprehension in L1 setting and L2 setting, it is believed that EFL students' reading motivation would rise after the metacognitive reading strategy instruction are implemented.

Reading Strategy Studies on Chinese Speakers

Most studies found for this literature review with regard to Chinese speakers learning English are descriptive in nature. Several western L2 reading researchers have studied Chinese EFL learners and found that Chinese EFL readers are unable to use their conceptual abilities to the fullest potential due to difficulty in transfer of reading skills from L1 to L2. As such, because the traditional method of learning is to memorize, they were unable to use the more abstract process strategies, such as guessing contextual meaning to attain "fluent levels of reading skill." (Field, 1985, p.175). For example, Chinese EFL readers' reading strategies were greatly different from those of their American counterparts (Kohn, 1992). According to Kohn's observation, American readers tend to read rapidly, while Chinese readers tended to reading slowly. This comment has later been criticized of being from Kohn's perspectives because he didn't ask his students how they themselves conceptualized their knowledge of or actual use of reading strategies. However, later a study conducted by Parry (1996) confirmed Kohn's conclusion. Parry (1996) analyzed 25 Chinese trainee-teachers' written journal entries and indicated that Chinese tended to use "bottom-up" strategies more than "top-down" strategies and this tendency was closely linked to their L1 literacy tradition and their understanding of the reading process. In contrast, Zhang's (2008) study investigated Chinese EFL readers' perceived use of reading strategies with an EFL reading strategies inventory (subject N=312 from China). His findings

suggested that, by and large, the Chinese readers actually use both "local" and "global" strategies for meaning-construction. The results of this study differed because readers who demonstrated higher levels of comprehension reported using more "global" strategies such as guessing meaning through inferences, while the readers who demonstrated lower levels of comprehension reported using more "local" strategies such as detailed word meaning.

Other than descriptive studies regarding to Chinese EFL learners' English reading characteristics, there are studies investigate the effects of other variables, such as language proficiency levels, text structures, and background knowledge on reading comprehension. For example, Chern (1993) carried out a study investigating Chinese readers' metacognitive awareness on text structure in both English and Chinese. This study tested the hypothesis that more proficient language learners are more aware of the strategies they use in reading. Subjects were twenty-eight native speakers of Mandarin Chinese who learned English as a Second Language in college level. Subjects recruited from fourth-year English majors were categorized as good readers while subjects drawn from first-year in other academic areas were categorized as poor readers. Subjects were first interviewed about their reading habits in Chinese and English. They then read two manipulated passages, one in English and one in Chinese. In each passage, eight function words were removed and replaced with nonsense words, characters, or character combinations. After reading, the subjects were interviewed about how they resolved difficulties in reading the passages. It was found that, in general, the subjects were more bothered by difficult words in English than by those in their native language. When confronted by unfamiliar words, good ESL readers used context clues to figure out meaning while reading in English. In contrast, poor readers translated them in Chinese and focused on lexical features in English. Results were consistent with previous research and thus concluded that the awareness of using

strategies to get meaning in reading in L2 appeared to distinguish good readers from poor readers. While in this study the poor readers appeared to be more aware of strategies in tackling words than in dealing with global comprehension, it reveals the need to emphasize the skills for holistic reading and it is advisable to enhance students' awareness of their own reading processes and develop their ability in selecting appropriate reading strategies through instruction.

Zhang (2008) conducted another study to investigate EFL college student's metacognitive knowledge of reading strategies in an acquisition-poor environment in China. He suggested that the available studies on Chinese EFL readers have not adequately addressed the issue of metacognitive reading strategies and their English reading proficiency. Therefore, he tried to see the relationships between types of metacognitive knowledge of reading strategy use and language proficiency levels. Ten EFL university students were selected from a sample of 312 participants in China. Semi-structured interviews, mainly in Chinese were used under the framework of Flavell's (1987) metacognitive strategy model to elicit students' metacognitive knowledge. The interviews were recorded and transcribed and three categories of metacognition were defined: 1) person, 2) task, and 3) strategic knowledge. The findings showed that Chinese students' metacognitive knowledge of reading strategies closely resembles their English proficiency and L2 reading ability interacted with L2 proficiency level. That is, those who achieved high scores on metacognitive knowledge showed a clearer awareness of strategy use. And those who scored lower didn't realize that they needed to adopt different reading strategies to solve certain problems in reading. The findings of this study suggest the need for teaching EFL Chinese learners English reading strategies.

Kong (2006) investigated the connection between L1 and L2 reading through think aloud and interview methods. This study aimed to explore the differences between Chinese good and

poor readers in their strategy use in Hong Kong. Eight 7th grade students were selected, four good readers and four poor readers, and they performed a think-aloud task and an interview throughout the study. The findings of this study indicated that Chinese good readers used more strategies and had better ability and knowledge of strategy use than did poor readers. In addition to the cognitive deficiencies, poor readers were also found to have poorer intrinsic motivation than do good readers. The combined problems of poor reading ability and motivation made them reluctant to process the text at a deeper level and they gave up easily when they encountered reading difficulties.

Another study carried out by Abbott (2006) investigated whether top-down or bottom-up reading strategies favor in certain cultural or linguistic groups. The results of verbal report data were collected from Arabic- and Mandarin-speaking English as second language (ESL) learners to identify the reading strategies involved in performing thirty-two reading questions. Then a confirmatory approach to differential item functioning was used to determine whether bottom-up and top-down items functioned differentially for equal-ability Arabic and Mandarin ESL learners. Results revealed systematic group performance differences in four bottom-up and three top-down strategy categories. Items involving breaking a word into smaller parts, scanning, paraphrasing, and matching were favored by Mandarin speakers, whereas items involving skimming, connecting, and inferring were favored by Arabic speakers.

Little experimental studies about reading strategies of Chinese speakers can be found for review. One study, conducted by Chen (1995), explored the effect of previewing and providing background knowledge on Taiwanese college students' reading comprehension in American short stories. Approximately 240 college freshmen were randomly assigned to four treatment groups and read two short stories. Before reading each story, one group listened to a 200-word

preview, a second group listened to background knowledge, and a third group listened to both the preview and the background knowledge presentation. The fourth group read each story without any assistance. The results on short-answer questions and multiple choice posttests showed strong positive effects of the previewing and combined strategies treatments and weaker positive effects of the background knowledge treatment. The findings of this study are in line with the previous study as they both suggest that previewing and providing readers with background knowledge of a reading text can increase their reading comprehension.

Remaining Gaps in Knowledge

From the previous literature review, there has been a heavy reliance on L1 research to L2 reading research, with an insufficient number of EFL reading strategy training studies, especially with regard to learner's metacognition. In addition, according to a meta-analysis conducted by Taylor, Steven, and Asher (2006), the effects of reading strategies training on L2 reading comprehension showed that there is no statistically significant difference between training that did and did not use metacognitive reading strategies in L2 reading comprehension results. In other words, the results of the experimental studies on the reading strategy training are not conclusive. As suggested by Carrell et al. (1998), strategy training which focused on learner metacognitive development is more effective than other types of training. Also, recent research comparing the effectiveness of cognitive and metacognitive strategy training shows that explicit instruction on cognitive strategies yields small, short-term improvements in reading performance, whereas training on metacognitive strategies results in more stable, long-term comprehension gains (cite in Koda, 2005, Carrell, 1998; Chamot, 2004, 2005; Cohen, 2003; Tang & Moore, 1992; Zhicheng, 1992). While previous research as reviewed here has helped to shed light on various issues related to EFL reading strategy training and research, more experimental studies regarding metacongitive reading strategy are needed in this area of research. Moreover, not much

research has focus on the possible impact of reading strategy training on EFL students' reading motivation. Based on the expectancy-value theory proposed by Day and Bamford (1998, cited in Mori, 2002), metacognitive reading strategy instruction involving reciprocal teaching method which has the potential to inspire EFL students' motivation and improve their reading comprehension. If EFL students feel the ease in English reading, then it would motivate them to get involved and read more on a regular basis. And if EFL students are reading more, then their reading achievement and language proficiency level can be expected.

In conclusion, as discussed in the previous section, though much is known about how good and poor readers do in the field of second language reading or foreign language reading, not much is known about the effect of reading strategy training on EFL students' reading comprehension and reading motivation, especially with the adolescent population. It is for these two reasons that the current study was planned to undertake.

CHAPTER THREE
METHODOLOGY

Purpose of the Study

The purpose of this study was to examine the effect of metacognitive reading strategies instruction (MRSI hereafter) on secondary EFL students' reading comprehension, reading strategies awareness, and motivation to English reading. Meanwhile, secondary EFL students' English past reading experience and their reaction to this kind of intervention were also part of this study's interest. The questions of interest guiding this study were: 1) what are the effects of metacognitive reading strategy instruction (MRSI, hereafter) on secondary EFL students' reading comprehension, reading strategy awareness, and reading motivation? 2) what factors contribute to EFL students reading behavior? 3) in what ways did the integration of MRSI in EFL class change the participants?

In this study, an experimental explanatory study using a mixed methods approach was conducted for data collection and to quantitatively and qualitatively examine the effect of MRSI on EFL students' reading experience by integrating MRSI into English class in a urban public high school of southern Taiwan. A sequential mixed method approach was used to better understand the whole impact of MRSI by first quantitatively conducts the experiment and later qualitatively explain the real life context in which is occurred (Ying, 2003). It is my intention to not only establish the pre and post SORS and ERMQ measures but also examine and present observations of EFL students and their instructor behaviors in the reading program. The sequential method enables me to conduct quantitative data first and follow-up qualitative interview and later integrate the information when interpreting the overall results (Creswell, 2003). The preliminary assumption was that MRSI would help improve secondary EFL students' reading comprehension, reading strategy awareness, and reading motivation.

MRSI is the central issue for this study because of its previous success reported in the literature from multiple studies in the field of the L1 and L2 reading instruction. Even though little research regarding EFL students' response to MRSI was available at the time of planning and upon completion of this study, the purpose of the study was not to compare the effectiveness of MRSI with other types of EFL reading instruction. Instead, the focus of this study is to explore EFL students' reading problems and why it is necessary for MRSI to be incorporated into regular English reading instruction.

Moreover, qualitative data were collected after the experiment to further explore the effectiveness of this metacognitive reading strategies instruction. Based on a comprehensive literature review in this area, there is a common agreement that explicit reading strategy instruction does improve reading comprehension of native speakers and second or foreign language readers (Block, 1986; Brown and Palincsar, 1985; Carrell et al., 1998). However, insufficient experimental research has been done to investigate the effects of metacognitive reading strategies on EFL/ESL students' reading strategies awareness, motivation to English reading, reading comprehension, and even fewer studies have examined its effects on adolescent EFL language learners, a population beyond Piaget's Formal Operations stage (11 or 12 years old to adult) that are capable of thinking logically and abstractly. For that reason, it is assumed that, metacognitive reading strategies instruction, a training focuses on consciousness-raising in reading process, is integrated into a regular English class in an EFL context can produce more successful comprehension in English as a foreign language and help EFL learners become independent and lifelong readers. This chapter describes the methods and procedures used in conducting the study which includes (1) rationale for the research design, (2) research questions,

(3) site and participants, (4) materials, (5) variables, (6) data collection procedures, and (7) statistical and descript analyses used in analyzing the data.

Rationale for a Mixed-Method Design

When planning this study for the first time, I set out to employ only quantitative method. However, it was not until I read the participants' several comments in their journals that I realized the unexpected phenomenon that most EFL secondary students have been through were worthy of exploration through qualitative methods. The qualitative findings were able to play more than just a complementary role in explaining and elucidating the quantitative results. For instance, Linlof and Taylor (1998) said that qualitative data, interview data in particular, are often used to validate test hypothesis in the field. For that reason, I decided to adjust the research method by changing from purely quantitative design to a mixed-method design. The rationale lies in that, according to Seliger and Shohamy (1989), the complexity of L2 acquisition makes it almost impossible to investigate L2 learning from a single perspective. For that reason, it has been suggested that researchers need to draw on multi-disciplinary knowledge to provide insights into the phenomena of L2 teaching and learning in order to consider appropriate methods and tools to explore different perspectives of L2 acquisition. Therefore, this study employs a mixed-method design of integrating both approaches-quantitative and qualitative research methods, which complement each other to provide a much more detailed and comprehensive picture of which is being explored. The strongest advantage of quantitative methods is its ability to obtain results that generalize to the population. However, quantitative can be limited as they tend to measure a limited number of outcomes and thus specific issues aren't able to be probed more deeply (Dörnyei, 2003). For these reasons, it is suggested that researchers apply qualitative methods to capture what statistical measures may not able to sufficiently explain, such as the reason of why and how some students succeed or fail in their learning (Wisker, 2001).

In the current study, I followed what Creswell (2003) calls a "sequential explanatory model," a type of mixed-method design in which quantitative data collection would be undertaken prior to qualitative data collection. In other words, the priority of this study was placed on the quantitative data (e.g., the reading achievement test and two questionnaires given to the whole sample), and the qualitative data (e.g., group interviews conducted with a subsample and classroom observations) were meant to explain and elucidate the quantitative data, thus deepening the understanding and interpretation of the results. An example of Creswell's (2008) sequential explanatory model is presented in the following Figure 3-1.

Figure 3-1. Mixed-method Research Process

Research Questions

For this study, the following research questions were addressed:

1. Does metacognitive reading strategy training affect high school EFL students' metacognitive knowledge with respect to their perceptions about reading and motivation to read English materials?

2. Does metacognitive reading strategy training enhance high school EFL students' reading comprehension?

3. Does the effectiveness of metacognitive strategy training depend on previous level of general English language competence?

4. What are the factors contributing to EFL high school students' reading experiences and reading attitudes?

5. In what way can the features of metacognitive reading strategy instruction help current EFL English reading instruction?

Subjects

Subjects Selection

The participants in this study were 118 11th grade students in a public high school located in Kaohsiung city, which is in southern Taiwan. The participants were selected randomly from a pool of approximately 400 students in 11th grade in that school. Among these students, sixty-six were male and fifty-two were female aged from 15-17. This high school was selected for this study based on the following criteria. First, this school is neither in the top 30%, nor in the bottom 30%, according to Joint High School Entrance Examination scores of 2007. For this reason, the student population is more reflective of the general population. Second, this high school follows the general curriculum standards mandated by the Ministry of Education (MOE) in Taiwan and the school is officially recognized by the MOE. Third, the students admitted into this high school are required to take the national standardized Basic Competence Test (BCTEST) and have to meet the admission standards. In that sense, the students of this high school generally had at least low-to-intermediate English language proficiency level. Furthermore, entering this high school depends on students' test scores despite of their socio-economic backgrounds. The subjects' native language is Mandarin and all the subjects have received approximately 8 years of formal English instruction since grade 3. All the students study English as a mandatory subject of five class hours (50 minutes) per week. Participants' background information was collected via the Personal Data Questionnaire (see Appendix A).

Rationale for determining sample size

Gall et al. (2003) suggested that it is important for a research to determine an appropriate sample size in order to detect the effect in an experiment. Besides, Olejnik (1984) states that

there are four factors commonly used to determine sample size: significant level, statistical power, analysis procedure, and effect size. Therefore, significance level alpha (α) in this study is set at 0.05 with two tails while the statistical power is .80, which is considered as a desirable standard power. Based on the effect size and power of past research to estimate the size of effect (See Table 3-1), I determined the sample size of this study by using G*Power[1] (Faul, Erdfelder, Lang, & Buchner, 2007), a general program used for conducting sample size, a priori and post hoc power analysis.

In Table 3-1, both Raymond's (1993) and Cordero-Ponce's (2000) studies have very small effect sizes (0.067 and 0.102, correspondingly) and that would require a very large sample size to replicate. On the other hand, Carrell (1985) and Carrel, Phrais, and Liberto (1989) have large effect sizes (0.353 and 0.207 correspondingly) that would require a small sample size. In this study, I used Song's (1998) study as the basis for sample calculation because it had a moderate effect size (0.32) which would require a moderate sample size.

In other words, I use estimated effect size to calculate how many participants I need to detect the effect and to achieve the desired level of power. Table 3-2 shows the estimated effect size as well as sample size estimated for a power level of 0.8 in Song's (1998) study.

From Table 3-2, Song's study had an effect size of 0.32 with a sample size of 50 which led the study to have a power level of approximately 0.49. For that reason and from G*Power program, I determined that at least a minimum of 45 subjects per group could allow me to detect a statistically significant main effect of metacognitive reading strategies instruction (MRSI). In other words, at least 90 subjects should be included in this study to lead to the power level of 80.

[1] *Source: Faul, F., Erdfelder, E., Lang, A.-G., & Buchner, A. (2007). G*Power 3: A flexible statistical power analysis for the social, behavioral, and biomedical sciences. Behavior Research Methods, 39, 175-191.*

Table 3-1. Power and Effect size calculated from previous experimental studies

Research Topic	N, Mean, SD, df, and F test	Effect Size
Carrell, P.L. (1985) Facilitating ESL reading by teaching text structure, *TESOL Quarterly*, 19, 727-757.	N=25 (Exp=14; Con=11) df = 1 F (1,23)=14.63 5 hours training in 5 days	Both Exp and Con had Pre- and post testing and Exp also has second post-test 3 weeks later. Omega square = 0.353 One-Way ANOVA
Carrell, Pharis, & Liberto (1989) Metacognitive strategy training for ESL reading, *TESOL quarterly, 23, 647-678.*	N=26 (Exp1=9 ; Exp2=9; Con1=3; Con2=5) F (2, 20)= 4.40 main effect on treatment on open-end posttest measure, F (1, 20)= 0.31main effect on learner style on open-end posttest measure F (2, 20) = 3.99 interaction b/w treatment and learning style 4 days training	Both Exp and Con had Pre- and post testing with 9 days interval. →Omega square = 0.207 →Omega square = 0.011 →Omega square = 0.234 2 way ANOVA
Raymond, P.M.(1993), The effect of structure training on the recall of expository prose for university students reading as a second language, *Modern Language Journal, 77, 445-458.*	N=43 (Exp=21; Con=22) df=1 F (1, 41)= 4.10 significant 5 hours training in two weeks	Both Exp and Con had Pre- and post Omega square = 0.067 ANCOVA (the correlation b/w pre and post was 0.58)
Song, M. (1998), Teaching reading strategies in an ongoing EFL university reading classroom, *Asian Journal of English Language teaching, 8, 41-54.*	N=50 (one group) F=24.60, df=1, p=.0001 significant on the effect of training F=4.53, df=2, p=0.015 significant on the interaction of training and language level 42 hours training in 14 weeks	Pretest and post test 2-way ANOVA →Omega square = 0.32 → Omega square = 0.124
Cordero-Ponce, W.L.(2000) Summarization instruction on foreign language comprehension, *Reading research and instruction, 39(4), 329-350*	N=30 (Exp=15; Con=15) df =1 F (1, 28)=4.44 2 days training	Both Exp and Con had Pre- and post and Exp had 3 week delay posttest One-way ANOVA Omega square = 0.102

Table 3-2. Sample size estimation for a power level of 0.8 with Song's (1998) study with estimated effect size.

Effect	*Effect Size (Omega square)*	Total sample size
Main effect	0.32	80
Interaction effect	0.124	130

Table 3-3. Power level and sample size with an effect of 0.32

Effect Size	*Sample size*	Power
0.32	51	0.49
0.32	54	0.50
0.32	81	0.70
0.32	99	0.80

Classification of English reading proficiency

In order to compare differential effects of metacognitive reading strategies on different English reading proficiency levels, the subjects in this study were divided into three reading levels (high scorers, intermediate scorers, and low scorers) according to their pretest scores on the GEPT test. Participants who scored 60 or below were designated or placed in the low-scorer group (25.4 % of the participants), participants whose scores fell in the range of 60-70 were designated as intermediate-scorer group (42.4 % of the participants), and those who scored above 70 were designated as high-scorer group (32.2 % of the participants).

Table 3-4. Participants' reading proficiency levels

Group	N	Mean	SD
High scorers	30	85.83	6.92
Intermediate scorers	52	65.19	5.045
Low scorers	36	43	9.879

As shown in Table 3-4, the mean score of the high-scorers was higher by 20.64 points than those intermediate-scorers, and the mean score of intermediate-scorers was higher by 22.19 points than that of low-scorers.

Materials

Textbooks

All students participating in the research project used the same textbook required for all 11th graders. The textbook is a collection of short stories or articles compiled from different

resources by Taiwanese authors. Each lesson is supplemented with short reading comprehension questions (largely literal) and rather extensive vocabulary list containing L1 glosses and explanations, grammar highlights, and sentence patterns and drill activities. The textbook is best described as a basal reader and is used exclusively for intensive in-class reading exercise and vocabulary as well as grammar learning. The last three lessons in the textbooks, which are slightly above the students' current grade level and are not taught in a normal school semester due to the time constraint, were selected to use in this study. In addition, similar grade level reading materials published by other textbook publishers were distributed to all the subject as outside class practice or take home assignments. Reading materials were the same regardless of the treatment or the comparison group.

Reading strategy booklet

A reading strategy booklet (Appendix D for the example) was given to each subject in the treatment group and all the strategies listed inside were explained and modeled by the experimenter and practiced by the subjects in the treatment group throughout the experiment. They kept this booklet for future reference and were expected to familiarize themselves with all of the strategies listed in the booklet.

Reading strategy journal

All of the subjects in the experimental group were required to keep a *Reading Strategy Journal* (See Appendix D for the example) while inside and outside of the class to record their reading strategy use during English reading. This journal lists specific questions to facilitate and guide them on how to record their reading experience and what strategies they use during the reading. The subjects were encouraged to use whatever language they were comfortable with. This idea is borrowed from Anderson's recommendation (2002), a way of developing students' metacognition in their reading process and is designed to facilitate EFL students' reading

strategy reflection. Developing metacognition during the reading process is important since L2 researchers have suggested that being exposed to reading strategies may not ensure success in language learning (Skehan, 1989), especially if the learners do not metacognitively connect their strategy knowledge and language use (Vann and Abraham, 1990). Thus, one potentially effective way of encouraging EFL high school students to aware and make a connection between reading strategy knowledge and reading strategy usage is to have them to reflect on their own experiences while English reading, and hopefully this reflection process will lead them to take more control over their own English reading and become independent readers.

Measurements

The measurements used to collect quantitative data for the dependent variables include the reading section of the *General English Proficiency Test* (GEPT, hereafter), the *English Reading Motivation Questionnaire* (ERMQ, hereafter), and the *Survey of Reading Strategy Questionnaire* (SORS, hereafter). All three measurements were collected before and after the treatment.

Reading comprehension test in the *General English Proficiency Test* (GEPT)

To obtain a measure of the students' baseline knowledge in their English reading competency, the reading section in *General English Proficiency Test* (GEPT) was administered to each participant prior to the beginning of the study. In 1990, the Ministry of Education (MOE) in Taiwan announced the need for the country to develop a reliable and standardized test to evaluate the English proficiency of students and other populations. A quasi-official institution named the Language Training and Testing Center (LTTC), which was certified for administering TOEFL and other language tests in Taiwan, was appointed to design and administer the *General English Proficiency Test* (GEPT for short and hereafter). According to LTTC (2003), the GEPT focuses on its emphasis on four language skills with 30% of listening skill, 35% of reading skill,

18% of speaking skill, and 17% of writing skill. Reading skill has the highest percentage among these skills. The test itself is a criterion-referenced test and has the following given levels: a) the beginning level, b) the intermediate level, c) the high intermediate level, d) the advanced level, and e) the superior level. According to the given levels, students who pass the GEPT beginning level have the English ability of understanding basic conversations about time and place, reading simple instruction on a daily basis, and writing simple sentences. Students who pass the GEPT intermediate level have the English ability of understanding general conversations, such as public announcements and weather reports, and can talk to English native speakers in simple English. They are also expected to reading short stories, private letters, and fliers, and can deal with their career needs in the use of English. For students in the high intermediate or low advance level, with the equivalent scores of 550 on the TOEFL, it is not a problem for them to understand English public speeches and broadcast news report. In addition, they are capable of reading English documents, meeting records, and business reports, expressing their viewpoints freely in English and conducting business presentations in English are also expected. Major universities in Taiwan have required students to pass the intermediate level as one of the standards for admission, and the high intermediate level as a requirement for graduation. The GEPT as a single standardized English proficiency test endorsed by the MOE in Taiwan has gained credibility and attention, and further guided the English instruction at schools at all levels. The reliability of GEPT reading section is 0.72 with N=100 (LLTC in Taiwan, 2003).

In this study, five reading passages taken from intermediate level of GEPT preparation books were chosen (Appendix H) and examined by the experimenter to establish the content validity of the reading test. Then the test was administered to all the subjects prior to the experiment and at the end of the experiment.

The *Survey of Reading Strategies* (SORS)

This is a questionnaire used to test students' metacognitive reading strategies awareness. The *Survey of Reading Strategies*[2] (SORS) is adapted by Mokhtari and Sheorey (2002) and based on Mokhtari and Reichard's (2002) *Metacognitive-Awareness of Reading Strategies Inventory*[1] (MARSI), which was first developed for native speakers in the US. According to Mokhtari and Sheorey (2002), the SORS is intended to "measure the type and frequency of reading strategies that adolescent and adult ESL students perceive they use while reading academic materials in English." (p.4). The SORS was developed and pilot-tested by Mokhtari and Sheorey (2002) with 147 ESL students in the US and found consistent results relative to the instrument's overall reliability (with Cronbach's alpha = 0.89). This indicated a reasonable level of consistency in measuring awareness and perceived use of reading strategies among ESL students. In total, there are 30 items in the SORS with a Likert scale to measure three broad categories of reading strategies: a) global reading strategies (13 items), b) problem solving strategies (8 items), and c) support strategies (9 items). According to Mokhtari and Sheorey (2002), global reading strategies (GLOB for short) are defined as "those intentional, carefully planned techniques by which learners monitor or manage their reading, such as having a purpose in mind, previewing the test as to its length and organization, or using typographical aids and tables and figures." (p.4). Problem solving strategies (PROB for short) are classified as "the actions and procedures that readers used when problems develop in understanding textual information; examples includes adjusting one's speed of reading when the materials becomes difficult or easy, guessing the meaning of unknown words, and rereading the text to improve

[2] Mokhtari, K. & Sheorey, R. (2002). Measuring ESL Students' Awareness of Reading Strategies. *Journal of Developmental Education* 25, no. 3, 2-10.

[1] Mokhtari, K., & Reichard, C. A. (2002). Assessing students' metacognitive awareness of reading strategies. *Journal of Educational Psychology*, 94, 249-259.

comprehension." (p.4). Support strategies (SUP for short) are classified as "basic support mechanisms intended to aid the reader in comprehending the text such as using a dictionary, taking notes, underlining, or highlighting textual information." (p.4). The SORS used in this study was translated into Chinese and each statement in the SORS has both English and Chinese versions (see Appendix F). Subjects in this study filled out this questionnaire before and after the training in order to measure the possible differences or changes in their perceived strategy use. Reliability of the SORS was analyzed and tested its internal consistency as measured by Cronbach's alpha and reported in Chapter four of this study.

The *English Reading Motivation Questionnaire* (ERMQ)

The *English Reading Motivation Questionnaire*[4] (ERMQ) was developed by Mori (2002), with the intention to measure EFL learners' English reading motivation. In order to investigate EFL Japanese students' reading motivation, Moris adapted ERMQ from Wigfield and Guthrie's (1995, 1997) *Motivation to Reading Questionnaires* (MRQ) to better fit the environment of English as a foreign language setting. According to Moris' study, foreign language reading motivation closely resembles more general forms of motivation as laid out in expectancy-value theory as proposed by Day and Bamford (1998, cited in Mori, 2002). Expectancy-value theory of reading motivation model consists of four reading components which may influence language learners' decision to read in a second or foreign language. These four reading components include reading materials, reading ability, reading attitudes, and sociocultural environment. This is a 30-items 4-point Likert scale questionnaire. Many of the questionnaire items were written referring to the theory of reading motivation proposed by Wigfield and Guthrie (1995, 1997). Although Wigfield and Guthrie identified and included 11 components in their MRQ, three

[4] Mori, S. (2002). Redefining motivation to read in a foreign language. *Reading in a Foreign Language,* 14(2). Retrieved October 30, 2002, from http://njlrc.hawaii.edu/rfl/October2002/mori/mori.html

components, competition in reading, reading recognition, and social reasons for reading were removed by Mori as these didn't seem to relevant to the participants in a foreign language context. This irrelevance is due to the fact that Wigfield and Guthrie's motivational scales were specifically developed for primary school students learning to read in their L1 and thus some items appearing in the MRQ were not considered directly applicable to EFL students based on the results of Mori's studies (2000, 2001, and 2002). The internal consistency estimate of reliability for this questionnaire was .93 (N=447) which demonstrated that the questionnaire has high reliability value. Same as the SORS in this study, the ERMQ was translated into Chinese and each statement has both English and Chinese versions (see Appendix G).

There are four subscales in the ERMQ: a) intrinsic value of reading, b) extrinsic utility value of reading, c) importance of reading, and d) reading efficacy. The response format was 1 stands for "very disagree', 2 stands for "disagree", 3 stands for "agree", and 4 stands for "very agree". Intrinsic value of reading refers to reading curiosity, reading involvement, reading avoidance, and reading challenge. This subscale can reveal degrees of students' interest in reading in English or their perception of enjoyment involved in reading in English. Extrinsic utility value of reading refers to motivation to engage in a task in order to obtain external rewards such as good grades. Importance of reading refers to a student's perceived usefulness of reading. And reading efficacy refers to an individual's sense of efficacy and beliefs about their ability in terms of reading in English. The ERMQ was administered two times in the study. The pre-ERMQ test was conducted at the beginning of the study, while the post-ERMQ was conducted after the implementation of metacognitive reading strategy training. The purpose was to explore probable changes in the participants' motivation toward English reading. In terms of

reliability of ERMQ, data collected from pretreatment and after treatment were analyzed and tested its internal consistency as measured by Cronbach's alpha and reported in Chapter four.

Establishing Translation Authenticity for SORS and ERMQ

I translated the SORS and the ERMQ into Chinese, the subjects' native language (See Appendix F and G) in order to ensure the subjects' understanding of the items on the questionnaires. The translations of these two questionnaires were confirmed by several bilinguals at UF. To confirm that the Chinese version of the questionnaires elicited the same information as the English version, I sent both the initial English and Chinese versions separately to native speakers of Mandarin who are pursuing doctoral degrees in the College of Education at UF (n=2), and Taiwanese professors who graduated from universities in the US (n=2). They were asked to complete each questionnaire as if they were the participants in the study. The two administrations were two week apart and the period was short so that the verification group didn't have a long period of time between the two administrations which might result in changes in their perceptions about the questionnaire. However, the period was not so short that it would allow them to remember their responses to the previous version of the questionnaire. Responses to the two versions of the questionnaires were analyzed to check their compatibility with each other. The results came out consistent and thus satisfied.

Research Design

The design of the study has been structured to adapt strengths of previous research and attempt to overcome weakness believed to be important in extant reading research. First, the composition of metacognitive reading strategies instruction extend the work of Brown and Palincsar's (1984) reciprocal teaching along with the use of *Reading Strategy Journals*, consciousness raising, and self-reflection on the reading task. Second, most of the previous reading strategy training studies either use small sample size, quasi-experiment design, or

without comparison group, this study used a true experimental equivalence control – group pre/post test design as shown in the following table. In addition, in order to eliminate all the threats to internal validity, this study used a random assignment to equalize the comparison groups. The steps to implement this study were as the following Table 3-5.

Table 3-5. Steps for the implementation of the study

Screening (pretreatment Aug,31st, 2007)	Group	Pre-test	Treatment	Posttest (Nov, 17th, 2007)	Post treatment
GEPT reading section	A Experimental	O1	X1 MRSI	O2	Interviews with 24 students
GEPT reading section	B Control	O1	X2 Normal Class	O2	

The treatments included metacognitive reading strategy instruction (X1) and the teacher's normal routine of instruction (X2). The metacognitive reading strategy instruction (MRSI hereafter) served as the experimental treatment (X1), while the teacher's normal routine of instruction served as the "comparison" treatment (X2). The pretest (O1) consists of the SORS questionnaire, the ERMQ questionnaire, and reading comprehension test. These assessments were conducted during the week prior to initiation of the metacognitive reading strategy instruction during the fall semester of 2007. The experimental group (Group A) received metacognitive reading strategy instruction while the control group (Group B) followed a traditional English reading instruction routine without metacognitive reading awareness training. The content in each class is equivalent and was delivered by the two instructors. In addition, the measurements were the same for each group. The posttest (O2) occurred at the end of the study, 10 weeks later. It consists of the same measurements as O1.

Prior to the administration of the experiment, I obtained permission from the school (See Appendix J), the parents (parents consent form See Appendix B), and the subjects themselves

(See Appendix A). The data collection took place during the fall semester in the year of 2007 starting in the last of August and ending in November 13th. In this study, there were 59 subjects in the control group and 59 subjects in the experimental group. All of the subjects were informed that they came to "*English Reading*" class, which was in addition to their regular English classes. They were called out for the treatment during the recession time from 12:30 pm to 1:20 pm on Monday and Wednesday for the experimental group, and Tuesday and Thursday for the control group, respectively. The duration of the experiment was two lessons per week for each group over ten weeks. As previously stated, the subjects were randomly selected from 11th grade with approximately 400 students and randomly assigned to each group. For the experimental group, subjects were explicitly taught English reading strategies as listed on the *Reading Strategy Booklet* (see Appendix D) and they were required to keep a "*Reading Strategy Journal*" (see Appendix D) to self-reflect on their reading process, reading experience, and monitor their English reading strategies usage. For the control group, on the contrast, they received all of the same reading materials as the experimental group and they were also taught English reading. The only difference between these two groups lies in the level of consciousness-raising in terms of reading strategies usage, which was stressed in experimental group.

Instructors

In order to eliminate the pitfalls of an experimental study, two instructors were included in this study. As Barber (1973) pointed out, "research studies would be less biased if the investigator who plans the study and who has an investment in the outcome is not the same person who has responsibility for the data analysis." (p.400). For that reason, one English teacher from that high school was recruited to participate in the study due to her interest and willingness to try a different approach to English teaching and thus she was the instructor for the experimental group. This teacher, Ms. Lin, holds a bachelor's degree in English education and a

master's degree in American and English literature from Kaohsiung Normal University in Taiwan. She has been teaching English in the high school for over 12 years including 2 years in middle school. Based on her experience and backgrounds, it was determined that she possesses sufficient knowledge and ability to teach reading strategies to the experimental group. The control group was taught by the researcher.

Treatment delivery Accountability

In order to ensure that treatment was delivered appropriately and accurately to both groups, both instructors sat in each other's class and discussed before and after the classes. I prepared lesson plans and handouts outlining how to implement metacognitive reading strategy instruction for her.

Threats to the study

According to Seliger and Shohamy (1989), the influence of extraneous variables was less powerful in EFL than in ESL settings, due to the amount of language input. For that reason, the design of this study had eliminated the possibility of any variables to the lowest degree. Moreover, as Gall et al. (2003) stated that the main threat to internal validity is the possibility of group differences on posttests due to preexisting differences in the groups, rather than the effects of the treatment. Therefore, in order to control for this threat, they recommend analyzing covariance. In order to control for preexisting student conditions, pretest of reading test in GEPT was treated as covariates throughout ANCOVA procedure.

Procedure

The steps to implement this study are as following:

1. 118 students were randomly selected and assigned to two groups – one experimental group (59) and one control group (59).
2. Before the treatment, all subject were administered the SORS questionnaire, ERMQ questionnaire, and reading comprehension test.

3. The experimental group received metacognitive reading strategy awareness training along with reading strategy journal keeping. Reading strategy instruction included teacher modeling (what to apply, how to apply, and why to apply) and explicit explanation of the strategies, and scaffolding of student learning the strategies. The subjects practice the strategy taught, guided practice using the strategy with gradual release of responsibility, and independent use of the strategy.

4. The core of the training consisted of practicing basic reading strategies, such as 1) finding the main idea of a paragraph, recognizing topic sentences, distinguishing the main idea from supporting details; 2) clarifying, such as concentrating on key words and guessing their meaning from the context; 3) summarization, such as key people, key place, key information or key ideas; use semantic map to visualizing; 4) predicting, such as based on what is already known and how it related to what might happen next; and 5) questioning, such as what was the main idea, what was happening, what would you do if…?. In addition, the training also contained interactive group activities that invited the subjects to observe their own reading process and that of their peers, including observing and discussing the strategies they apply to understand. In order to encourage the students to apply the strategies presented during the training in their independent reading, after each lesson, the subjects were given reading assignments to work on at home and record their reading in the reading strategy journal.

5. The control group followed the normal English teaching routine on which grammar drills, vocabulary, and translation were stressed. As the subjects all came out for "English reading" class, the control group were also taught reading skills used for comprehension but group sharing, teacher modeling, and reading strategy reflection were not emphasized.

6. The experiment lasted for ten weeks (roughly two and half-months) with Monday and Wednesday for the experimental group and Tuesday and Thursday for the control group. All subjects still have their regular English classes (five hours per week) with their regular English teachers.

7. After the treatment, all subjects took the posttest with the same questionnaires (the SORS and the ERMQ) and the reading comprehension test.

8. In order to attain qualitative data from the EFL students' overall reaction toward this metacognitive reading strategy instruction, 24 students from the experimental group were called out for group interview in the nap time between 12:30 to 13:10 pm. Interview questions mainly focuses on their previous reading experience and how do they feel about this English reading class, that is, the core instruction of this study.

Variables for Quantitative Data

The following section lists and describes the meaning of several variables used for data analysis.

Independent variables

In this study, the independent variables (nominal variables) are the teaching methods – the metacognitive reading strategy instruction (MRSI) and the participants' English reading proficiency levels. The participants' pre-GEPT scores were used to classify their English reading competence (into high, intermediate, and low proficiency groups) and as a covariate in statistical analysis.

Dependent variables:

The dependent variables (continuous variables) used in the study were (a) post-test of metacognitive reading strategy questionnaire; (2) post-test of reading comprehension test; and (3) posttest of English reading motivation.

All of the independent variables and dependent variables were used to test the hypotheses from H_{a1} to H_{a4} .

Quantitative Data Analysis

Overall, the independent variables in this study are metacognitive reading strategy instruction and subjects' reading proficiency levels as measured by pretest. The dependent variables in this study are the scores of the post- SORS, the post- ERMQ, and the post reading comprehension test scores. ANCOVA was used to test hypotheses from H_{01} to H_{04} with the pretest score as the covariate and the post score of the SORS, the ERMQ, and reading comprehension score as the dependent variables. ANCOVA was considered to be best for this analysis based on the following reasons. First, ANCOVA would adjust the post-test means on the basis of the pre-test means, and then compare these adjusted means to see if they differed significantly. Second, as Johnson (2001) stated, in experimental studies that use ANCOVA, causality can be inferred when significance occurs. For instance, the independent variable can be

said to significantly influence or affect the dependent variable in some, unless there are some uncontrolled extraneous variables. Third, the use of the pre-test reading comprehension score as a covariate also provides a more conservative statistical analysis. And at last, in order to see if it is appropriate to allow the inclusion of the covariate data, the correlation between the pre-test reading comprehension score and the post-test reading comprehension score was calculated in this study. All analysis was performed using SPSS statistic package for Window 12.0. Table 3-6 summarizes the measurements and data analysis for four research hypotheses.

Table 3-6. Overview of Research Hypothesis and Methodology

Research Hypothesis	Measurement	Data Analysis
H_{a1} Reading comprehension will be greater for high school students with metacognitive reading strategies training than those without metacognitive reading strategies training.	Pretest reading Comprehension and posttest of reading comprehension	ANCOVA
H_{a2} Motivation to reading English will be greater for high school students with metacognitive reading strategies training than those without metacognitive reading strategies training.	Pretest of ERMQ and posttest of ERMQ	ANCOVA
H_{a3} Perception about reading strategies will be greater for high school students with metacognitive reading strategies training than those without metacognitive reading strategies training.	Pretest of SORS and posttest of SORS	ANCOVA
H_{a4} The effect of metacognitive strategy training will be larger for students with lower language competence.	Pre and Posttest of reading comprehension, SORS and ERMQ	ANCOVA

Qualitative Data Collection

Participants in interview

Nunan (1992) points out that qualitative information is often crucial for the interpretation of quantitative data. For that reason, qualitative data was collected through face-to-face group interviews conducted by the research. 24 students participated in semi-structured open-ended interview (Patton, 1990, p. 284) conducted by the research on group of four basis in a casual and relaxed atmosphere. The interview questions (see Appendix I) were written out in advance

exactly the way they were to be asked during the interview and each group was asked essentially the same questions in the same order. According to Patton (1990), there are several advantages in favor of using open-ended interviews. For example, this approach can reduce the possibility of bias that results from having different interviews for different participants, including the problem of collecting more information from some people than from others. Meanwhile, asking the same questions of each participant can also ensure that data is complete for each person on the topics addressed in the interview. Moreover, the interview is highly focused so that interviewee time is carefully used. Therefore, this method is especially appropriate when the research wants to obtain the same information from each participant within a limited period of time. Finally, the data analysis also becomes easier because the researcher can locate each respondent's answer to a particular question rather quickly. However, the standardized open-ended interview is not without weaknesses. First of all, it does not allow the interviewer to pursue topics or issues that were not anticipated when the interview was written. Second, the researcher is not able to use different lines of questioning with different people based on their unique experiences. In other words, this approach does not take into account individual differences or situational changes (Ethrman, Leaver, Oxford, 2003). Therefore, to compensate for these weaknesses, I preserved some flexibility to ask probing questions whenever it was necessary to explore certain subjects in greater depth or to pursue new topics that were not included in the original interview instrument. Themes were determined and reported in a descriptive format.

Interview and data analysis

In order to understand in depth the students' experiences of the implementation of metacognitive reading strategy instruction in English reading class, a face-to-face standardized open-ended interview with the students was conducted as a further data collection method after

the experiment was completed. In conducting the interviews, I myself served as the interviewer. The language used in the interview was students' first language, Mandarin. The interviews were scheduled in their recession time from 12:30 pm to 1:10 pm and were conducted in the teachers' restroom beside the teacher's office. The consent of each participating student was obtained. The students came in groups of four and there were 24 students participating in the interview. In advance of each interview, I explained the purpose of the study and an interview question list was provided. Each interview was audio taped and transcribed into English for further analysis (Creswell, 1998). All names have been changed to protect the identity of the teacher and her students. Data were analyzed using a version of the ground theory approach, in which multiple themes emerged through repeated reading of the data with the intention to explain the advantages for the quantitative data.

Summary of Methodology

In summary, this chapter provided a detailed description of the methodology employed and the data collection in the present study adopted both quantitative and qualitative methods in order to explore EFL secondary participants' experience with the metacognitive reading strategy instruction. The rationale of choosing a mixed-method design was given. The quantitative methods used were one reading comprehension test and two questionnaires. These investigated the effect of metacognitive reading strategy instruction on EFL secondary students' English reading comprehension, reading strategies awareness, and English reading motivation. With respect to the qualitative data collection, the participants' reading strategy journals were collected and analyzed and the participating teacher as well as 24 participants were group interviewed regarding their experiences toward English reading. Participants were group interviewed regarding their previous reading experience and their experience toward this

experiment. The results and findings will be reported in Chapter four for quantitative finings and Chapter five for qualitative findings respectively.

CHAPTER FOUR
QUANTITATIVE RESULTS

Introduction

The purpose of this chapter is to provide a presentation of statistics used to examine the independent variables and dependent variables related to the null hypotheses. The independent variables in this study were metacognitive reading strategy instruction versus the regular English reading instruction. The difference between these two instructions lies in that the former one emphasizes the importance of student's autonomy in terms of their English reading process when reading comprehension breaks down and monitoring the effectiveness of their reading strategies uses. The dependent variables in this study were the post-English reading comprehension test, the post-*English Reading Motivation Questionnaire (ERMQ)*, and the post-*Survey of Reading Strategy (SORS)*.

In order to present the quantitative results of these analyses in a clear and coherent manner, the discussion of the statistical results are organized as the following order:

(1) Statistical techniques used in this study;

(2) The descriptive statistics of the sample in this study;

(3) The reliability of the SORS, the ERMQ, and the reading comprehension test in this study;

(4) The assumptions of ANCOVA is also addressed and examined;

(5) Results for null hypotheses H_{01} of this study;

(6) Results for null hypotheses H_{02} of this study;

(7) Results for null hypotheses H_{03} of this study;

(8) Results for null hypotheses H_{04} of this study;

Statistical Techniques

The purpose of this study was to examine the effects of metacognitive reading strategy instruction on EFL secondary students' English reading comprehension, English reading strategy awareness, and motivation to English reading by using an experimental design. Nonetheless, random assignment to the experimental and control groups may not guarantee perfect linguistic balancing groups; therefore, analysis of covariate (ANCOVA) was used to control for differences in reading comprehension measured prior to the treatment. Data pertaining to the independent and dependent variables were analyzed using the *Statistical Package for the Social Science* (SPSS) version. From hypotheses H_{01} through H_{04}, a series of ANCOVA examined the main effect of teaching approach (matacognitive reading strategy instruction), as well as interaction effect between English reading proficient levels and treatment. For hypothesis 1, ANCOVA was performed to determine if there was any significant difference on the post reading comprehension test when the covariate, GEPT score, was held constant. For hypothesis 2, ANCOVA was performed to determine if there was any significant difference on the post-*Survey of Reading Strategies* (SORS) when GEPT score was held constant. For hypothesis 3, ANCOVA was performed to determine if these was any significant difference on the post-*English reading motivation questionnaire (ERMQ)* when GEPT score was held constant. For hypothesis 4, ANCOVA was performed to determine if there was an interaction between reading proficiency levels and treatment on dependent variables.

Descriptive Statistics of Participants

Originally there were 59 students in each group (see Table 4-1). However, five subjects (case number 20, 25, 61, 65, and 118) failed to provide complete information on either post reading comprehension test or the two post questionnaires. In other words, the data set was 5

observations short. Therefore, these five cases were deleted based on "listwise deletion" (Allison, 2001) which omits cases that do not have data on all variables in the variable list of the analysis. In this data set, 5 subjects (4%) failed to provide completed information, leaving a total sample size of N= 113 subjects from the data were collected. The control group lost 2 subjects (N=56, 3%) while the experimental group lost 3 subjects (N=57, 5%). Based on the small percentage of missing data, it is decided that deletion of these 5 cases was appropriate. Summary of the sample size before and after the experiment were shown in Table 4-1.

Table 4-1. Sample size before and after the treatment

	N before experiment	N left for analysis
Experimental Group	59 (two incomplete data and one outlier)	56
Control Group	59 (two incomplete data and two outliers)	54
Total	118	110

Note: case number 20, 25, 61, 65, & 118 were deleted due to incompletion

Outliers' deletion

Furthermore, three outliers were detected in the data, case number 25 and 57 in the control group and case number 73 in the treatment group as presented in Table 4-2 below. The outlier was determined to be deleted based on their previous performance on high school entrance exam score in English, English midterm exam score, and GEPT score in reading section. If the subject's post-reading comprehension test was far below their previous English achievements such as entrance exam score, English mid-term exam score, and GEPT score, then his or her score on post reading comprehension test was considered as an outlier. This deletion resulted in unequal group sizes of n = 54 for the control group and n = 56 for the experimental group.

Table 4-2. Deleted outliers

Case #	Group	Gender	EESE	ETE	GEPT	Post-RC
25	0 (Control)	Male	67	50	59	10
57	0 (Control)	Male	49	80	65	10
73	1 (treatment)	Male	60	50	55	0

Note: C= control group; T=treatment group; EESE= high school entrance exam score in English; ETE=English mid-term exam; GEPT=general English Proficiency Test; PostRC=post reading comprehension test

Gender distribution

Of the 110 participants in the study, 61 (55.5 %) were male, and 49 (44.5%) were female (see Table 4-3). The control group had a lower percentage of male students (51.9%) than experimental group (58.9%), and a higher percentage of female students (48.1%) than experimental group (41.1%).

Table 4-3. Gender distribution in each group

	Control Group		Experimental Group		Total	
Gender	n	%	n	%	n	%
Male	28	51.9	33	58.9	61	55.5
Female	26	48.1	23	41.1	49	44.5
Total	54	100	56	100	110	100

English reading proficiency

The mean score of the GEPT for the total sample is 70.88 with standard deviation of 11.55. Based on this mean score, the criterion for determining the reading proficiency level is: mean score (70.88) +/- one standard deviation (11.55). Therefore, those who scored over 82 were classified as ranking 3 or high, the score fell between 60 and 82 were classified as ranking 2 or intermediate, while those scores fell below 59 were classified as 1 or low. Twenty-two students (20%) scored below 59, 67 students (60.9%) students scored between 60-82, and 21 students (19.1%) scored above 83. In the control group, 9 students (16.7%) score below 59, 33 students (61.1%) students scored within 60 to 82, and 12 students (22.2%) scored above 83. In the treatment group, 13 students (23.2%) scored below 59, 34 students (60.7%) students scored

between 60 and 82, and 9 students (16.1%) scored above 83. See Table 4-4 for English reading proficiency levels distribution.

Table 4-4. Subjects' GEPT level distribution

	Control Group		Experimental Group		Total	
GEPT score ranking	n	%	n	%	n	%
1 or low (below 59)	9	16.7	13	23.2	22	20
2 or intermediate (60-82)	33	61.1	34	60.7	67	60.9
3 or high (above 83)	12	22.2	9	16.1	21	19.1
Total	54	100	56	100	111	100

Note: GEPT = general English proficiency test

The pre-*Survey of Reading Strategies* (SORS)

Students' reading strategies awareness was assessed through their responses on the *Survey of Reading Strategies* (Mokhtari and Sheorey, 2002) before and after the treatment. As noted in Table 4-5, the mean score of pretest for the SORS for the entire sample was 3.32 with a standard deviation of 0.51. Overall, the participants' reading strategy awareness on the pre-test ranged from 1.41 to 4.13 with a mean score of 3.32. For the control group, overall students reading strategy awareness had a mean of 3.316 on the pre-test. For the experimental group, students' reading strategy awareness as measured by the SORS had a mean of 3.32 on the pre-test. Independent t-test t (108) = 0.5, $p > .05$ yielded non-significant mean difference between the experimental group and control group. This indicates that the two groups' reading strategies awareness were statistically similar before the treatment. In other words, both groups had similar reading strategy usage before the experiment. In responding to the frequency use of reading strategies, Mokhtari and Sheorey's (2002) outlined a scale range of 1-5:

High strategy use = 3.5 and above
Medium strategy use = 2.5 to 3.4
Low strategy use = 2.4 or below

Therefore, according to the results, the participants in this study had a mean (3.3) of overall reading strategy use on the 5-point Likert scale. In general, both groups were "medium" reading strategy users.

Table 4-5. Subjects' pre-SORS distribution

Score	Control Group		Experimental Group		Total	
SORS	n	%	n	%	n	%
2.5 or lower	6	11.1	3	5.4	9	8.2
2.5-3.4	24	44.4	30	53.6	54	49.1
3.5 or higher	24	44.4	23	41.1	47	42.7
Total	54	100	56	100	110	100

Note: SORS=the *Survey of Reading Strategies*

As there are three subtests in 30 reading strategies items in the SORS, it is also of interest to know which were the most frequently used and the least frequently reading strategy used by EFL secondary students before the treatment. The results are shown in the following Table 4-6.

As shown in the Table 4-6, the most interesting finding here is that EFL secondary students use note-taking, paraphrase, thinking and translate from their native language most of the time. All of these strategies fell at the high-use range. This finding reflected that the traditional English teaching method of Grammar Translation Approach is still dominant in Taiwan's most English classrooms and teacher-centered English language education. Likewise, I also identified four least frequently used reading strategies. All of these least frequently used strategies fell toward the bottom of low-use range. The least frequently used strategies are: critically thinking, questioning, and read aloud strategies. This finding was not much a surprise since EFL language learners still follows traditional rote memorization pattern, the entire education system does not really promote initiative-taking, critical thinking, self-direction, or self-regulation on the part of students in learning as a whole. Speaking ability is not valued in normal English education as well. For that reason, questioning, critical thinking and read aloud

reading strategies are appeared as the least used reading strategies among EFL high school students.

Table 4-6. The most and the least frequently used reading strategy from the pretest data

Strategy no.	Strategy	Mean	Strategy Category
The most frequently used reading strategy by EFL secondary students			
2	I take note while reading to help me understand what I read	4	Support reading strategy
18	I paraphrase (restate ideas in my own words) to better understand what I read	4	Support reading strategy
20	I use typographocial features like bold face and italics to identify key information	3.9	Global reading strategy
29	When reading, I translate from English into my native language (Chinese)	3.96	Supporting reading strategy
30	When reading , I think about information in both English and my mother tongue (Chinese)	3.96	Supporting reading strategy
The least frequently used reading strategy by EFL secondary students			
21	I critically analyze and evaluate the information presented in the text.	2.21	Global reading strategy
5	When text becomes difficult. I read aloud to help me understand what I read	2.11	Support reading strategy
6	I think about whether the content of the text fits my reading purpose	2.4	Global reading strategy
26	I ask myself questions I like to have answered in the text	1.94	Support reading strategy

Pre-*English Reading Motivation Questionnaire* (ERMQ)

Participants' English reading motivation was assessed through Mori's *English Reading Motivation Questionnaire* (2002). The mean score for the pre-ERMQ was 78.84 with standard deviation of 10.84. The score in the pre-ERMQ questionnaire range from 48 to 101. For the control group, EFL students' motivation to read in English had an overall mean score of 79.02 on the pre-test. For the experimental group, students' motivation to reading English had an overall mean score of 78.66. Even though control group has higher score than the experimental group, the independent t-test t (108) = 0.175, p >.05 yielded non-significant. Therefore, these two groups were statistically similar on ERMQ score before the treatment.

Table 4-7. Participants' pre-ERMQ distribution

Score	Control Group		Experimental Group		Total	
ERMQ	n	%	n	%	n	%
72 or lower	13	24.1	12	21.4	25	22.7
73-90	33	61.1	35	62.5	68	61.8
90 or higher	8	14.8	9	16.1	17	15.5
Total	54	100	56	100	110	100

Note: ERMQ=English Reading Motivation Questionnaire

There are four subtests in ERMQ questionnaire. Among thirty reading motivation items, it is also worthy of looking at the most agreed and the least agreed reading motivation answered by the participants in this study. Results are summarized in the following Table 4-8.

As shown in Table 4-8, it is interesting to find that most participants agree that English is really important in their future job or further education. However, most participants didn't have confidence in their English reading ability and they dislike long and challenged reading text and thus lack of intrinsic motivation to read English. In other words, the participants in this study all realize its importance in English reading and they seemed to be aware of their English reading problems. Qualitative data in chapter five will explain further in detail regarding the participants' English reading motivation.

Table 4-8. Participants' most and least agreement on pre-ERMQ questionnaire

The most agreed reading motivation by EFL secondary students			
no.	Statement	Mean	Statement Category
10	I would like to get a job that uses what I studied in English reading class.	3.3	Extrinsic reading motivation
3	Learning to read in English is important in that we need to cope with internationalization	3.6	Importance of English reading
18	Learning to read in English is important because it will be conductive to my general education	3.3	Importance of English reading
The most disagreed reading motivation answered by EFL secondary students			
22	I enjoy the challenge of difficult English passage	1.83	Intrinsic reading motivation
17	English reading is my best subject	1.9	Reading efficacy
8	Long and difficult English reading passages interest me	2.1	Intrinsic reading motivation
11	I am good at reading in English	2.02	Intrinsic reading motivation

Descriptive summary of pretest data

Descriptive summary of the whole sample data is listed in the following Table 4-9 and descriptive summary of each group is listed in the Table 4-10. All scores of GEPT test, the SORS pretest, and the ERMQ pretest were raw scores. As sample were random selected, independent-samples *t*-test were conducted to confirm any preexisting difference between these two groups in terms of their English reading proficiency level, reading strategies uses as measured by the *Survey of Reading Strategies (SORS)*, and their English reading motivation as measured by the *English Reading Motivation Questionnaire (ERMQ)*. The use of independent sample t-test requires the test of the homogeneity of variance; therefore, Levene's test was performed to test whether the assumption of homogeneity of variance was met. The results of Levene's tests were not significant at $p > .05$ indicating that the difference between variance is zero in each pretest (see Table 4-11 for Levene's test). In other words, the pretest had significantly equal variance in the experimental group and the control group. Consequently, the assumption of homogeneity of variance was met and the use of independent *t*-test is appropriate. Table 4-10 contains group means for categorical variables (e.g. number of subjects) as well as numeric variables (e.g. GEPT score; pre-SORS score, and pre- ERMQ score) for the treatment group and control group.

Results of independent t-test on three pretests were shown in the above Table 4-12. For GEPT test, t (108) = .368, p >.05, which was not significant; for pre-SORS test, t (108) = -.05, p > .05, which was not significant, and for pre-ERMQ test, t (108) = 0.175, p > .05, was not significant as well. Overall, although the mean score of GEPT and pre-SORS of the control group were slightly higher than the treatment group, the differences between these two groups were not significant. In summary, from the pretest data showed above, there is no significant difference among groups by their English reading proficiency, pre-SORS test, and pre- ERMQ

test. In other words, these two groups were similar in terms of their English reading proficiency level, their reading strategy uses, and their English reading motivation before the experiment was conducted.

Table 4-9. Descriptive summary of the pretest score of the sample as a whole

	N	**Mean**	**Sd.**
GEPT	110	70.88	11.55
Pre-SORS	110	3.3	0.51
Pre-ERMQ	110	78.8	10.68

Note: GEPT=general English proficiency test; pre-SORS=pretest score on Survey of Reading Strategies; pre-ERMQ=pretest score on English Reading Motivation Questionnaire.

Table 4-10. Descriptive summary of the pretest score on each group

	E or C	*N*	*Mean*	Sd.
GEPT	control	54	71.30	11.74
	experimental	56	70.48	11.44
Pre-SORS	control	54	3.316	0.517
	experimental	56	3.320	0.520
Pre-ERMQ	control	54	79.02	11.08
	experimental	56	78.66	10.37

Note: GEPT= general English proficiency test; pre-SORS=pretest score on Survey of Reading Strategies; pre-ERMQ=pretest score on English Reading Motivation Questionnaire; Sd.= standard deviation.

Table 4-11. Result of homogeneity of variance test between groups in terms of GEPT, pre-SORS, and pre-ERMQ

	Levene's Test for Equality of variance	
	F	Sig.
GEPT	.000	.933
Pre-SORS	.665	.417
Pre-ERMQ	1.152	.268

Note: GEPT= general English proficiency test; pre-SORS= pretest score on Survey of Reading Strategies; pre-ERMQ=pretest score on English Reading Motivation Questionnaire.

Table 4-12. Independent *t*-tests on difference between groups on GEPT, pre-SORS, and pre-ERMQ

	t	df	Sig. (2-tailed)	Mean difference
GEPT	.368	108	.713	.814
Pre-SORS	-.05	108	.960	-.005
Pre-ERMQ	0.175	108	.861	.358

Note: GEPT=general English proficiency test; pre-SORS=pretest score on Survey of Reading Strategies; pre-ERMQ=pretest score on English Reading Motivation Questionnaire. $p<.05$

Descriptive summary of the posttest data

Overall, participants' reading comprehension posttest scores ranged from 40 to 100 with a mean score of 73.3. For the control group, the mean score for post reading comprehension test is 69.81, while it is 76.79 for the experimental group. The participants' reading strategies scores on the post-test ranged from 1.8 to 4.73 with a mean score of 3.45. For the experimental group, participants' reading strategies awareness had an overall mean score of 3.54 on the post-test. For the control group, participants reading strategies awareness had an overall mean score of 3.36 on the post-test. The participants' English reading motivation score range from 48 to 117. The mean score for the control group on post-ERMQ is 82.28, while the mean score for experimental group on post-ERMQ is 87.39.

Table 4-13 below listed the summary of the posttest scores on each dependent variable of each group. In general, the experimental group outperformed the control group on three dependent variables. Statistical significance will run for analysis later in this chapter.

Table 4-13. Mean and standard deviation of three posttest data

	T or C	N	Mean	Sd.	Mean difference
Post RC	control	54	69.81	14.21	
	treatment	56	76.79	12.95	6.98
Post-SORS	control	54	3.36	0.53	
	treatment	56	3.54	0.65	0.18
Post-ERMQ	control	54	82.28	11.3	
	treatment	56	87.39	13.3	5.11

Note: C= control group; T=treatment group; EESE= high school entrance exam score in English; ETE=English mid-term exam; GEPT=general English Proficiency Test; PostRC=post reading comprehension test.

Reliability of Scores of the Measurements

As discussed in Chapter three, the validity and reliability of three measurements used in this study were already established by previous research. (LTTC in Taiwan, Mokhtari, K. and Sheorey, R., 2002; Mori, 2002) However, the testing environment and population of this study

were different from previous researches. For that reason, the reliability of each measurement was tested with the participants of this study to check whether it was also reliable in this experimental condition. Cronbach alpha α, one of the most commonly reported standard reliability estimates in the language testing literature, was used to check reliability or internal consistency of each measurement and was presented in order in the following section.

Reliability of scores of the reading comprehension test

Reading comprehension test was selected from GEPT with 20 questions in the reading section. The reading section covers diverse topics and genres. (See Appendix H) Subjects' responses on the test were recorded as correct and incorrect (0/1) to avoid the effect of the treatment. The result in Table 4-14 indicates a high reliability of reading comprehension test. In the pretest, 119 answer sheets were collected and the result of Cronbach's alpha α was .741. For the posttest, 113 answer sheets were obtained and the result of Cronbach's alpha α was .837. According to Kline (1999, cited in Field, 2005), the general accepted value of .8 is appropriate for cognitive tests such as intelligence tests, while for the ability test, a cut-off point of .7 is more suitable. Therefore, the reading comprehension test of this study, whose Cronbach's alpha α = .73 and .83 were considered reliable for this study.

Table 4-14. Reliability of scores of reading comprehension test in pre-test and post-test

Reading comprehension test	alpha α	N
Pretest	.741	119
Posttest	.837	113

Reliability of scores of the *Survey of Reading Strategy* (SORS)

The reliability of scores of the SORS and its subscales were also calculated in pre-test and post-test administration for the entire sample with N=114 by using Cronbach's alpha α. The result indicates that this instrument as a whole and the subscales has moderate to high reliability

for the sample tested (See the following Table 4-15). The overall α is .881 for the pretest and .911 for the posttest. The Cronbach's alpha α of each subscale in the pretest data were .803, .742, and .675 respectively. And the Cronbach's alpha α of each subscale in the posttest data were .778, .814, and .736 respectively. As the overall Cronbach's alpha α in pretest and posttest were all above .7 and thus indicated good reliability and thus a reliable instrument for surveying reported reading strategy use in this study.

Table 4-15. Reliability of scores of the SORS in the pre-test and post-test

SORS	Alpha α	N
Pretest		
Total	.881	114
Subscale 1 (GLOB)	.803	114
Subscale 2 (PROB)	.742	114
Subscale 3 (SUP)	.675	114
Posttest		
Total	.911	114
Subscale 1 (GLOB)	.778	114
Subscale 2 (PROB)	.814	114
Subscale 3 (SUP)	.736	114

Note: SORS=Survey of Reading Strategies; Subscale 1 (GLOB) = Global Reading Strategies; Subscale 2 (PROB) = Problem-Solving Strategies; Subscale 3 (SUP) = Supporting Reading Strategies

Reliability of Scores of the *English Reading Motivation Questionnaire* (ERMQ)

The reliability of scores of the ERMQ and its subscales was also calculated for the pre-test and post-test administration with the entire sample of 113 by using Cronbach's alpha α. The instrument as a whole and the subscales had moderate to high reliability for the sample tested (See the following Table 4-16). The result indicates that this instrument as a whole and the subscales has moderate to high reliability for the sample tested (See Table 4-16). The overall α is .918 for the pretest and .915 for the posttest. For all the subscales in the pretest, the Cronbach's alpha α was .855, .734, .739, and .786 respectively. Similarity, all the subscales in the posttest the Cronbach's alpha α yielded .879, .747, .707, and .850 respectively. As the

overall α were all above .8 in the pretest and posttest, and thus indicated a good reliability of the *English Reading Motivation Questionnaire (ERMQ*) and thus a reliable instrument for the purposes of surveying reported English reading motivation in this study .

Table 4-16. Reliability of scores of the ERMQ for the pre-test and post-test

ERMQ	Alpha α	N
Pretest		
Total	.918	113
Subscale 1	.855	113
Subscale 2	.734	113
Subscale 3	.739	113
Subscale 4	.786	113
Posttest		
Total	.915	113
Subscale 1	.879	113
Subscale 2	.747	113
Subscale 3	.707	113
Subscale 4	.850	113

Note: ERMQ= English reading motivation questionnaire; Subscale 1 is intrinsic motivation; Subscale 2 is extrinsic motivation; Subscale 3 is the importance of English; while subscale 4 measure reading efficacy.

Assumptions of ANCOVA

This study intended to use ANCOVA to analyze the measurement outcomes by taking account of confounding variables to get a "purer" measure of the effect of the experimental manipulation. The advantages of using ANCOVA are that it increases statistical power and reduces bias by equating groups on one or more covariates. In this study, the covariate is the GEPT score before the treatment and the dependent variables are: 1) post-reading comprehension test, 2) the post-SORS score, and 3) the post-ERMQ score after the treatment. The use of ANCOVA requires several assumptions. Hence, performing ANCOVA, it is worthy of evaluating the data to determine whether the assumptions of ANCOVA are met. The following section describes whether this study has met all the ANCOVA assumptions: 1) homogeneity of

variance; 2) homogeneity of regression slopes; 3) normal distribution of the sample on three dependent variables; and 4) the relationship between the outcome and the covariate is linear.

Homogeneity of variances

The assumption of homogeneity of variance means that the group variances should be the same throughout the data (Field, 2005). Levene's test tests the hypothesis that variances in the groups are equal. That is, the difference between the variances is zero. Table 4-17 summarizes Levene's tests on three dependent variables. The results yielded that for post reading comprehension test, F (1, 108) = 1.13, p >.05. For the post SORS, F (1, 108) = 0.776, p >.05, and for the post ERMQ, F (1, 108) = 1.533, p >.05, all showed at a level of non-significance (p > .05) and thus indicated that the group variances were equal in three measurements and hence the assumption of homogeneity of variance has met.

Table 4-17. Levene's test of equality of error variance

	F	*df1*	*df2*	*Sig*
Post RC	1.134	1	108	.289 p >.05
Post SORS	0.776	1	108	.380 p >.05
Post ERMQ	1.533	1	108	.218 p >.05

Note: Post RC=post reading comprehension test; post SORS=post Survey of Reading Strategies; post ERMQ=post English reading motivation questionnaire

Homogeneity of regression slopes

The assumption of homogeneity of regression slope means that the relationship between covariate and the outcome variables should be the same in all groups. Therefore, this assumption was examined by running the ANCOVAs with the interactions and checking whether they were significant. The result of the interaction effect of treatment by covariate in the post-reading comprehension test is not significant at F (1, 106) = 0.019, p > .05. In the post-*Survey of Reading Strategies*, the result of interaction effect of treatment by covariate is not significant at F (1, 106) = 2.597, p > .05, either. In the post-*English Reading Motivation Questionnaire*, the

result of interaction effect of treatment by covariate is F (1, 106) = 0.615, $p > .05$, which is not significant, either. Besides, because there were no interactions between the covariate and the treatment on each dependent variable, the assumption of homogeneity of regression slopes was met.

Linearity: the relationship between the outcome and the covariate is linear

This assumption means that the relationship between the covariate and the outcome variables should be the same in all of the groups. The correlation between covariate (GEPT) and three dependent variables are shown in the following Table 4-18. The conventions proposed by Davis (1971) were used to indicate the magnitude of the correlations. Correlations between 0.50 and 0.69 are substantial, and correlations between 0.70 and 0.99 are very high. Therefore, a substantial correlation was observed between GEPT and the post-reading comprehension test (r = .643). Also, high correlations were discovered between GEPT, the covariate, and the post-SORS (r = .809) as well as the post-ERMQ (r = .781).

Table 4-18. Correlations between covariates and each dependent variable

	Post-reading comprehension test	Post-SORS	Post-ERMQ
GEPT (covariate)	.643(**)	.809(**)	.781(**)

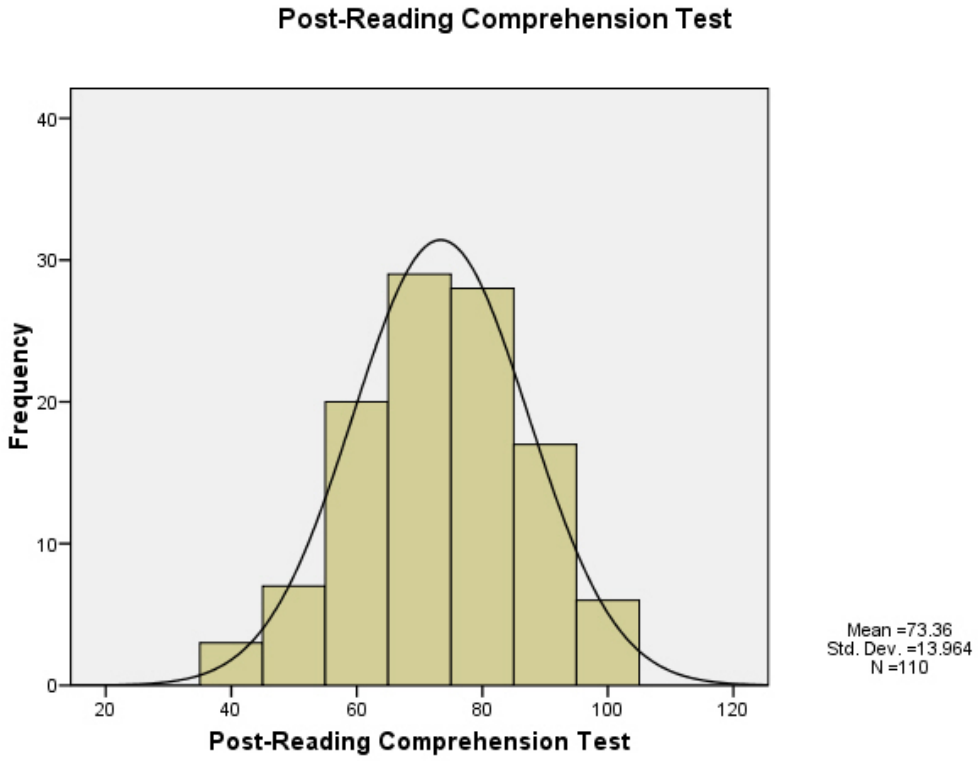
Note: GEPT=general English proficiency test; post-SORS=posttest score on Survey of Reading Strategies; post-ERMQ=posttest score on English Reading Motivation Questionnaire.

- (**) correlation is significant at the 0.01 level , N=110

Normal distribution of the sample on three dependent variables

The following figures (4-1, 4-2, and 4-3) presented the distributions of the three dependent variables-- the post-English reading comprehension test, the post *Survey of Reading Strategies*, and the post *English Reading Motivation Questionnaire*. In addition, the tables for Skewness and Kurtosis are under each figure. The results of the figures and tables demonstrated

normal distributions from the data in which were sampled. Therefore, the assumption of normal distribution on dependent variables was met.



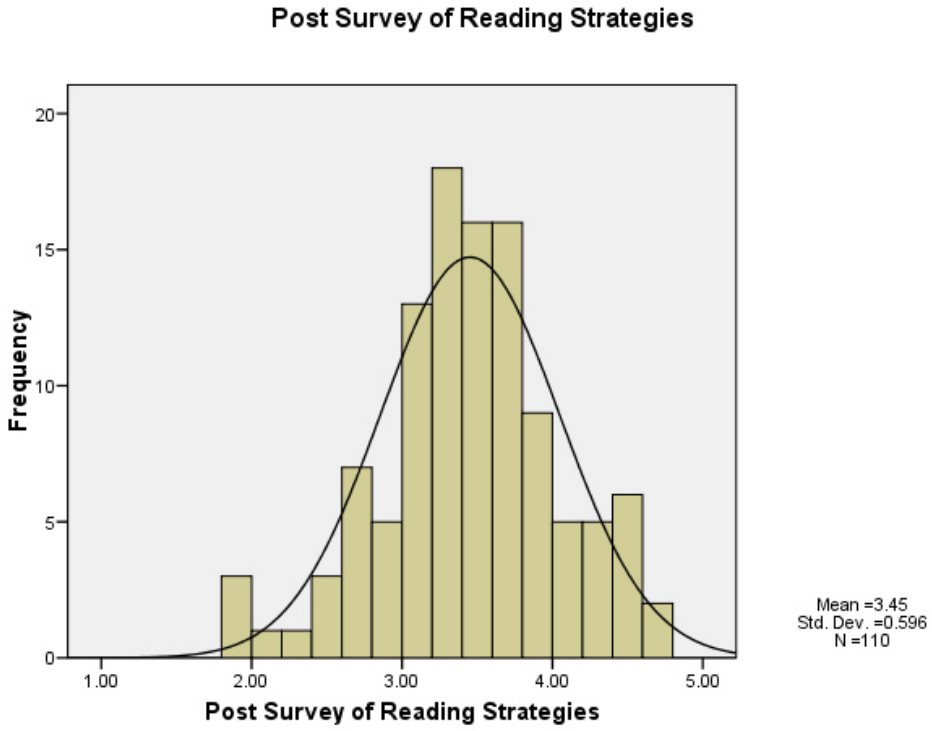
Statistics

Post-Reading Comprehension Test

N	Valid	110
	Missing	0
Skewness		-.170
Std. Error of Skewness		.230
Kurtosis		-.326
Std. Error of Kurtosis		.457

Table of Skewness and Kurtosis in post- Reading Comprehension Test

Figure 4-1. Post-Reading Comprehension Test



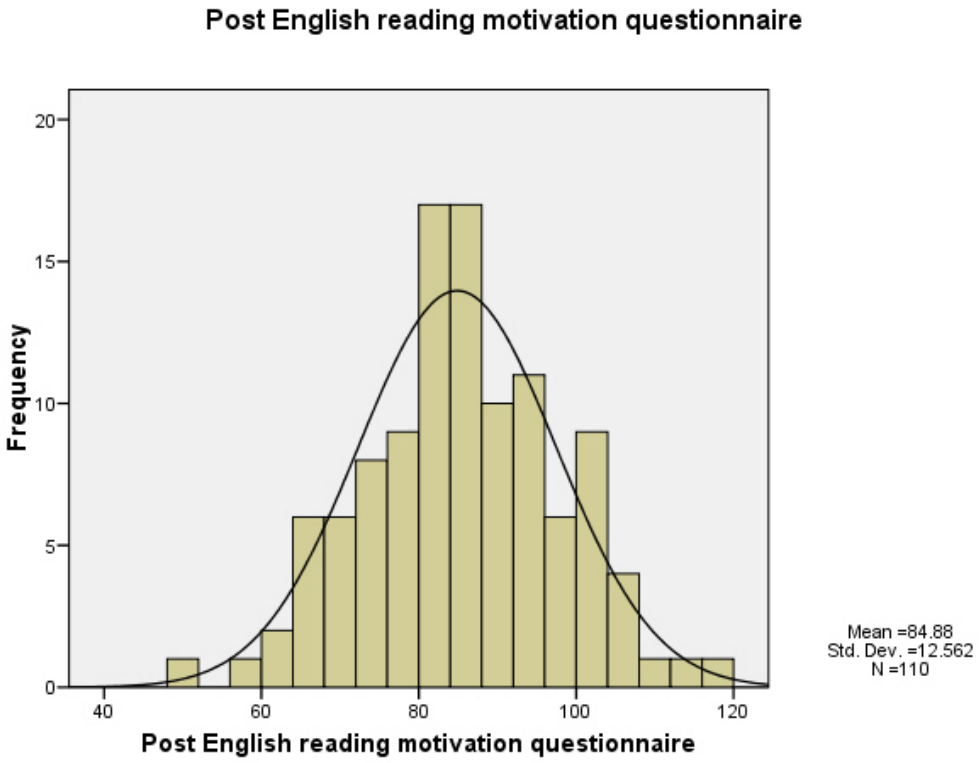
Statistics

Post Survey of Reading Strategies

N	Valid	110
	Missing	0
Skewness		-.246
Std. Error of Skewness		.230
Kurtosis		.228
Std. Error of Kurtosis		.457

Table of Skewness and Kurtosis in post *Survey of Reading Strategy (SORS)*

Figure 4-2. Post-*Survey of Reading Strategies (SORS)*



Statistics

Post English reading motivation questionnaire

N	Valid	110
	Missing	0
Skewness		-.050
Std. Error of Skewness		.230
Kurtosis		.093
Std. Error of Kurtosis		.457

Table of Skewness and Kurtosis in post- *English Reading Motivation Questionnaire (ERMQ)*

Figure 4-3. Post-*English Reading Motivation Questionnaires (ERMQ)*

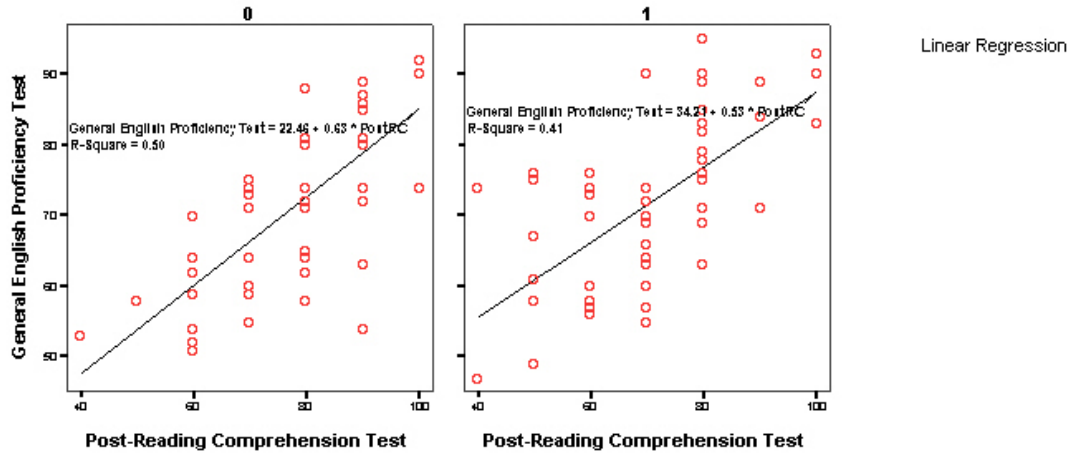


Figure 4-4. Scatterplot of Covariate against post-reading comprehension test

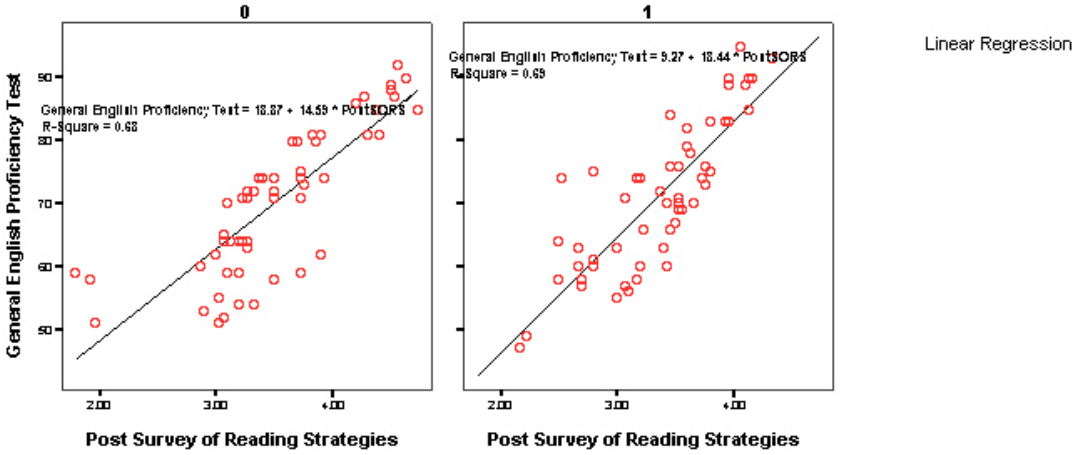


Figure 4-5. Scatterplot of Covariate against post-*Survey of Reading Strategies (SORS)*

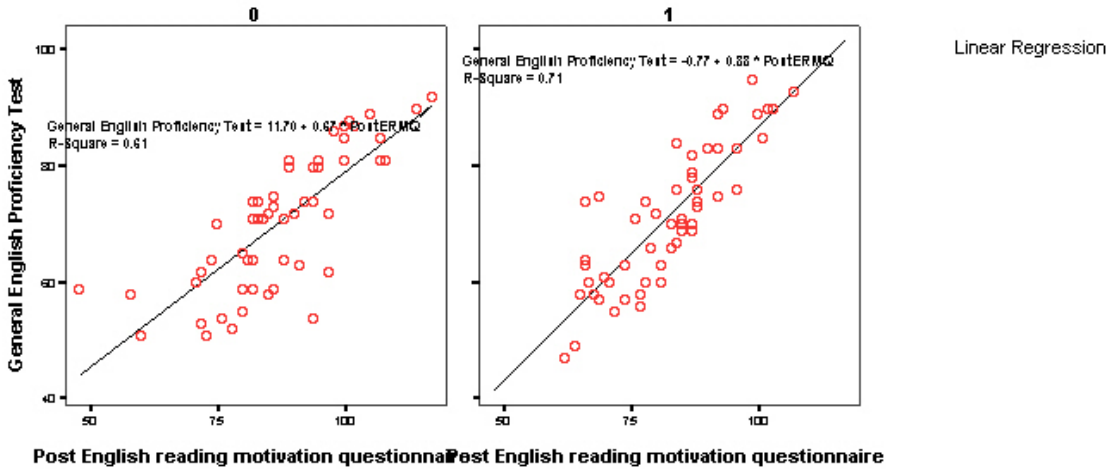


Figure 4-6. Scatterplot of Covariate against post-*English Reading Motivation Questionnaire (ERMQ)*

Therefore, assumption of linearity between the covariate and the three outcomes was met. Figure 4-4, Figure 4-5, and Figure 4-6 showed the scatterplot of covariate against three dependent variables by groups where 0 represents the experimental group while 1 represents the control group. The three scatterplots show that there is a positive relationship between the covariate and the three outcome variables.

Hypothesis Test

The research questions in this study restated as: 1) what is effect of metacognitive reading strategy instruction on EFL secondary students' English reading comprehension; 2) what is effect of metacognitive reading strategies instruction on EFL secondary students' English reading strategies awareness; 3) what is effect of metacognitive reading strategy instruction on EFL secondary students' English reading motivation; and 4) Is there any interaction effect of metacognitive reading strategy instruction and participants' English reading proficiency? In other words, this research was designed to check whether metacognitive reading strategy instruction (MRSI) could influence EFL secondary students' English reading comprehension,

reading strategies awareness, English reading motivation, and whether the impacts of MRSI varies across difference language proficiency levels. In addressing these research questions, this study aims to test the following four null hypotheses:

H_{01} Reading comprehension will be the same for high school students with metacognitive reading strategy instruction (MRSI) with those without metacognitive reading strategy instruction.

H_{02} Perception about reading strategies will be the same for high school students with metacognitive reading strategy instruction with those without metacognitive reading strategies instruction.

H_{03} Motivation to reading English will be the same for high school students with metacognitive reading strategy instruction with those without metacognitive reading strategy instruction.

H_{04} The effect of metacognitive strategy instruction will be larger for EFL students with lower language competence.

Results of these hypotheses were analyzed through ANCOVA and were presented in the following sections.

Effect of treatment on post-English reading comprehension test

The first dependent variable is the posttest of English reading comprehension as measured by GEPT reading section. Analysis of covariate (ANOCA) was conducted to examine between-subjects effect of treatment on post-English reading comprehension test. If the F-test is significant, then the probability of the effect being detected will be high. The mean and standard deviation as well as the result of ANCOVA are presented in Table 4-19 and Table 4-20 respectively. Results of the ANCOVA, as shown in the following Table 4-20, revealed that the covariate, general English proficiency test, was significantly related to the participants' post-reading comprehension test, F (1, 107) = 88.83, $p < .05$. The effect size (Eta Squared η_p^2) = .43 of covariate also indicates that after controlling the effect of the treatment, the covariate explains 45% of variable of the post reading comprehension scores and thus it has large effect on the post

reading comprehension test. That is, after controlling for the effect of the treatment, the covariate explains 45% of the variables of post reading comprehension scores.

Table 4-19. Mean and Standard Deviation of post- English Reading Comprehension test

	Experimental Group		Control Group	
N	56		54	
	Mean	SD	Mean	SD
Pre test GEPT (covariate)	70.48	11.43	71.30	11.74
Post-reading comprehension test (DV)	76.79	12.95	69.81	14.21

Note: DV=dependent variable

In addition, there was a significant effect of the treatment on post-English reading comprehension score after controlling for the effect of participants' English reading ability, F (1, 107) = 15.65, $p < .05$. The effect size (Eta Squared $\eta_p^{2)} = .08$ of the treatment (MRSI) indicates a small to medium effect on post English reading comprehension. The values of effect size are useful because they provide an objective and standardized measure of the importance of an effect, the treatment effect in this study. To put it briefly, there was a significant difference between the experimental group and the control group on the post reading comprehension test after the treatment (MRSI) when covariate GEPT was held constant. The impact of this significant difference for the change in the post reading comprehension test was also analyzed with Cohen'd statistical effect size. That is, in order to obtain an objective and standardized measure of the difference between the experimental group and control group, Cohen'*d* effect size was calculated according to the following formula.

$$d = M_1 - M_2 / \sigma_{pooled} \quad \text{and} \quad \sigma_{pooled} = \sqrt{\left[\left(\sigma_1^{\,2} + \sigma_2^{\,2}\right)/2\right]}$$

The result of Cohen's *d* calculation was 0.51, which indicated that the experimental group scored 0.51 standard deviation higher than the control group. This indicated that there was a large effect of the treatment (MRSI) and it is educationally significantly. Therefore, there was

enough evidence to reject H_{01} and concluded that, after 10-week MRSI training, the experimental group outperformed the control group in English reading comprehension.

Table 4-20. ANCOVA table on Post-English Reading Comprehension Test

Source	*SS*	*df*	*MS*	*F*	*p*	Eta Squared
GEPT (covariate)	9035.4	1	9035.4	88.83*	.000	.43
Treatment	1591.47	1	1591.47	15.65*	.000	.08
Error	10884.18	107	101.72			
Total	21255.46	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

Effect of treatment on the post-*Survey of Reading Strategies (post-SORS)*

The second dependent variable was the post-*SORS* test as measured by the *Survey of Reading Strategies*. The result of this measurement aims to examine the effect of metacognitive reading strategy instruction (MRSI) on EFL secondary students' English reading strategies awareness. Therefore, an Analysis of Covariate (ANCOVA) was used to answer this null hypothesis with the treatment as the independent variable. Posttest score of the SORS is the dependent variable while the pretest score of the reading comprehension test is the covariate. Results of ANCOVA revealed that there was a significant effect of treatment (MRSI) on post-*Survey of Reading Strategy* test, F (1, 107) = 10.28, p <.05. The effect size (Eta Squared η_p^2) = .10 also indicated a small to medium effect on SORS. Descriptive statistics for these two groups in terms of the post- SORS are in the following Table 4-21.

Table 4-21. Mean and Standard deviation for post-*Survey of Reading Strategy*

Group	Mean	Std.	N
Control	3.36	.53	54
Experimental	3.53	.65	56

Table 4-22. ANCOVA table on post *Survey of Reading Strategy*

Source	SS	*df*	MS	F	p	Eta Squared
GEPT (covariate)	25.7	1	25.7	225.179*	.000	.66
treatment	1.173	1	1.173	10.28*	.002	.03
Error	12.21	107	0.114			
Total	38.73	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

Results of the ANCOVA, as shown in Table 4-22, revealed that the covariate, general English proficiency test, was significantly related to the participants' post-SORS, F (1, 107) = 225.179, p <.05. Therefore, the assumption of ANCOVA was met and the use of ANCOVA to test this hypothesis is appropriate. The effect size of covariate (Eta Squared η_p^2) = .66 indicating a large effect of the covariate on the post- *SORS*. Moreover, there was a significant effect of treatment (MRSI) on post-SORS after controlling for the effect of participants' English reading ability, F (1, 107) = 10.28, p < .05, with the effect size (Eta Squared $\eta_p^{2)}$ of .03. The result of ANOCA table indicated that the treatment (MRSI) made a significant difference between the experimental group and the control group on post-*Survey of Reading Strategy* test when covariate GEPT was held constant. The Table 4-22 also reveals a small effect (η_p^2 = .10) of the treatment. The result of Cohen's *d* was 0.31 standard deviation, which demonstrated that the experimental group scored 0.31 higher than the control group, thus there was a medium to large effect of the treatment and it is educationally significantly. Therefore, there was enough evidence to reject H_{02} and concluded that the experimental group outperformed the control group after 10-week MRSI on their English reading strategy awareness and thus indicated that MRSI has positive effect on EFL secondary students' reading strategy awareness.

As there were three subtests in the *Survey of Reading Strategy*, each subtest in post-SORS was also examined to check the effect of treatment (MRSI) on each subtest, global reading strategies (GLOB), problem-solving strategies (PROB), and supportive reading strategies (SURP). Results are presented in the following tables.

Table 4-23. Mean and Standard deviation of *GLOB* subtest in post-*Survey of Reading Strategy*

Group	Mean	Std.	N
Control	3.33	.53	54
Experimental	3.57	.61	56

From the Table 4-23 above, the mean score of the experimental group was 3.57 and the mean score of the control group was 3.33. According Mokhtari and Sheorey's (2002) classification, the experimental group is "high reading strategies user" while the control group is "moderate reading strategies user" in terms of *Global Reading Strategies* (GLOB) after 10-week instruction.

As shown in the below Table 4-24, the analysis of ANOCA yielded an *F* ration of 14.02, $p < .05$ which was statistically significant. Also, the obtained effect size Cohen's *d* of 0.12 was also educationally meaningful. In other words, the treatment, metacognitive reading strategy instruction (MRSI), made a significant difference between groups in terms of the awareness of *Global Reading Strategies.*

Table 4-24. ANCOVA table on GLOB *reading strategies* in post-SORS

Source	*SS*	*df*	*MS*	*F*	*p*	Eta Squared
GEPT (covariate)	20.55	1	20.55	148.44*	.000	.56
treatment	1.94	1	1.94	14.02*	.000	.05
Error	14.81	107	0.138			
Total	36.89	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

Table 4-25. Mean and Standard deviation of PROB reading strategies subtest in post-*Survey of Reading Strategy*

Group	Mean	Std.	N
Control	3.50	.67	54
Experimental	3.61	.81	56

Table 4-26. ANCOVA table on PROB reading strategies in post-SORS

Source	SS	df	MS	F	*p*	Eta Squared
GEPT (covariate)	36.72	1	36.72	173.64*	.000	.61
Treatment	0.677	1	.677	3.202	.076	.01
Error	22.624	107	0.211			
Total	59.71	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

As shown in the above Table 4-26 in terms of *problem-solving reading strategies* subtest, the ANCOVA analysis yielded an *F* ration of 3.202, p>.05 which was not statistically significant. Meanwhile, the obtained effect size of 0.01 was not educationally meaningful, either. In other words, the treatment, metacognitive reading strategy instruction (MRSI), didn't make a significant difference between groups in terms of the awareness of *Problem-solving Reading Strategies.*

Table 4-27. Mean and Standard deviation of SUP subtest in post-SORS

Group	Mean	Std.	N
Control	3.28	.58	54
Experimental	3.41	.70	56

Table 4-28. ANCOVA table on Supportive reading strategies in post-SORS

Source	SS	df	MS	F	p	Eta Squared
GEPT (covariate)	24.66	1	24.66	128.47*	.000	.54
Treatment	0.753	1	.753	3.925*	.05	.04
Error	20.541	107	0.192			
Total	45.682	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

As shown in the above Table 4-28, the analysis yielded an *F* ration of 3.925, p< .05, which was statistically significant. Likewise, the obtained effect size of 0.04 was a really small effect. In other words, the treatment, metacognitive reading strategy instruction (MRSI), did made a significant difference between groups in terms of the awareness of *Supportive Reading Strategies.* In summary, the treatment, the metacognitive reading strategy instruction (MRSI) has effects on global reading strategies and supportive reading strategies. And this result indicating that, by integrating the metacognitive reading strategy instruction (MRSI) into English reading classes, EFL high school students were involved in the reading activities through cooperative and group learning activities and they think more and deeper while reading.

Effect of treatment on post-*English Reading Motivation Questionnaire* (post-*ERMQ*)

The third dependent variable is post-ERMQ as measured by *English Reading Motivation Questionnaire.* To answer the third hypothesis, an analysis of covariate (ANCOVA) was used to answer this null hypothesis with treatment (MRSI) as the independent variable and posttest score of the *English Reading Motivation Questionnaire* as the dependent variable, and pretest score of GEPT as the covariate. Descriptive statistics for these two groups in terms of the post- ERMQ are in the following Table 4-29.

Table 4-29. Mean and standard deviation *English Reading Motivation Questionnair*e

Treatment or control	Mean	Sd.	N
Control	82.28	11.30	54
Treatment	87.39	13.29	56
Total	84.88	12.56	110

Results of the ANCOVA, as shown in the following Table 4-30, revealed that the covariate, general English proficiency test, was significantly related to the participants' post-ERMQ, F (1, 107) = 198.19, p <.05. The effect size of covariate **(**Eta Squared $\eta_p^{2)}$ = .62 indicating a large effect of the covariate on post ERMQ. Moreover, there was a significant effect

of treatment on post-ERMQ after controlling for the effect of participants' English reading ability, F (1, 107) = 17.187, p < .05, with a medium to large effect size (Eta Squared η_p^2) of .19. The result of ANOCA table indicates that the treatment (MRSI) made a significant difference between the experimental group and the control group on post- *English reading motivation questionnaire* (ERMQ) when covariate GEPT was held constant. The result of Cohen's *d* was 0.4, which was a medium to large effect for the treatment, indicating that the result is educationally significantly. Therefore, there was enough evidence to reject H_{03} and concluded that the experimental group outperformed the control group after 10-week MRSI in their English reading motivation.

Table 4-30. ANCOVA table on *English Reading Motivation Questionnaire* (ERMQ)

Source	SS	df	MS	F	p	Eta Squared
GEPT (covariate)	10703.53	1	10703.53	198.19*	.000	.62
Treatment	928.211	1	928.211	17.187*	.002	.19
Error	5778.66	107	54.006			
Total	17201.464	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

As there were four subtests in *English reading motivation questionnaire (ERMQ)*- intrinsic reading motivation, extrinsic reading motivation, the importance of English reading, and reading efficacy. Each subtest in post-ERMQ was examined and presented in the following section.

Table 4-31. Mean and Standard deviation of intrinsic reading motivation subtest in post-*ERMQ*

Group	Mean	Std.	N
Control	2.68	0.41	54
Experimental	2.85	0.48	56

As shown in the below Table 4-32, the ANCOVA analysis yielded an *F* ration of 12.684, p< .05 which was statistically significant. Meanwhile, the obtained effect size of 0.11 was a small to medium effect. In other words, the treatment, metacognitive reading strategy instruction

(MRSI), did made a significant difference between groups in terms of the intrinsic English reading motivation.

The effect of treatment in extrinsic reading motivation subtest was examined as following. As shown in the Table 4-34 below, the analysis yielded an *F* ration of 8.833, which was statistically significant. Meanwhile, the obtained effect size of 0.08 was a really small effect. In other words, the treatment, metacognitive reading strategy instruction (MRSI), did made a significant difference between groups in terms of the extrinsic English reading motivation. However, it is probably not educationally meaningful with such a small effect size of 0.08.

Table 4-32. ANCOVA table on intrinsic reading motivation in post-*ERMQ*

Source	SS	df	MS	F	p	Eta Squared
GEPT (covariate)	12.83	1	12.83	160.127*	.000	.58
Treatment	1.016	1	1.016	12.684*	.001	.11
Error	8.57	107	.08			
Total	22.173	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

Table 4-33. Mean and Standard deviation of Extrinsic reading motivation subtest in post-*ERMQ*

Group	Mean	Std.	N
Control	2.92	.517	54
Experimental	3.08	.516	56

Table 4-34. ANCOVA table on extrinsic reading motivation in post-ERMQ

Source	*SS*	*df*	*MS*	*F*	*p*	Eta Squared
GEPT (covariate)	16.745	1	16.745	147.78*	.000	.57
Treatment	1.016	1	1.016	8.833*	.004	.08
Error	12.124	107	.113			
Total	29.603	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

Table 4-35. Mean and Standard deviation of the importance English reading subtest in post-*ERMQ*

Group	Mean	Std.	N
Control	3.15	.48	54

Experimental	3.35	.46	56

As shown in the above Table 4-36, the analysis yielded an *F* ration of 6.996, $p < .05$ which was statistically significant. Likewise, the obtained effect size of 0.05 was a small effect. In other words, the treatment, metacognitive reading strategy instruction (MRSI), did made a significant difference between groups in terms of the importance of English reading. In other words, the treatment had an effect on the participants' perception regarding the importance of English reading. However, the effect size indicated that this was not educationally meaningful.

Table 4-36. ANCOVA table on the importance English reading in post-*ERMQ*

Source	SS	df	MS	F	p	Eta Squared
GEPT (covariate)	5.072	1	5.072	28.351.78*	.000	.20
Treatment	1.252	1	1.252	6.996*	.009	.05
Error	19.142	107	.179			
Total	25.295	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares.

Table 4-37. Mean and Standard deviation of reading efficacy subtest in post-*ERMQ*

Group	Mean	Std.	N
Control	2.43	.73	54
Experimental	2.62	.53	56

Table 4-38. ANCOVA table on reading efficacy in post-ERMQ

Source	SS	df	MS	F	p	Eta Squared
GEPT (covariate)	16.997	1	16.997	66.45*	.000	.38
Treatment	1.249	1	1.249	4.88*	.029	.03
Error	27.368	107	.256			
Total	45.309	109				

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

As shown in Table 4-38, the analysis yielded an *F* ration of 4.88, which was statistically significant. Similarly, the obtained effect size of 0.03 was a small effect. In other words, the treatment, metacognitive reading strategy instruction (MRSI), did made a significant difference between groups in terms of the reading efficacy of English reading.

In summary, the treatment, metacognitive reading strategy instruction (MRSI) has effect on the participants in the experimental group on their perception regarding intrinsic reading motivation, importance of reading, and reading efficacy. In other words, through metacognitive reading strategy instruction, the high school EFL students' English reading motivation was higher than before, especially on their intrinsic reading motivation and reading efficacy. More qualitative data on this issue will discuss further in chapter five.

Effect of treatment on different language ability in three dependent variables

Previous research literature findings all showed that it appeared that those who with lower language proficiency level benefit the most from the reading strategy instruction (Cordero-Ponce, 2000; Kern, 1983; Song; 1998). This study, on the other hand, has different result. The results of interaction of treatment by language ability were not at a significant level in each dependent variable. The following Table 4-39 presents ANCOVA table on the interaction effect of the treatment (MRSI) on language abilities on post- reading comprehension test and the obtained *F* ration was 0.567, $p > .05$, which was not significant. Table 4-40 presents ANCOVA table on the interaction effect of the treatment (MRSI) on language abilities on post-*SORS* test, and the obtained *F* ratio was 0.96, $p > .05$, which was not significant. At last, Table 4-41 presents ANCOVA on the interaction effect of the treatment (MRSI) on language abilities on post -*ERMQ* test, and the obtained F ration was 0.204, $p > .05$, which was not significant, either. In other words, the effect of treatment (MRSI) didn't make a significant difference on diverse reading abilities across three measurements. That is to say, the treatment (MRSI) had similar effect on high, medium, and low reading levels. Therefore, there was no enough evidence to reject H_{04}.

Table 4-39. ANCOVA table on interaction effect of treatment on language ability in post-reading comprehension test

Source	SS	df	MS	F	p
Group	1143.815	1	1143.815	10.321*	.002
Lanability	7899.02	2	3949.51	35.638*	.029
Group*Lanability	125.613	2	62.807	.567	.569
Error	11525.498	104	.256		
Total	613300	110			

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

Table 4-40. ANCOVA table on interaction effect of treatment on language ability in post-SORS test

Source	SS	df	MS	F	p
Group	1.713	1	1.713	10.969*	.001
Lanability	21.301	2	10.651	68.197*	.000
Group*Lanability	.300	2	.150	.960	.386
Error	16.242	104	.156		
Total	1349.219	110			

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

Table 4-41. ANCOVA table on interaction effect of treatment on language ability in post ERMQ test

Source	SS	df	MS	F	p
Group	941.163	1	941.163	12.735*	.001
Lanability	8600.367	2	4300.183	58.185*	.000
Group*Lanability	30.216	2	15.108	.204	.815
Error	7686.147	104	73.905		
Total	809743	110			

Note: Type III sum of squares. *p<.05; SS = Sum of squares, *df* = degree of freedom; MS = mean squares

However, a closely examination on the following figures (Figure 4-7, 4-8, and 4-9) tells us that, even though the treatment (MRSI) didn't make a statistically significant effect on three language levels on three post measurements and the effect did exist between the treatment group and the control group. For instance, the following figures (Figure 4-7, 4-8, and 4-9) highlight three important points. First, the treatment groups' post-reading comprehension test, post- *SORS*, and post- *ERMQ* were always higher than the control groups' post-reading comprehension test, post-*SORS*, and post-*ERMQ*. This means that participants who received metacognitive reading strategy instruction (MRSI) have higher scores than those who did not in terms of reading

comprehension, reading strategy awareness, and reading motivation. Second, regardless of GEPT score, participants who had the treatment (MRSI) outperformed than those who didn't have the treatment (MRSI). This means that the treatment (MRSI) did have influences on participants' reading comprehension, reading strategy awareness, and English reading motivation.

Finally, post- reading comprehension test shows greater increase with those of intermediate English level. In other words, for those who with intermediate English level students, metacognitive reading strategy instruction (MRSI) help them the most in comparison with high and low proficiency level students. For high proficiency level students, their English abilities have been good before the treatment and thus the improvement is limited in comparison to the intermediate level students. As for lower proficiency level students, metacognitive reading strategy instruction also helps them in improving their reading comprehension to some degree but the improvement wasn't as obvious as those intermediate level students. Likewise, Post-*SORS* score shows greater increase with those of high English level students. For high proficiency level students, since their reading ability has been good before the treatment, their reading strategy awareness became unconscious before the treatment. And they were reminded and were informed to a list of reading strategies and thus have higher scores on post SORS. As to the post ERMQ, the figure shows slightly increase with those of intermediate and high English level students in comparison to low proficiency level, though the difference wasn't at all significant.

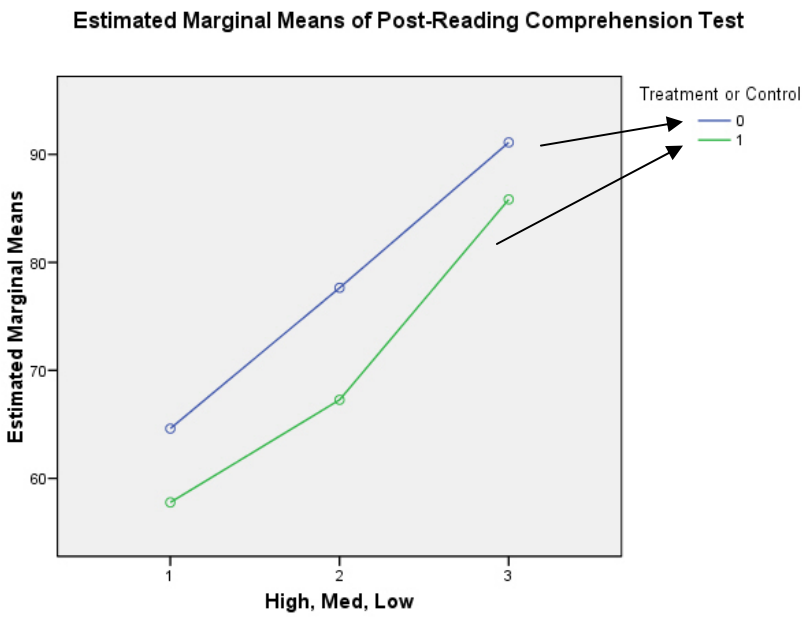


Figure 4-7. Interaction between language level and group in post reading comprehension test

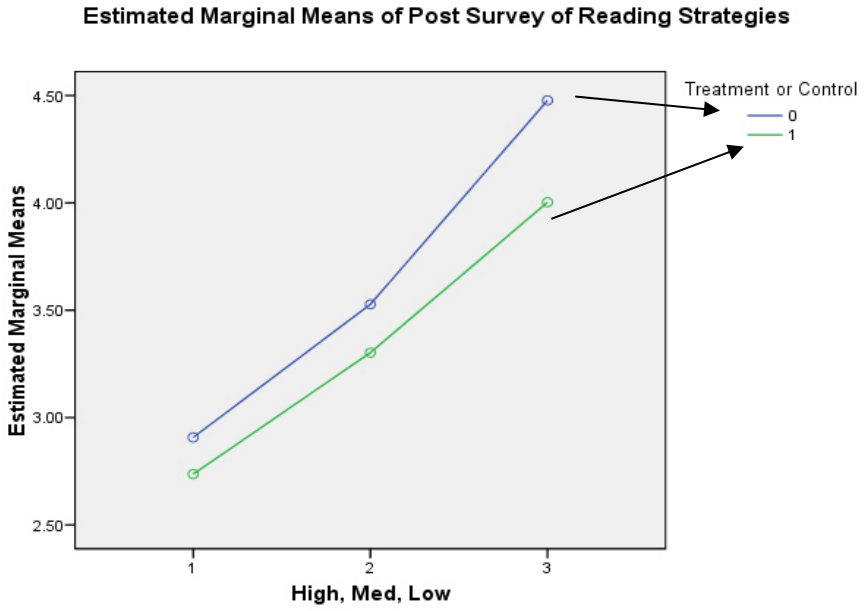


Figure 4-8. Interaction between language level and group in post SORS

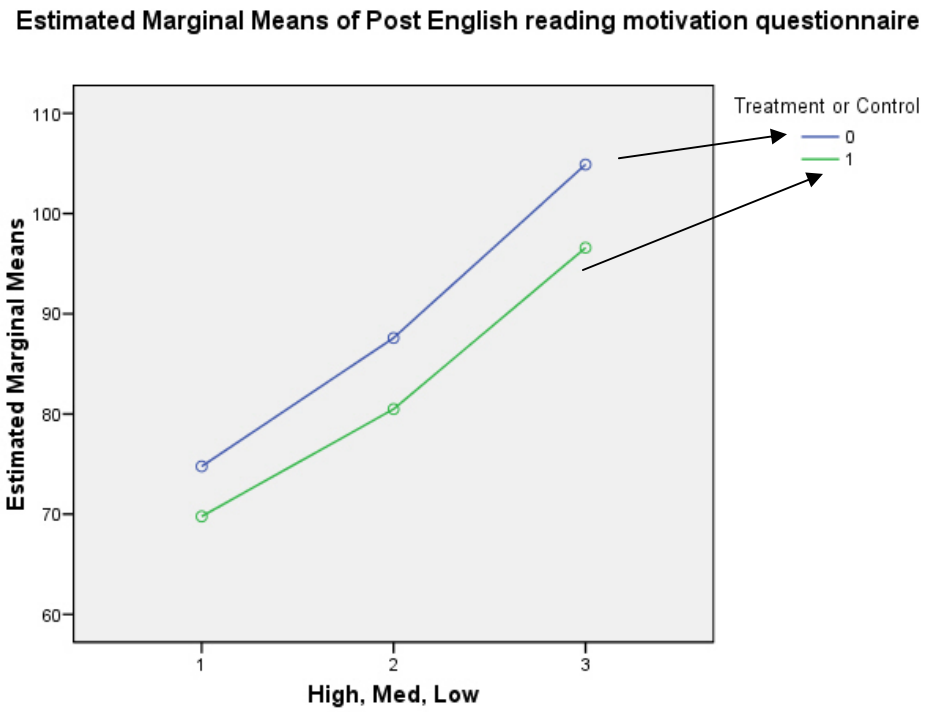


Figure 4-9. Interaction between language level and group in post ERMQ

Conclusion

The goal of the quantitative part of this study was to investigate the possible effects of integrating metacognitive reading strategy instruction (MRSI) into regular English reading classes on EFL secondary students' English reading comprehension, English reading motivation, and perception about reading strategies. Meanwhile, the effect relates to EFL students' different reading proficiency levels are also part of an interest of this study. This chapter has presented the statistical results of this study and the findings are as following. First, the experimental group experienced a significant improvement in their post reading comprehension when comparing with the control group, which demonstrates the evidence that, integrating metacognitive reading strategy instruction (MRSI) into EFL reading classes did significantly increase secondary EFL students' reading comprehension. Second, there was also a significant difference between the two groups in their post-*Survey of Reading Strategy (SORS).* That is, the experimental group

used more reading strategies after the treatment, and the salient increasing use of reading strategy was *Global Reading Strategies* as defined by SORS. That is to say, the experimental group were not confined themselves in using the strategy of word-by-word translation; instead, they agreed that they used more *Global Reading Strategies* after the experiment. Third, there was a significant difference between two groups in their post-*English Reading Motivation Questionnaire* (ERMQ). Participants in the experimental group showed greater boost in the subtests of *Intrinsic Reading motivation* and *Reading Efficacy* and slightly increase in their *Extrinsic Reading motivation*. Last, the effect of metacognitive reading strategy instruction (MRSI) didn't reach a statistically significant difference on different English proficiency levels. That is, the result was consistent with previous studies and further proved that metacognitive reading strategy instruction can help all EFL or ESL students regardless their English proficiency levels.

In conclusion, significant differences were found between the experimental and control group in English reading comprehension, reading strategy awareness, and English reading motivation as measured by the three posttests suggesting that achievement in the experimental group improved as a result of exposure to MRSI. This means that integrating MRSI proved to be an effective way for improving EFL high school students' reading comprehension, reading strategy awareness, and reading motivation. Besides, MRSI improved good and average EFL students' performance and the performance of the low-level students. This finding is consistent with findings of prior studies using (Cordero-Ponce, 2000; Kern, 1989; Song, 1998) other types of MRSI in reading comprehension.

CHAPTER FIVE
QUALITATIVE FINDINGS

Introduction

My predominant interest in secondary EFL students originated from my personal experience teaching EFL adolescents in the past. From my experience, I realized that there is a need to teach high school EFL students how to read in English reading materials. However, it was not until I started my doctoral program at UF that I began to learn about metacognitive learning and how they are related to successful learning. I believed that, with the increasing values placed in English these days, English teachers in Taiwan are doing their best in instruction and preparing their EFL students with the desirable English capacities for their future academic performance and future life or career. However, many high school EFL students, who have been learning English for at least 8 years in average (refer to the average years of the participating students in this study), still try very hard and put so much effort in learning English and yet are struggling or having fears when reading something in English. What is the problem?

In this study, that is my intention to further look into this situation, the situation that quantitative research can't answer through the measurements, by keeping a skeptical attitude to question research assumptions and research-based effective practice, such as metacognitive reading strategy instruction (MRSI for short) in this study. Although the statistical results in the previous chapter has showed the evidence of MRSI's effectiveness on reading comprehension, reading strategy awareness, and reading motivation, I still consider that these statistic results should be double checked through another approach before accepting the fact. Data collected for analyzing in this chapter are: students' reading strategy journals, interviews, classroom observations, and casual communication between the participating teacher, the one who taught in the experimental group and me. The research questions in this phase that guided me to probe

further are: (1) What are the factors bring about high school EFL students' reading experience and reading behaviors? and (2) What intervention features helped secondary EFL students successfully learn reading strategies that enabled them to comprehend the reading text better and are willing to engage more in English reading? This chapter first describes qualitative findings organized by these two research questions that reflect the previous English reading experience of secondary EFL students and then the changes that has been made throughout the study period.

(1) Problems in Reality

Finding # 1 – *Traditional English instruction makes "vocabulary" and "grammar" become reading goals for secondary EFL students. To EFL students, English reading is simply to check the unknown vocabulary and grammatical or sentence structure analysis.*

1-1. <u>Vocabulary instruction</u>. The role of vocabulary in reading comprehension is undeniable in both L1 and L2 reading research (Droop and Verhoeven, 2003; Grabe, 2004; Nation, 2002; Nassaji, 2003; Stanovich, 2000). However, reading instruction only emphasizes the importance of vocabulary without sound instruction of its application does little help to reading comprehension. As discussed in Literature Review in relation to the bottom-up reading comprehension model, vocabulary knowledge is a necessary but insufficient condition for the outcome of successful reading comprehension (Koda, 2005). In view of its important role in reading comprehension, research on effective practice in improving EFL students' vocabulary knowledge has suggested targeting both dimensions of breadth and depth of vocabulary knowledge (Ordonez et al., 2002). In other words, as vocabulary knowledge is important for the reading comprehension for ESL or EFL students, it is better to learn it with engaging context rather than out of context (Fu, 1995; Baumann and Kameenui, 1991). In this study, nearly all the interviewees stated clearly that what they concern the most in English reading is their shortage knowledge in vocabulary, phrases, and grammatical knowledge. The reasons behind this issue are as following. First, the way high school EFL students learned English vocabulary was

isolated and fragment. That is, a new word is learned as "a word with one meaning" only. Typically, in English reading instruction, new words are picked out prior to reading a text. English teachers directly tell their students the meaning of a new word, and then EFL students would grab a pen and a piece of paper, repeatedly write the word down, and then self-test to see if it is memorized. The reading activity wouldn't start until all the new words have been memorized. This kind of vocabulary learning method has made EFL students easy to forget what they have learned because they don' know how a word is used in the context. For instance, one student commented,

> I forgot the words soon after the quizzes. And I cannot recognize them whenever I came across them in reading English books.

Second, neither is vocabulary learned in context, nor is the pronunciation of a new word the focus of the vocabulary instruction. One interviewee said:

> I seldom know how to sound the word out; English teachers seldom teach us or let us practice pronunciation. I just copy it couple times on the paper, then I would gradually know how it looks like and I will know how to spell it. When she (the English teacher) tests us vocabulary, she said the Chinese meaning and we spell the corresponding English word out.

Echoed with the quantitative findings in Chapter Four, "read aloud" is the least frequently used strategy among EFL high school students. What this interviewee meant is that, without knowing how to sound out the word or its pronunciation, he still can memorize the vocabulary and pass vocabulary quizzes. This kind of learning style regarding vocabulary learning probably comes from their experience of learning their first language, Mandarin Chinese. English is an alphabetic system and its basic unit consists of its pronunciation and word structure (spelling) and these two features also map phonological and morphological identities. Chinese, on the other hand, is a logographic system, of which structure provides few or no clues about their

pronunciation. Therefore, to some EFL students of Chinese as a native language, English vocabulary is viewed or recognized as a "picture" or a "logo", and not knowing how to sound out English word still can make them pass English paper tests. To them, they are very likely to rely on their L1 reading strategies when reading English. Thus, readers with logographic script in their L1 will try to apply a "visual" strategy to learn English words.

Besides, English teachers seldom expect their EFL students to know how to sound out a word. As long as high school students can get high scores in the exams, it seems that correct spelling is more valued than pronunciations in most Taiwanese English teachers' points of views, especially when speaking is not the focus in many major exams, such as college entrance exams. Ironically, despite EFL students' limited ability in pronunciation of English words, EFL students are still taught to "read aloud" when there is a comprehension breakdown during reading. When responding to the question regarding English reading strategies they learned during the interview, Lee said:

> …reading strategy? Umm…I think the strategies I learned didn't help much. They (English teachers) told me that, whenever you encounter difficulties during the reading, unknown words or confusing sentences, just read that sentence out loud couple times, then you will get it. But, I tried this method, and I don't think this strategy or solution works at all, honestly, I don't know how it works to teachers but not to me.

From what Lee mentioned, if EFL students without the skills or ability of sounding out words were taught to read aloud when comprehension breakdown during the reading process, it would be problematic and would make EFL students even more frustrated—struggling for word recognition as well as sounding out the words. In conclusion, vocabulary building in L1 and L2 has won a lot of attentions in reading research literature and it is a common consensus that vocabulary knowledge and reading comprehension are highly correlated. For that reason, effective instructions on vocabulary building are important in L2 reading. Similarly, effective

instructions on vocabulary building are much more crucial for EFL readers whose exposure to spoken English is limited. In other words, English teachers should provide their language learners with engaging text during vocabulary instruction and strategies related to ascertaining the meaning of unknown words, as well as general vocabulary building. All of these are part of and essential to a strong program in reading comprehension instruction.

1-2. <u>Reading instruction</u>. Speaking of English reading, the interviewees naturally refer English reading to checking vocabulary, grammar construction, or sentence structure analysis. EFL high school students spend most of their reading time and effort on looking up new words in the dictionary to find their meanings. They view English reading as acquiring vocabulary and learning about grammar and sentence structure. Few of them refer it to access to information or meaning making. For instance, when responding to the question of "how do you read when reading in English?" Most typical responses would be like Hsian's remarks:

> I will start reading by skimming unknown words in the reading text, underline or highlight them, and then look them up in the dictionary, write down their meanings, and if there are several meanings, I just choose the first one. After all the meanings are checked out, I begin to read it word by word.

Another student, Leo, has similar reading process as the above student described. Actually, this kind of reading process has been reported several times from different interviewees. Leo also said:

> Leo: Other than checking the meaning out first, I also analyze the sentence structure. My teacher taught me, after all the unknown word has been looked up in the dictionary; I should begin to analyze the sentence structure to get the meaning.
> The researcher: what do you mean by analyze the sentence structure? Can you explain more?
> Leo: I…hmm, for instance, I break the sentence into several parts according to its parts of speech. For instance, all the verbs will be circled (using hand gesture), nouns will be ( ) (using hand gesture), relative pronouns will be underlined, and [ ] (using hand gesture) are used for adjectives…something like that.

Once again, from the evidence above, we can see that English reading is taught as vocabulary decoding and grammatical analysis to most EFL students. Moreover, what strikes me the most was the responses from two students who share the similar perceptions about "a good English reader" is….

> My teacher told me that if you want to be very good at English reading, you have to start with memorizing the whole dictionary, from A to Z.

Another student agrees with him by adding that he did try to memorize the dictionary years ago with an attempt to become a good reader in English:

> My teacher told me that too. She said that all good English readers go through the process of spending time in memorizing the whole dictionary. I was actually convinced of that point, and started to memorize words in the dictionary beginning with letter A, ….but I gave up eventually, and I made it to half of A part.

The above comments so far revealed one thing. That is, to many EFL highs school students, English reading is all about vocabulary and grammar. No one mentioned or was aware of how thoughts or ideas were perceived, organized and presented in English, or how and where to locate "topic" sentence or to identify the "supporting data," etc. In other words, all of these comments above indicated that EFL students are actually not taught how to read. From my previous experience and observations of my colleagues' teaching, the typical teaching approach is: vocabulary → sentence structure or analysis → translations along with grammatical sentence analysis → some literal comprehension questions. Clearly, the way they were taught is not for reading comprehension or meaning making. Instead, their perception about English reading focused more on vocabulary and grammatical structure than meaning making or reading comprehension. This findings also echoes with Parry (1996) and Kohn's (1992) conclusions in that, Chinese EFL readers tend to use "bottom-up" strategies more than "top-down" strategies

and this tendency was closely linked to their L1 literacy tradition and their understanding of the reading process.

However, reading English in this way would only make EFLs spend more time and energy and of course, more frustration and less desire to approach English reading materials. It is no wonder that a lot of interviewees would view English reading as "time-consuming" and "tedious" and "meaningless". One interviewee, Jay, said:

> Jay: "I don't like to read in English, I don't read it other than teachers' request or assignment, To me, it's painful and very time consuming, especially when you spend time checking vocabulary out in the dictionary, and you found them with many definitions and don't know which one to choose from, and….you still don't get it even though you know every meaning of each word."
> The researcher: "so did you ask others for help regarding this?"
> Jay: "Asking for help is no use; I knew what they would answer me. Sometimes I tried to express my problems in English reading, they would say, that's the way what English reading is about, just keep going, remember, the key to be good at English is "read more, listen more, speak more, and write more" of course, I know this motto, but the problem is that, sometimes when you spend time reading, and it turns out you are not necessary understand the whole text, and it is very frustrated, and thus, sometimes I choose to give up."

Jay's comments "Asking for help is no use" points out one thing, that is, low-level support from the teachers cause a sense of helpless and loss of confidence (Gan et al., 2004). On the other hand, EFL students are blamed for not reading enough and not memorizing enough vocabulary and thus make their English reading difficult. They are constantly told that their reading problems lie in their insufficient vocabulary knowledge and the key to achieve successful comprehension is to read more, as much as possible. Thus, diligent EFL students kept memorizing vocabulary out of the context and kept forgetting what they have memorized. They kept focusing on grammatical features and ignoring meaning making in the reading process and thus kept finding that this "reading job" meaningless and laborious. Then, this kind of English learning seems going nowhere to them. It is like "Mathew effect" to them in view of the fact that

English reading is an arduous work to them and they don't have control over their learning, and as a result, they build up a psychological hindrance toward English reading, or even choose to give up as if "give-up" is the way they can control over their learning. As May said:

> I keep memorizing vocabulary and I forget them quickly, or sometimes I memorize it, when it appears in a sentence, then there is possibility that I don't know what it is.

Another case, Chu explained:

> A lot of time I feel so frustrated in reading, sometimes I spend so much time looking up vocabulary and …sometimes you don't have much time for that, so many other subjects I have to deal with in school, I would rather give up and leave it to English teacher and wait for their explanation or translation.

According to researchers in Taiwan (Cheng et al., 2004; Lu, 2004), the English threshold of known vocabulary is 3,500 for EFL students to comprehend. In other words, EFL students who possess more than 3,500 sight words would face little difficulties when reading appropriate reading text. EFL high school students in this study, if under regular schooling from elementary school to high school, should have learned at least 3500 vocabulary. Therefore, with this amount of vocabulary knowledge, English reading instruction should go beyond just vocabulary and grammar. Constantly focusing on meaningless vocabulary learning and grammar instruction does little help to EFL high school students' reading comprehension because they don't see how meaning is constructed in the text. Moreover, memorization makes students become lazy in thinking critically, in some contexts; students do not guess the meaning of an unfamiliar word even that is within their ability. According to the interactive reading model as discussed in Literature Review in Chapter Two, reading is an interactive process between a reader and the text (Grabe, 2004; Eskey, 2005). Therefore, reading strategy should be taught to make them feel the ease of reading and construct meaning from the text and willing to read more on a regular basis. One student commented that he seldom read something in English. He said:

> I seldom read something in English. I know I have to read a lot to improve my English reading comprehension. But I think my vocabulary knowledge is too less. I think I might start to read when my vocabulary is built up.

The above comment indicated that those EFL students' excuses of not reading a lot are because they have limited vocabulary knowledge. However, research said that in order to retain vocabulary, EFL students need to "meet" the words in a variety of contexts anywhere from 5-16 times. For that reason, instead of meaningless vocabulary learning out of context, EFL high school students should reading extensively to get access to vocabulary to build up their vocabulary. And one effective way to motivate them to read extensively is to teach them reading strategy to let them feel the ease when approaching to English reading materials. In addition, EFL students need to realize that English reading is not just decoding or grammatical structure analysis. As Tierney (2005) states, "...learning to read is not only learning to recognizing words, it is also learning to make sense of text."(p.51) To EFL high school students, this is especially important because reading is a valuable source for language input and it is the most cost-effective means of acquiring another language and culture (Bernhardt, 1993). Thus, reading strategy, rather than vocabulary and grammar or translation, should be emphasized in the initial stage of language learning to avoid fossilization.

Finding # 2 - *Teacher-centered approach has strengthened the habit of heavy dependence on teachers and made independent reading impossible. Meanwhile, social interaction is hardly seen in English classes.*

One fact emerging from the data is that EFL students heavily relied on language teachers' help, explanation and translation, with English reading. Based on social constructivism, the development of reading is more than a matter of linguistic and psychological processing. Instead, the social context of learning to read played an important role in the later development of reading strategies. Therefore, language learning and behaviors are socially shaped (Vygotsky, 1978) and so are English reading habit and behavior. Orasanu (1987) pointed out that the acquisition of

literacy skill normally reflects social and instructional environment in which it take place. Therefore, English teachers' reading instruction could have a tremendous impact on EFL learner's reading behaviors. For instance, most EFL high school students in this study stated that they prefer to read under English teachers' guidance of word by word translation or sentence by sentence analysis. However, detailed translation and explanation or analysis has reinforced the belief that one has to understand the precise meaning of every word and every sentence in order to comprehend the reading text. In other words, translating strategy and sentences analysis guided by English teachers only promote dependency, not autonomy to EFL high school students.

With such heavy dependence on English teachers for problem-solving in reading revealed several issues here. First, what if such resources like translation and analysis from English teachers aren't around EFL high school students anymore? Does it mean that EFL high school students will not read once they graduate from high school? Second, EFL students aren't equipped with the reading strategies for being independent readers. The consequence is, they become passively learners who lack of initiative-taking in reading for self-engagement, which is considered as an important step for language learners to acquire a language, especially in an EFL setting where exposure to English input is limited. To most EFL high school students, English reading is supposed to be "assigned" for them by English teachers. For instance, one student said:

> I never read outside of the class. I only read in the classroom. The time I spend reading English at home are mostly in the area of grammar review and memorizing vocabulary. As for reading, unless the teacher assigned us to read, I seldom read. Or, I will read only if I have a lot of time, you know, I might encounter a lot of vocabulary that need time to check them out. But I prefer teachers led us to read, through analyze and translation, then it would be more effective. In that case, you won't waste time looking up in the dictionary and the result is guaranteed.

From the statement above, it clearly demonstrated that EFL high school students were so used to passively being guided by their English teachers in the course of English reading process and were in favor of reading with English teachers instead of reading independently. It seems that they won't feel secure or efficiency when they are asked to read independently. If they do read independently, they turn to the help of the translation. One student said:

> If I have to read, I will read the translation or the Chinese version in the back first. (Note: some English reading materials in Taiwan has translation in the back of the book). In that way, I won't lose the real meaning. But most of time, I read grammar-related magazine at home.

It seems that, to them, without Chinese translation, they don't know how to read independently, and the only thing that they can do individually for improving their reading ability is rote- repetition in vocabulary memorization and grammar drill practice.

To English teachers in Taiwan, due to the great pressure of the examinations as well as parents' and schools' expectations of the college acceptance rate, they were forced to take a "direct" way to explain language discrete points, and constantly encourage their students to learn by memorization or rote-repetition. Moreover, English teachers believed that classroom activities of "teacher-centered" is the best way that would allow them to efficiently control the class time on what should be taught and covered as guided by the mandated curriculum and prescheduled term exams. The participant teacher explained after the MRSI experiment:

> I know I have to allow time and opportunities for students to negotiate and to interact one another to make English learning meaningful and interesting, but if I do so, then there would be no much time left for me, you know we, English teachers, have to cover what they need to know and learned for the exams. I have to keep reminding myself that what schools and parents want is all about the exam scores.

Clearly, English teachers in Taiwan don't have much choice in terms of making an effective instruction or interactive learning environment. What they have to do is prepare their students for mandated curriculum and examinations. Consequently and gradually, how English

teachers taught their EFL students how to read has left them the impression regarding English reading as reading by word-by-word translation and sentence-by-sentence structure analysis to get the meaning from the reading task. More than that, with English teachers' constantly thorough and detailed explanations on vocabulary and grammatical structure during the reading process has virtually given EFL students the message and indication that they are still incapable of reading alone or independently because there are still a lot of linguistic knowledge that they need to learn before to the stage of comprehension. As a result, EFL students don't have confidence in reading independently because they believe that they are still lack so much knowledge in English grammar and vocabulary to read independently and successfully. They are not aware that knowing all the vocabulary isn't equal to comprehending the text as a whole picture. What they learned is translation of each sentence, yet not the entire message of the text. They are used to passively absorbing information provided by teachers and become passive learners, which hinders successful language learning as well.

Influenced by Chinese culture for years, Confucian learning culture favors teacher-led activity in most Taiwanese classrooms. EFL students in this study were not used to the interaction with their peers and teachers. Most English teachers, according to the participating teacher, did not see social interaction as a learning tool or as imperative in building EFL students' reading comprehension. Like most teachers in Taiwan, Ms. Lin thought that teacher-directed instruction is a good way to maintain a quiet orderly class environment, especially with a large size of forty or more students in a class. In contrast to the researchers, such as Pappas (1991) and Sipe (2000), who has found positive evidence in their research regarding children's social interaction and building comprehension, the participating teacher in this study believed that minimal social interaction or little social interaction can keep students focused. Moreover, it

seems that having order in the classroom enabled teachers to teach and without this order there might have chaos. One of the interviewees, Chi stated how he usually behaved in English classes:

> Talking is not allowed in the class. We have to sit quietly with intensive note-taking. The teacher always grades our textbooks in the end of semester because she wants to see if we write down what she said in the class. The more you take notes on the margin of the textbooks, the higher grade you will get.

The above comments reveal that teaching activities in English class tend to be in the form of teacher lecturing and students note-taking. Part of EFL students' English grades is depending on the amount of notes they take in the textbooks. That is, EFL students they have to record and copy whatever English teachers teach in the class. Social interaction or discussion with teachers and peers, on the other hand, is hardly happened or never been evaluated as part of students' grade and performance.

Finding # 3 *Meaning-making is not valued in reading instruction and reading strategies taught in English classes are all about test-taking strategies.*

It is common that when reading strategies are taught in English class, they tend to be test-oriented. EFL students are trained to read in an analytical manner in noticing language features, not the content itself. As a result, EFL students draw their attention to language-based strategies. English reading to them is a process of decoding, translation, and getting the answers right rather than meaning-making. When interviewees were asked if they were taught English reading strategies before, their responses naturally refer to test-taking strategies. For example, Lin stated that she was taught to read the questions first:

> My teacher told me to read the questions first. Then go back to the reading text and find the answer out. In that case, you don't have the read the whole passage and you can score high.

And, Huai said,

> I was taught that the answer for question one is mostly in paragraph one and the answer for question two is mostly in paragraph two. And for the main idea it is often the first sentence. I think it is a very good strategy because I could get the answer right even I don't know what the passage is about. So if my parents or my classmate asked me how was the exam or what was the exam about, I always told them I don't know. But I always get the score which is not bad.

Under the pressure of test outcomes and being appreciated by schools and parents, English teachers hardly have time or energy to teach other aspects of the language but anticipated test items or content. As a result, English teachers would rather teach their EFL students how to score high in the reading comprehension test. They use teacher-directed instruction with the belief that it is the best for their students. Most of the time, they focuses on test- taking strategies such as directs EFL students to read the questions first and then go back to the text, and check if all the answers to the comprehension questions has been correctly obtained. It seems that the content of the text is not important but the right answer to each question is more important. The strictness of the teaching and learning materials and techniques can also be attributed to the entrance examinations of high schools and colleges, which are held twice per years over the past forty years. This situation encourages EFL students to read the language for testing, not for meaning construction or language acquisition.

Finding # 4 - ***Reading materials in the textbook are not interesting to most EFL students.***

With mandated national curriculum, the reading texts in the textbook are selected and compiled to best represent vocabulary and the grammatical features. This kind of reading texts is mostly organized in the order of teaching language structures and not appealing or interesting to EFL adolescents. As a result, it prevents EFL students from developing good reading habits and interests. Several interviewees revealed their desire to read something they like or are interested in, such as sports and video games for boys and fashion or celebrity for girls. They all found that reading materials in reading textbook are boring. According to Schiefele's (1999) study in

conducting motivation for reading in L1 setting, he stressed that personal interest is a significant predictor of comprehension and learning from texts. One student, Xiao, expressed that his interest in reading have declined since middle school as evidenced by the following transcript excerpt:

> I used to like reading when I was in the elementary school. The teacher in *Busiban* (the name generally referring to the private language institutes in Taiwan) guide us read a lot of funny short stories with colorful pictures on each page. At that time the vocabulary was what I can handle. But now, I have to study what I am not interested in the textbook and read it thorough for the quizzes and exams. Besides, it is so boring in the class, taking notes and drill practice.

Xiao's comment echoed Yoshimura's (2000) research findings in that students usually have an intense interests in learning at the beginning stage. But gradually, they lose interest due to the monotonous teaching methods of grammar and translation. In Xiao's case, he used to like English and enjoy reading short stories before middle school, but the situation changed as he got into secondary level, not only because of the reading materials but also the learning activities. English teachers should be aware of adolescents' growing need for autonomy that they wish they could read something like popular culture in their daily lives. When responding to the questions regarding what they like to read about, high school students all expressed similar sentiment that they want to read something related to their lives. This finding is consistent with the previous study (Hurst, 2004; Snow, 2002) as discussed in Chapter Two. Snow (2002) and Guthrie et al. (1995) all suggest that reading materials of high interest in a particular reading topic leads to high motivation, which also leads to high comprehension. Therefore, to motivate EFL high school students to read more, it is recommended that metacognitive reading strategy instruction (MRSI) combine with interesting and age-appropriate reading texts.

(2) Why Metacognitive Reading Strategy Instruction?

The previous section reveals the message that current English reading instruction in school settings in Taiwan are not teaching EFL students how to read or cultivate them appreciation toward English reading. Most EFL students are passive learners or readers with little confidence in their vocabulary and grammatical knowledge. They are dependent readers with little confidence when assigned to read independently. In addition, both language teachers and EFL students have the misconceptions regarding English reading. That is, English reading is a tool for learners to gain linguistic knowledge and is for exams that they have to encounter rather than meaning making or the resources that they can gain information from. After 10 weeks of implementing metacognitive reading strategy instruction on high school students in Taiwan, the result of this study has ascertained that metacognitive reading strategy instruction (MRSI) had benefited EFL high school students and the participating teacher in some ways.

Finding # 5- *MRSI has promoted EFL students' strategy awareness, which in turn, increased their willingness to actively participate English reading activities.*

According to Flavel's (1979) theory, metacognitive reading strategy includes two parts. One is cognitive reading strategies, that is, general reading strategies refer to prediction, questioning, clarification, and summarizations. The other one is reading strategy regulation. By regulation, it means that a reader, once familiarized himself with a series of reading strategies, knows how to use strategies strategically. In other words, a reader will constantly monitor his or her reading process, and when there is a comprehension breaks down, he or she will take actions to fix the problem. Therefore, simply knowing those reading strategies is not good enough for reading comprehension, metacognitive reading strategy instruction (MRSI) first familiarizes EFL students with a series of general reading strategies and then English teachers have to guide them and demonstrate how these reading strategies work when comprehension breaks down during the

reading process. Later, after the teacher's modeling of reading strategy use, he or she will give EFL students ample opportunities to practice this kind of reading strategy on their own. Last, the teacher divides EFL students into groups and gradually lets EFL students take control over their reading strategy uses through modeling and sharing with peers.

In the present study, after general reading strategy instruction and modeling of combined strategy use in several readings in the textbook, EFL students were able to demonstrate their improved thinking skills in English reading process. They were able to predict, to generate questions, summarize, and inference which is the most difficult part for them. As EFL students gain a sense of accomplishment or a sense of success, their self-confidence as English readers developed, so did their interests in reading not only to participate in the small group strategy practice but also to respond for the teacher and peers. The participant teacher noted:

> ...it was good to see how they start to volunteer in class to distinguish main ideas from unnecessary details. I still remember clearly that in the beginning of this study, they were not used to present themselves in front of the class, and whenever they were asked to do reading strategies in groups, they seemed unsecured. It took almost three weeks to make them "alive" in the class

One student, Yo, also commented:

> I think, after this reading program, I began to think more during reading, I don't waste my time in search of unknown words, instead, I think more about the content, and I found my thinking ability has gone beyond vocabulary and grammar, and I found English reading actually is not that hard

Another student also said:

> I like the questioning strategy, I never know I can question myself or my classmates like that, before I am always the one being questioned, I always reminded myself to well-prepared to be tested and to be questioned, it is neat, and I feel like I am in the role of teacher questioning myself. Besides, because I have to question others, so I have to really understand the reading content, or I don't know where to question about.

These responses reveal that after MRSI experiment, EFL students actually gain control over their English reading. Furthermore, with deeper mental processing, they are able to

understand the content to generate the questions, and thus in turn, they gain confidence on their own learning.

Finding # 6 - *MRSI encourages involvement and social interactions which benefit EFL students of all language proficiency levels.*

Skilled readers use reading strategies flexibly and interchangeably to construct meaning while reading (Anderson, 2001; Chamot, 2005). They understand how, where, and when to use each strategy. In contrast, poor readers may use these strategies ineffectively or in isolation. They seldom monitor their thinking while reading, and have a superficial understanding of strategy use. Therefore, by social interaction, low proficiency students would benefit a lot when they see or guided by their high proficiency peers. Many theorists believed that a metacognitive skill starts from expert-novice interaction (Baker, 2004), a view that originates in the social interaction theory of Vygotsky (1978). Therefore, modeling, dialogue, feedback, and many opportunities for practice need to be introduced into EFL classroom to help EFL students learn through an inductive approach. One of the features of MRSI, reciprocal teaching, is that it allows students to mutually share their reading experience and see how others tackle reading problems through talking and discussing. This approach enhances students' reading comprehension competence by directly engaging them with texts, especially through student-to student or teacher-to-student dialogues in the classroom (Harris, 2003). In addition, by sharing and peer modeling, EFL students of lower proficiency can benefit from seeing how others tackle the problems in the reading and how they monitor their reading comprehension successfully. Likewise, for students of higher proficiency, their self-efficacy is reinforced when they explained their thinking or try to verbalize their thinking to their peers with lower English proficiency.

In addition, this study also demonstrates the fact that EFL students are actually in favor of learning with others. For example, one student said:

> What I like most in this program is group sharing activity. Before, most of our class time was spent on seat work and note taking, and a lot of time I doze off during the class. But group work, on the other hand, it is like our show time, and we talk and discuss when we read along and share whatever come out in our mind, and it's fun to see how others' brain work.

It is apparent that EFL students like this kind of learning environment. They no longer feel reading class is boring and are willing to make full use of learning opportunities with their peers. Social interaction did play an important role in the development of using metacognitive reading strategy.

Finding # 7- *MRSI makes EFL students outgrow from rote memorization to more active learning behaviors and increase comprehension.*

When EFL high school students were doing group reading, there was evidence showing that cooperative learning facilitated active and strategic reading. Unlike typical and traditional whole-class mode, the use of small group and pair work followed the whole class discussion enhanced EFL high school students' involvement and participation. In this study, after two-week training on familiarizing general cognitive reading strategies and teacher modeling, the participant teacher, Ms. Lin, divided the class into 9 groups with assigned roles and asked them to read a short story *Mammoth* in their workbook. EFL students were using their native language, Chinese, in the discussion. As O'Malley et al. (1985) point out, native language can be a source of metacognitive reading strategy, especially it helps clarify and explain some lexical items when interact with self or peers during the reading. It appeared to me that they liked this kind of activity and some comprehension difficulties were solved while everyone in the group were attempted to comprehend and to self-regulate their learned reading strategies. The following example was recorded from classroom observation and was translated into English. There was a sentence in the reading task "*They had tusks that were very long. The tusks curled up at the ends. Mammoths used their tusks to scrape the snow off grass and plants so they could eat them."*

Student A: "They had *tusk*…*tusk* that were very long. What is *tusk*? What is *curled*? What is *scrape*? Oh, my god, so many vocabularies in just two sentences, how am I going to guess from the context?"
Student B: "I think it's something like ivory."
Student C: "I think so, too. Because…you see, *Mammoth*s used their tusks to scrape the snow off grass and plants so they could eat them. I think he must use some kind of tool and move the snow away. We know what *off* means."
Students B: "and Mammoth is a kind of animal and the tool they can use to move the snow away should be part of their body."
Student A: "so it is possible that Mammoth uses its leg to move the snow away, not ivory."
Student C: "but there are some clues that can't be refer to legs, like, *very long* and *up*"
Student A: "hmm, it makes sense. Therefore, tusk means ivory"

The above example demonstrated that, during group reading, many students applied a variety of reading strategies via small group strategy instruction and practice and tried to construct meaning from text. In this case, it appeared that EFL high school students were taking turns trying to solve the vocabulary problems, and they finished each other's thoughts and constructed meaning together. Furthermore, they challenged and supported each other's thinking. Different from their typical classroom activities, small group activity has made EFL high school students read with ease. Besides, MRSI made EFL students outgrow from rote memorization. In this case, if the language teacher or EFL students just check the meaning of "tusk" from the dictionary, then the result is that they might just forgot it weeks later.

Finding # 8- *Reading strategy journals are mirrors to individual EFL students and language teachers' clues for individuality in language learning.*

Anderson (1991) carried out a study on individual differences in reading strategy use and found that there was no single set of processing strategies that significantly contributed to reading comprehension. That is, there are no so call guaranteed strategies for guaranteed comprehension. Therefore, to be a strategic reader, EFL students need to constantly monitor their own reading process, aware their problems and modify and choose the right strategy to

solve it. Research also stresses that combined effects of cognitive and metacognitivie strategy instruction were effective in enhancing reading comprehension. Teaching just metacognitive strategies and not their connection to cognitive strategies does not seem to improve reading comprehension (Garner, 1994; O'Neil, 1992). Thus, the bridge that connects these two strategies, cognitive and metacognitive strategies, is through reading strategy journal which constantly requires EFL students to self-monitoring or self-reflect on their English reading process. One student commented on reading strategy journal:

> I think keeping a journal is a good way to monitor and remind us which strategies to use after the assigned reading. Sometimes you know a lot of strategies, but you just don't remember to use it while reading, therefore, when I keep a reading strategy journal, it's kind of forcing me to refresh my own reading process, and by rethink my reading process, I also remind myself of some strategies I forgot to use.

Research in the area of metacognitive reading strategy on L2 reading comprehension has repeatedly stressed the importance of equipping L2 readers with a list of reading strategies and letting L2 reader use it strategically during the reading process. But how? Being exposed to and using reading strategies may not ensure success in language learning (Skehan, 1989), especially if the learners do not metacognitively connect their strategies knowledge with strategy use (Vann and Abraham, 1990). Therefore, one potentially effective way of encouraging learners to notice or make connection is to have them self reflect on their own experiences while reading or learning. In addition, as everyone has his or her own learning preference, reading strategy journal can be a way for English teachers to see and know how their EFLs read. The belief that learners don't learn the same way or in a consistent manner has been stressed in the previous research, even with the same cultural background (Fu, 1995). By reading EFL students' reading strategy journal, English teachers can get some insights and know the problems of their individual EFL students.

Also, L2 reading is a lot more complex than L1 reading, not only it is linguistically and culturally demanding, but also when there is individuality being involved. Researchs like Block , Anderson, and Sarig (1987) all point out that L2 reading process has a high degree of individuality. Therefore, reading strategy journal is a good way for language teachers to detect students' individuality.

Finding # 9 - *Once secondary EFL students find English reading is rewarding and enjoyable, their motivation for reading and reading engagement boost.*

Most interviewees (85%) stated that they prefer to choose their own reading materials. However, to measure precisely the extent to which that choice of reading materials improves reading engagement, due to the limited time, is out of the scope of this study. The participating teacher identified an important turning point, she said:

> I think they really got engaged because I heard some of them discussing about forming a book club to read *Harry Potter* for this coming winter break, and some of them gather and vote for the books that they want to read, and it did surprised me because *Harry Potter* is really long, well, I don't know, I hope that they won't back out due the large vocabulary demand.

Reading engagement has been defined by Guthrie and Wigfield as, "the interplay of motivation, conceptual knowledge, strategies, and social interaction during literacy activities." (Wigfield et al., 2004, p. ix). Promoting reading engagement and reading comprehension are the central tenets on which this experiment is based. In order to attain and maintain these central tenets, there must be "support for cognitive strategies and knowledge construction during reading and support for motivational development of learners." (Wigfield et al., 2004, p.3). The result of this experiment revealed that reading engagement and comprehension could be enhanced by integrating MRSI into English classes along with self-selected reading materials. Engagement and comprehension in reading are positively linked. It is difficult for a reader to comprehend material from text without certain level of engagement and in order to be engaged in reading

there is an intersection between reading strategies and motivation. Engaged readers monitor their comprehension by asking questions. Monitoring comprehension is essential when developing in-depth knowledge. Students' growth in reading comprehension is significantly influenced by the amount of engaged reading in which they participate. Substantial evidence suggests that when teachers create an environment that supports and allows reading engagement to be extensive and fulfilling, students' reading comprehension and achievement increases (Guthrie & Cox, 2001 as cited in T. Guthrie, Wigfield et al., 2004). Moreover, through metacognitive reading strategy instruction, an interactive teaching method that can be a motivational learning factor beneficial to EFL students' literacy development. Because reading competence is embedded within the motivation construct (Alvermann, 2002; Guthrie, 2000), and because explicit strategy instruction and guide practice develop reading skill, reading strategy instruction was taught throughout the intervention, beginning with strategy instruction, teacher modeling, guide practice, and independent reading. In the post-treatment group interview, students offer various thoughts about their experience regarding metacognitive reading strategy instruction. For instance, one student stated:

> I thought it was fun, it was actually more fun than sitting in class and listening to teachers' lecture and doing boring things.

Another student commented:

> I thought it was really interesting to me because I'd never done that before by visualizing your thinking. It encourages me to do more thinking like this. Besides, I feel like to read something not in the textbook. I think I am a better reader now because I found by constantly thinking about my reading process, I understand more, and I remember the content of that article longer. It stays in my mind longer.

As the statements above, participants in the experimental groups have been inspired and found the joyfulness of English reading. To them, English class is no longer sitting there and listening to teachers' lecture or constantly jotting down information on the blackboard or

constantly being tested in each English class. They were delighted with the group sharing activity and they were happy that they can freely talk about the reading materials. And by reading together with the goal of meaning making over vocabulary checking, they think more, understand more, and feel that they are involved. And as they understand more, the content of the materials stays in their mind longer than before. EFL high school students were also be motivated and planned to read the books they are interested in.

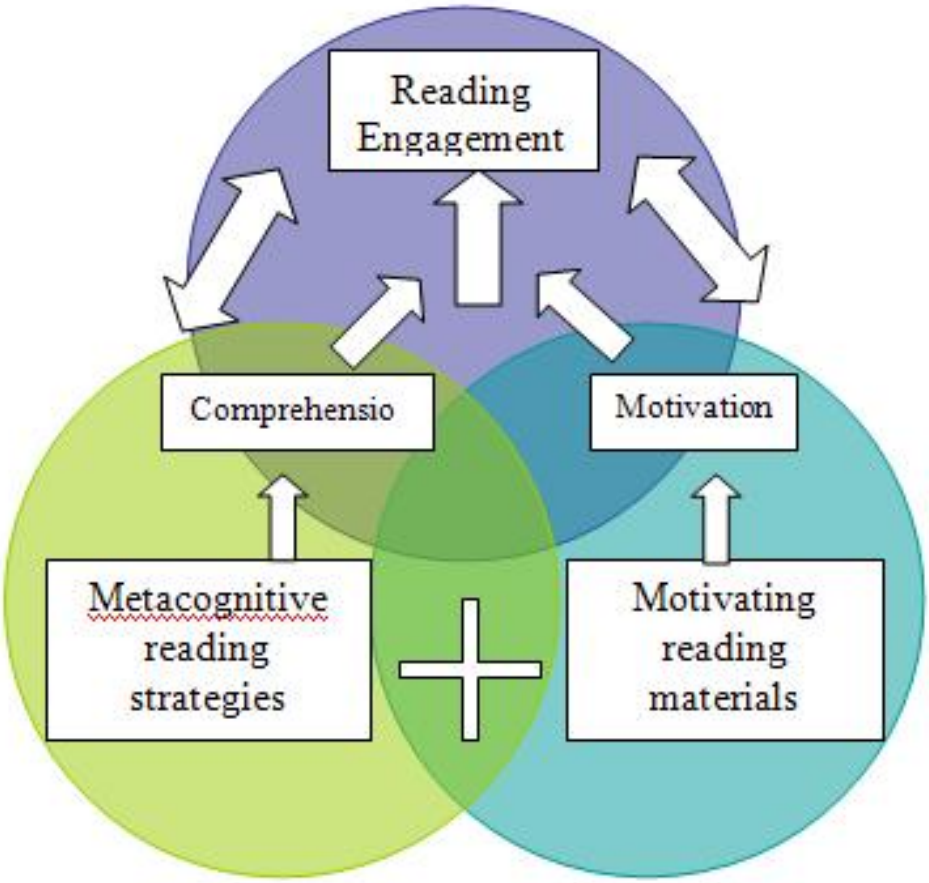


Figure 5-1. Overall relationship among MRSI, reading motivation, and reading comprehension

Conclusion

This chapter presented the qualitative findings resulting from a research study based on examining EFL students' previous reading experience and how metacognitive reading strategy

instruction (MRSI) has changed their perspectives to English reading. The research questions guiding this study phase were: 1) What are the factors bring about EFL student's reading experience? 2) What MRSI features help EFL students in changing their English reading perspectives?

Unlike children who depend mostly on adults and thus try to act to please their teachers, adolescent students are in the critical human development stage that they increasingly seek to exercise some control over their circumstances. In that case, if teenagers are unable to gain control over language learning, then there is a chance that they might choose to give up the reading task and "giving-up" is the way that they could control. This phenomenon is evident by several interviewees' responses in the study. Moreover, as shown in the interview data, EFL high school students in this study were all aware of their English reading problems or difficulties, they seemed to lack of a strategic plan to overcome these obstacles in English reading. Therefore, awareness of which reading strategies to use and the ability to select appropriate strategies depending on the problems encountered during reading are the goals of this study.

After 10-week of metacognitive reading strategy instruction, EFL high school students expressed their positive reaction toward the intervention. They are a lot more confident than before when approaching English reading and willing to engage more reading during the winter break. One of them even mentioned that she would like make use of metacognition to other subject areas. In addition, the participating teacher was also influenced by metacognitive reading strategy instruction and further made her reconsider her teaching approaches. This empirical study suggests that when EFL students receive explicit instruction in metacognitive reading strategy, their get more positive attitudes on English reading and their reading comprehension get better. Based on the above information, I construct the following model to illustrate the impact of

metacognitive reading strategy instruction on EFL high school students' English reading. (Figure 5-2)

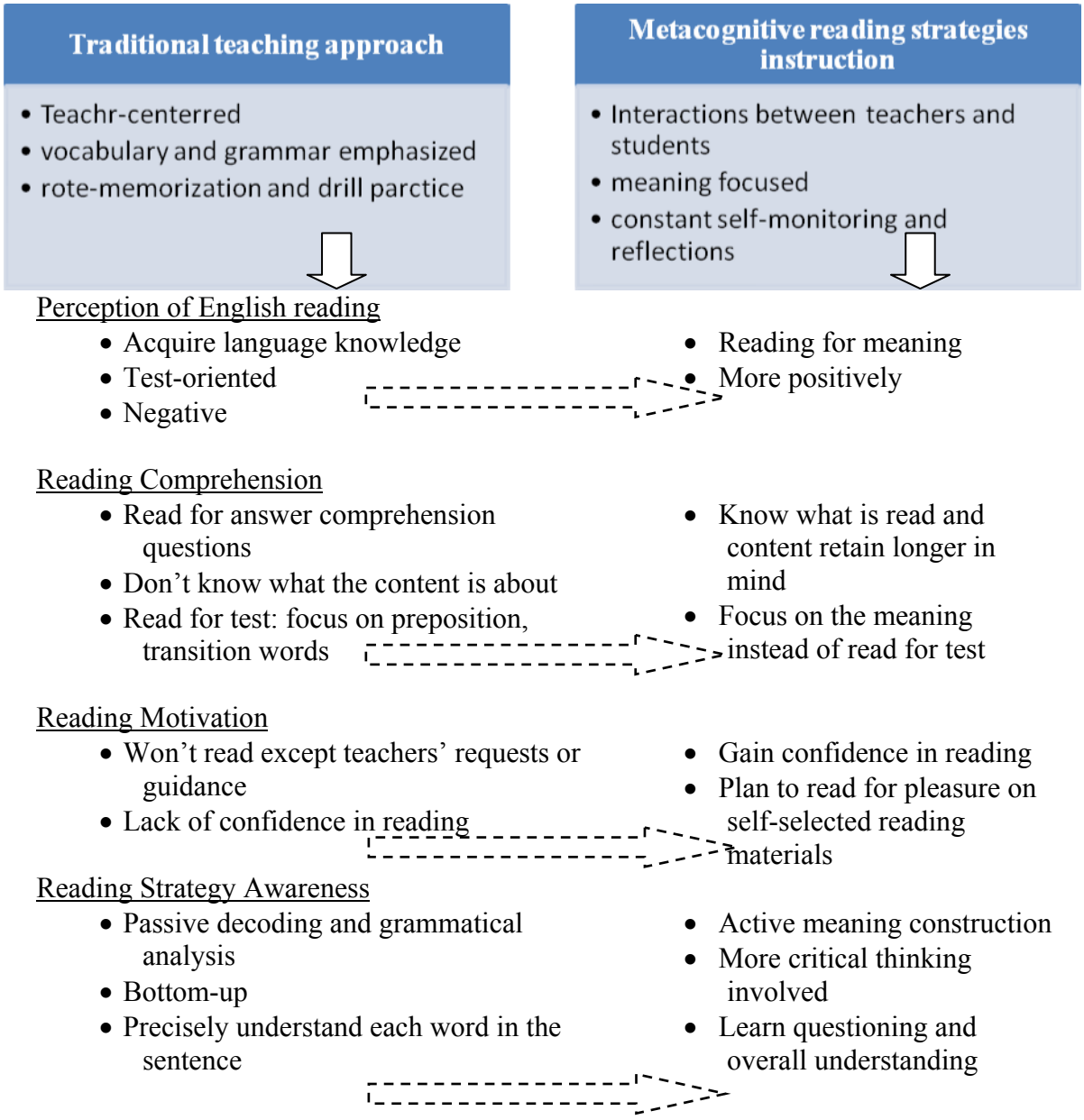


Figure 5-2. The impact of metacognitive reading strategy instruction on the change of EFL adolescents' reading comprehension, reading motivation, and reading strategy awareness

CHAPTER SIX
DISCUSSION AND CONCLUSION

Overview of the study

This study was designed to investigate the effect and influence of metacognitive reading strategy instruction on high school EFL students' reading comprehension, reading motivation, and reading strategy awareness. The theoretical framework for the study has been established by the review of relevant literature in Chapter Two. In Chapter Two, literature review indicated that it is hard to draw generalizations across studies because of the large variations in the way metacognitive reading strategies have been employed. Therefore, this study is viewed as explanatory in the field of metacognition in EFL reading process. In this study, an explanatory sequential mixed method research design was conducted. That is, this study first implemented an experimental design and followed up with small groups interviews. In the experimental phase, there was a control group and experimental group randomly selected from the whole 11th grade in a public high school in southern Taiwan and were randomly assigned to the experimental and control group. In total, there were 110 high school students participated and completed in the study with 56 students in the experimental group and 54 in the control group. Three measurements were administered at the beginning of the school year and the sample was statistically ascertained that these two groups were similar before the experiment. In other words, no preexisting difference between these two groups were found in terms of their English reading proficiency, reading motivation, and reading strategy awareness.

The experiment lasted a 10-week period class consisting of 50 minutes of metacognitive reading strategy instruction (MRSI for short) per section. Instructional time for the reading strategy instruction was allocated in the nap time from 12:30 pm to 1:20 pm and two times a week. Participants were all taught with general reading strategies (word attack, summarizing,

questioning, and predicting). Moreover, the experimental group was given metacognitive reading strategy instruction with a focus on consciousness raising and self-monitoring during the participants' reading processes in the study period. On the other hand, for the control group, they didn't receive the training on "metacognition" in their English reading processes. I worked with the participant teacher and co-planned the activities for the instruction. In the 10^{th} week, three posttests were administered to all the subjects in the control and the experimental group to investigate the effectiveness of metacognitive reading strategy instruction on EFL high school students' reading comprehension, reading motivation, and reading strategies awareness. In the end of study, I also interviewed 24 students from the experimental group with an intention to understand their English reading experience and how their English reading attitudes changed through MRSI intervention.

This chapter will first start with the findings of the quantitative data and later qualitative data. Then discussion regarding this study will be presented later.

Quantitative Findings

In quantitative analysis, ANCOVA was used to test four research hypotheses H_{01} to H_{04} with the pretest score GEPT representing as a covariate while three posttest scores representing as dependent variables. The findings of each null hypothesis are briefly presented in the following order.

H_{01} Reading comprehension will be the same for high school students with metacognitive reading strategy instruction with those without metacognitive reading strategy training.

As shown in the quantitative results in Chapter Four, this hypothesis was rejected because there was a significant effect of treatment on post reading comprehension test. ($F = 88.83$, $p<.05$, $df=107$). This result was also consistent with empirical evidence that supports the implementation of metacognitive reading strategy instruction on improving reading

comprehension in both L1 and L2 reading research (Anderson, 1991; Dole, Brown, & Teathen, 1996; Salataci & Akyle, 2002; Song, 1998; Loranger, 1997; Brown and Palincsar; 1985). In addition, a multiple regression analysis indicated that the treatment, metacognitive reading strategy instruction, has an effect on all language proficiency levels. In other words, metacognitive reading strategy instruction could increase EFL high school students' reading comprehension, regardless their English proficiency levels. In summary, after 10-week MRSI training, the experimental group outperformed the control group in English reading comprehension.

H_{02} Motivation to reading English will be the same for high school students with metacognitive reading strategies training with those without metacognitive reading strategies training.

The quantitative data related to this perspective was collected via Mori's (2002) *English Reading Motivation Questionnaire (ERMQ)*. This questionnaire was administered two times as pre- and post- ERMQ. The quantitative data analysis demonstrated that significant difference was found for the post-*English Reading Motivation Questionnaire* ($F=17.187$, $p<.05$, $df=107$) regarding EFL students' motivation toward English reading after metacognitive reading strategies instruction. In other words, the treatment of metacognitive reading strategy instruction did make a significant difference between two groups in terms of their English reading motivation, especially in the subtests of the intrinsic motivation and reading efficacy. Even though research has advised the implementation of metacognitive reading strategy instruction in improving students' reading ability, few empirical studies have been conducted in an L2 context to examine the effects of metacognitive reading strategy instruction on reading motivation in the EFL context. To be specific, as the data indicate, the participants in the experimental group gained higher score in two subtests: 1) intrinsic reading motivation, and 2) reading efficacy. In other words, the EFL high school students were more motivated than before and they were more

confident regarding English reading. The findings of this study provided empirical support for the positive impact of metacognitive reading strategy instruction on EFL high school students' motivation toward reading in English.

H_{03} Perception about reading strategies will be the same for high school students with metacognitive reading strategies training with those without metacognitive reading strategies training.

The quantitative data related to this perspective was collected via Mokhtari & Sheorey (2002) *Survey of Reading Strategy questionnaire* (SORS) and the questionnaire was administered two times as pre- and post - SORS. The quantitative data analysis demonstrated that significant difference was found in post- *Survey of Reading Strategy questionnaire* ($F=10.28$, $p<.05$, $df=107$) regarding EFL students' reading strategies awareness in English reading after metacognitive reading strategy instruction. Similarly, the significant differences were found in the subtest in Global reading strategy and Supportive reading strategy. As metacongnitive reading strategy instruction expected EFL students to have a whole understanding of a reading task by questioning and summarizing, EFL high school students think more than before and thus their scores in Global reading strategy (GLOB) section were higher than before. Besides, group sharing and interaction were encouraged in metacognitive reading strategy instruction, EFL students have a positive learning environment and thus their score in Supportive reading strategy section (SUP) was higher than pretreatment. In summary, the treatment, the metacognitive reading strategy instruction (MRSI) has effects on global reading strategies and supportive reading strategies. And this result indicating that, by integrating the metacognitive reading strategy instruction (MRSI) into English reading classes, EFL high school students were involved in the reading activities through cooperative and group learning activities and they think more and deeper while reading.

H_{04} The effect of metacognitive strategy training will be larger for students with lower language competence.

Previous research has found that metacognitive reading strategy benefit more for students with lower English proficiency levels (Cordero-Ponce, 2000; Kern, 1989; Jimenez and Games, 1996; Song, 1998). The results of interaction of treatment by various language abilities were not at a significant level on each dependent variable. Therefore, there was no enough evidence to accept this hypothesis. In other words, the effect of treatment didn't make a significant difference on diverse reading abilities. That is to say, metacognitive reading strategy instruction (MRSI) has similar effect on EFL high school students of different language proficient levels in this study. In other words, regardless of their diverse language proficiency levels, metacognitive reading strategy instruction (MRSI) can actually help all of the EFL secondary students of varied language proficiency levels. Different from their traditional English learning and teaching climate, EFL students of all proficiency levels profited from this instruction because they were able to explore different reading strategies, evaluate reading strategy effectiveness, and eventually choose their own set of effective reading strategies according to their own learning styles and thus EFLs have almost equally amount of improvement in terms of their English reading comprehension, reading strategy awareness, and English reading motivation.

Qualitative Findings

The qualitative data analysis revealed abundant information regarding EFL high school students' previous reading experience and its effect on their reading processes. The findings told us that EFL high school students' reading experiences were closely related to the classroom environment (Day and Banford, 1998) as well as the teaching methods and focus, especially in an EFL context where language input and exposure to reading are limited (Yoshimura, 2000).

Such past reading experiences had not only influenced EFL students' English reading behavior, but also their attitudes towards English reading. Qualitative data indicated that English education in Taiwan mostly consists of the following characteristics: test-oriented, grammar and vocabulary are stressed, and teacher-centered. For instance, the qualitative data indicated that EFL high school students' English teachers spend time focusing on linguistic knowledge-translation and grammatical analysis. Therefore, this kind of word-by-word translation and sentence-by-sentence analysis have influenced on EFL high school students' English reading habits. A typical routine for an English reading class in Taiwan is like this: 1) EFL students pick out the unknown words first, check the meaning out in a dictionary, then go back to the reading text.; 2) then they begin to analyze sentence structure, circling all the subjects and verbs, underlining adjectives and adverbs, highlighting preposition or prepositional phrases; and then 3) they begin to read with clues from translation and grammatical structures. After reading, the language teacher asks several literal comprehension questions to ensure that EFL students understand the content. No further actions, such as probing deeper meaning construction or critical thinking skills such as "how do you know" and "why," were involved. As a result, English reading habits like this have directed EFL high school students to read on a word-by-word basis at the expense of the broader understanding of the content of the material they are reading. English reading, to most EFL high school students, is "time -consuming" and "laborious "process, and thus the hold negative attitude toward English reading. As EFL students progress through school, with the increasing amount of reading content and vocabulary as well as increasingly complicated sentence structures, EFL students begin to struggle with the demanding English reading text and gradually lost interest in reading.

However, as data revealed, some EFL high school students were actually aware of their English reading problems and difficulties, but they seemed to lack a strategic plan to overcome those reading obstacles; they also blamed themselves for not having enough vocabulary and grammatical knowledge. Furthermore, data also revealed that a lot of factors seemed to discourage EFL high school students from reading with joy and independent reading. In addition to the ineffective reading strategies, there was evidence of other factors that bring about EFL students' English reading. For instance, English teachers' instruction methods, test-oriented instruction, teacher-centered approach, and boring reading materials. Metacognitive reading strategy instruction (MRSI) is a teaching approach which stresses explicit reading strategy instruction, teacher modeling, small group interaction, and journal reflection. This research proved that MRSI can offer EFL high school students with positive experiences toward English reading in English classes. It is also delightful, after the experiment, to find that most EFL students gained confidence toward their reading process. They felt that they had more control over their reading, and their reading motivation increased. As they were motivated, they were willing to try further processes outside of a classroom setting. For instance, at the end of the study, they were planning to read something together outside of the class. MRSI helped EFL students develop confidence and efficacy in reading, thus impacting their reading motivation so they engaged more reading.

Moreover, qualitative results from this study indicated that real world interaction and interesting texts promote active student engagement in the English reading process. For example, at the outset of the experiment, the participants in this study were initially not comfortable in asking each other questions and answering each other's questions and especially uncomfortable with questioning their peers or speaking out loud about their thinking for sharing. As the

experiment progressed over 10 week period, EFL high school students gradually demonstrated a noticeable difference in their comfort. They were more involved and gained confidence in sharing reading strategies they used in all the assigned reading. Therefore, the findings suggest that teachers in the field of language teaching should reconsider traditional teacher-centered instruction which has been isolated from real learning and positive experience, and increase students' interaction in the classroom.

In conclusion, learning builds on experience and learning is internally motivated, task- and problem-centered (Vygostky, 1978). Results from the interview data after the experiment reveal that MRSI increased EFL students' productivity, increased students' motivation, decreased students frustration, and increase higher retention rates, when self-reflection reading activity is allowed. This study adds to the growing body of literature suggesting that metacognitive reading strategy instruction (MRSI) can increase not only secondary EFL students' reading comprehension, but also transform them to be more motivated and more engaged in English reading.

Discussion

This section examines my findings within the context of the current literature on metacognitive reading strategy instruction. I begin by discussing the areas of my findings that are slightly different from the research in EFL reading comprehension instruction. I then reexamine the major features of MRSI presented in Chapter Two and discuss where my findings are situated within the context of the MRSI literature. I also reflect the lesson I learned in this study and present my recommendations for improvement if the intervention should be replicated. This chapter closes with limitations of the study and ongoing questions for future research.

Findings in the Context of the Literature

1. ***Metacognitive reading strategy instruction increased the reading achievement of secondary EFL students over a short period of time.***

While existing research says that metacognitive reading strategy instruction takes long time to influence students' reading comprehension (Block, 2002), my findings show that explicit instruction in metacognitive reading strategy instruction over a 10-week period can also increase secondary EFL learners' reading comprehension. In addition to measureable gains on their pre/post reading comprehension assessment, EFL students in this study were able to show the evidence of their increasing metacognitive strategy awareness as the study went on. It has been conventional belief that such changes in a short period of time are unlikely. This study had a different result. In two and half months of MRSI intervention, this study demonstrated a statistical difference in reading comprehension of most secondary EFL students, regardless of their L2 language proficiency. Moreover, it was skeptical that MRSI could improve EFL students reading engagement or motivation in the first place, but this study revealed that once EFL students are able to take over their learning process and when English reading to them is no longer decoding and sentence structure analysis, they are actually willing to engage themselves into the reading materials of their individual interests.

2. ***Metacognitive reading strategy instruction has positive effect on EFL students of difference proficiency levels.***

Metacongitive reading strategy instruction stresses familiarizing EFL students with a list of different reading strategies through teachers' explicit explanation of their importance, teacher modeling and planning, comprehension monitoring, and effectiveness evaluation based on different reading task and individual needs because differences in strategy use vary according to the tasks and language proficiency (Chamat, 2004; 2005; Cohen, 2003). In other words, metacogntion is the awareness that EFL students choose their own set of reading strategies to

cope with their diverse reading problems. As a result, regardless of their difference proficiency levels, EFL students all demonstrated improving scores on their reading comprehension, reading awareness, and reading motivation after they learned how to self-reflect and to self-evaluate their reading process.

3. Metacognitive reading strategy instruction also has positive effect on language teachers.

Very little research exists that explain how language teachers learn about how to teach metacognitive reading strategy instruction in their teacher preparation programs. Studies in L1 language shows that teachers struggle with this abstract concept and have difficulty providing instruction in this area (Block and Pressley, 2002). However, Oxford et al. (1990) claimed that the metacognitive reading strategy instruction (MRSI) training has some positive effects on teachers:

> Teachers who use strategy training often become enthusiastic about their roles as facilitators of classroom learning. Strategy training makes them more learner oriented and more aware of their students needs. Teachers also begin to scrutinize how their teaching techniques relate or fail to relate to their students' learning strategies and sometimes teachers choose to alter their instructional patterns as a result of such scrutiny (Oxford et al., 1990., p. 210)

Data from this study revealed that, the participant teacher, despite the fact that there was only one evidence in the data, has begun to aware of and rethink her own teaching approaches as a result of this study. As Ms. Lin said:

> I realized that I had a very superficial understanding of "metacognition", what it really means and how to implement it into my teaching, I remembered I read it in textbooks, heard about it in psychological class, maybe, back in college, but I never know students need this knowledge in order to be actively involved in their own learning. After all, they are the ones who have the responsibility of their learning and who…suffer under educational pressure (laughing), …I think I know, as least, I know I should challenge students' thinking more instead of asking them passively to memorize whatever in the textbook and whatever I taught. Now, I think a real language teacher should not only teach linguistic aspect knowledge but teach language learners how to learn and explore more on their own.

In this study, Ms. Lin showed her personal growth in terms of metacognition in reading strategies at the end of the study, and this point is important to L2 reading research. Now that language learning and teaching is socially shaped (Vygostky, 1978), when language teachers' self knowledge and perceptions change, improvement in their ESL/EFL students in terms of reading skills, reading comprehension, and reading motivation can be expected.

4. Metacognitive reading strategy instruction should be integrated into language classroom.

There are issues of whether strategy instruction should be integrated into and taught concurrently with the language course, or whether to provide a separate "how to learn" course independent of the language course (Chamot, 2005). Although the studies reviewed in chapter two all included strategy instruction as part of language class, it has been argued that strategies taught in a language class are less likely to transfer to other tasks and that it may not be practical to prepare all language teachers to teach strategies (Gu, 1996). This study reveals evidence that if reading strategy instruction is integrated into a regular EFL classroom, there is possibility for EFL students to transfer "metacognition" to other subject areas. One female student commented in the interview saying that she felt "metacognition" helps the reading content she read stay longer in her mind (that is higher retention) and she said she planned to use "metacognition" with other subjects. Despite the fact that only one such comment appeared in all interviewees and might not be representative and hardly be generalized to the whole population; however, as the students being interviewed were relatively small in this study, such evidence also demonstrated that there still stands a chance that "metacognition" can help EFL students in other learning process as well.

Reexamine Key Features of MRSI

As previous discussed, four findings of this study provide evidence for existing L2 research on EFL learners' reading and the findings about the core features of MRSI that confirmed existing L2 reading research. In Chapter Two, I discuss the major features of MRSI is reciprocal teaching, peer sharing, self-reflection and self evaluation. Through group learning, EFL students gradually take responsibilities on their own learning. Moreover, MRSI offers EFL students opportunities to monitor and self-reflect on their reading practice by examining the effectiveness of their strategies. In this following section, I reexamine each of these key features of MRSI in the context of my findings.

1. Dialogues between teachers and students

This study was also conducted within the framework of social constructivism, a theory of learning theory, which emphasizes that students must interact with new concepts or new learned skills in both the physical and social world in order to make meaning and understand others as well as being understood (Fosnot, 1996). Constructivism is not a teaching method but an educational theory that encourages questioning, problem generating, and problem solving. That is, constructivist teachers design tasks and learning environment that allow students to question, internalize and reshape, or transform new information (Brooks & Brooks, 1993). According to Vygotsky's theory, certain metacognitive actions, such as monitoring one's own learning along with all higher-order cognitive functions, such as analyzing and synthesizing, are internalizing through social interactions with more competence adults or peers who provide the learner with scaffolding, that is, assistance that is gradually removed when no longer needed by the increasing independent learner. EFL high school students commented that they like MRSI, especially group sharing and group work, better than just seat work. Under an encouraging and supportive

learning atmosphere, EFL students gained positive experience in helping others, self-growth, and as independent learners.

2. Monitoring and Reflection

Both language teachers and EFL high school students should spend some time to pause and reflect on their own teaching or learning process. Reflection can help EFL students generate questions from their reading experience, monitor effectiveness of the strategies used, and result in modification of certain strategies. Metocognitive reading strategy instruction (MRSI) encourages EFL high school students to constantly reflect on and examine their own reading process through reading strategy journal keeping and peer sharing. Engaging constantly in active reflection process provides the very foundation of thinking and learning, either for English teachers to reexamine their teaching instruction or for EFL students to experience their learning situations.

Lessons Learned in this Study

1. EFL students prefer more interactions than seat work

Constructivists philosophy has asserted that learning is an active, ongoing and meaning-making process through which students are able to construct their own knowledge based on their current or prior experiences (Brunner, 1986). Principles of cooperative learning as a model of teaching are suggested to enhance intellectual discovery, particularly as related to "metacognition" in reading strategies. In the interview, EFL high school students all agreed that they enjoyed a lot in metacognitive reading strategy instruction not only because it was novel to them but it was learners-centered. They mentioned that they appreciated the opportunity to work together with their classmates, they were happy to see how their peers solve problems, find the main ideas, guess meanings of unknown words, question and summarize. As Huang explained:

> It was a great time to get into groups with our friends and talk about things in the reading and think. We have never had the chance to do it before, a lot of class time is devoted to teacher lecturing as well as endless note-taking and quizzes. I know that our teacher works very hard, before she always, like "quick, let's hurry up, we have to cover this and that because term exam is coming, and time is running out,"

Harrison (2002) argues that collaborative pair and group work is a valuable turn point step in shifting from the teacher as "expert" during the "modeling" phase to the point at which learners are able to use the strategies independently (Harris and Grenfell, 2004). The importance of a social community in which meanings are constructed together and reading strategy are shared, is also underlined in L2 studies by Donato and McCormick (1994) and Lehtonen (2000). Moreover, collaboration is a key element in creating and sustaining group motivation (see Dörnyei & Csizer, 1998). Takeuchi, Griffith, and Colye (2007) maintain that language teachers should set the language classrooms as strategic learning communities where learners will be encouraged to make a maximum use of different reading strategies.

2. The need for language teachers' professional development

In order to control for the teacher effect of the experiment, I, as a researcher, avoided being the teacher of the experimental group and invited Ms. Lin as my co-investigator. For that reason, I had to share and explain to her how the experimental procedure should go. I designed all the materials, set the schedule and explained the reading strategies thoroughly, and how they should be taught and modeled to the participant EFL students. While I was trying to plan the whole reading instruction program with the participant teacher at the beginning of the experiment, she asked me:

> Metacognition is a very abstract concept to me, let alone teach my students. How am I going to model this to the students? What do you mean by "think about thinking?" I have heard this idea a lot in college. How are you going to explain to students that? How are you going to make it "concrete to EFL students? I personally, being honest, really don't know what it is, how am I going to teacher them to use it?"

From this response, I realize that some language teachers are not really having sound foundation or knowledge base about metacognitive reading strategy instruction. Thus, language teachers should be trained in strategy instruction and how to implement strategy instruction inside their classrooms. Also, there is a need for and policy makers or administers to offer learning opportunities to language teachers, such as workshops. Only when they have command of their knowledge with regard to metacognitive reading strategy would they know how to teach it to their EFL students.

3. Let EFL learners choose their own reading materials

The EFL students interviewed all preferred to read what they want to read. They all agreed that the reading materials in the textbook were not interesting and longed to read something related to fashion, pop culture, life, experiences, or whatever was in their area of interest. This study, due to the time constraint, failed to offer EFL high school students' opportunities to select their own reading materials. However, according to the participant teacher of the experimental group, she overheard several groups of students considering forming an English reading club over the winter break. We are not sure whether "MRSI" inspired them to form book clubs or if it was due to the joyful feelings gained from "reading discussion" in this study that motivated them to do further reading activities. Though the outcome was left unexplored, the students' plans still offer insight for language teachers that reading materials used in the class are really important, as they might reduce or increase EFL students' reading motivation. This point is also consistent with the previous study conducted by Snow (2002) and Hurst (2004) that reading materials of high interest in a particular topic leads to high motivation and thus lead to high comprehension.

4. Individual learning styles, preference, or learner resistance

One of the interviewees in the experimental group commented that he didn't think the reading strategies taught in the class was helpful to him. When the researcher asked further about

how he read, he just answered, “I have my own way of reading”, and he refused to reveal anything more. Obviously, there was a sign of learner resistance in this MRSI experiment. The reason behind this might be that there was a mismatch between the goals and expectations on the parts of the teacher and the student. Canagarajah (1993) and Tsang (1999, cited in Huang, 2006) investigated the issue of learner resistance in different socio-cultural and political contexts and both identified a link between resistance and product-oriented learning. Tseng’s (1999, cited in Huang, 2006) study also suggests that reflective learning might not be well received by learners in an examination-oriented educational system because learners did not feel the type of autonomy offered to them would bring about any favorable changes in their learning or they didn’t ask for autonomy but for short-term visible results. In addition to learner resistance, there might be the possibility of individual learning styles or preferences. It could be that the resistant students might not have found the reading strategies taught in the study helpful in meeting their goals or needs. Therefore, language teachers should be aware of EFL students’ individual learning styles or preferences before and during metacognitive reading strategy instruction implementation (Anderson, 2002; Ethman, Leaver, & Oxford, 2003)

Limitations and Recommendations for Future Research

As I was trying to interpret the results of quantitative and qualitative data, several questions and doubts came into my mind, which could be the directions for future research. Also, some limitations of this study need to be addressed. First, since this study was conducted in southern Taiwan with adolescent EFL students, it is hard to determine whether the results obtained from the study can be generalized to ESL context in other countries, whether in the USA or elsewhere around the world. Even though it was a significant challenge for me to seek permission from school and administrators, teachers, parents, and students consent for this study, research of this kind is necessary to the field to study the effects of metacognition reading

strategy instruction on real students and future studies can expand across sections with ESL or EFL learners or language teachers of various native languages.

Second, secondary EFL students' L1 literacy skills were not examined in this study. However, research literature (Alderson, 1984; Bernhardt, 2005; Clarke, 1979; Koda, 2007) in the L2 reading field has pointed out that there is a transfer and interaction effect of ESL or EFL learners' L1 literacy skill on L2 reading skills, and this unexplored area in this study- EFL students' L1 literacy skill- thus leaves a question mark about whether L1 reading strategies or reading skills transfer to or interfere with L2 reading, as what current research on bilingual populations shows (Lindsey, Manis, and Bailey, 2003; Alderson, 1984). Therefore, another possible direction for future research could use a more comprehensive model including both L1 literacy levels and L1 reading strategies and L2 proficiency level and L2 reading strategies in order to explore the differential roles of L1 and L2 in predicting L2 reading comprehension.

Third, as the existing literature has shown, most studies on MRSI used statistical method in investigating its effectiveness on reading comprehension. Only few studies regarding metacognitive reading strategy instruction on reading comprehension of ESL/EFL were qualitative-oriented (Jiménez, 1997). Therefore, more qualitative research on this aspect is needed in this field. Despite little evidence in this study, there existed facts of individual differences (such as individual learning styles and reading strategy transfer), which can only be examined through qualitative methods. Therefore, further research of this kind should incorporate case study and ethnographic methods to get better insight of overall findings for groups of learners and the effect on individuals within the groups.

Fourth, more attention should be paid to language teachers' professional development on the training of metacognitive reading strategy instruction. Meanwhile, more research should also

be done so that administers and policy makers acknowledge that it is necessary to form effective learning communities in a professional climate and further provide supports to language teachers in the implementation of metacognitive reading strategy model.

Fifth, time is a limiting factor in conducting research in public school classrooms. With mandated curriculum and the pressure to pass the college entrance exams, language teachers have limited time to freely teach students what they think might help students in language learning. Also, whether there would be a positive outcome when EFL students are giving opportunities to choose or read what they want to read based on their interest was unable to be covered.

Sixth, whether this kind of metacognitive reading strategy instruction (MRSI) has a long-lasting effect on secondary EFL students' English reading process is left unknown, either. Research reviewed in Chapter Two has indicated that cognitive reading strategy has a short-term effect while metacognitive reading strategy instruction has a long-term effect on students' reading achievement. Therefore, future longitudinal research, such as delayed post-test or follow-up questionnaires, on metacognitive reading strategy instruction and its effect on language learners' reading comprehension and reading motivation are desired.

Finally, a true experiment faces a lot of challenges, especially when an experimental research is conducted in public schools. As I did my best to control for the external validity of this experiment, I failed to control for its internal validity, that is, the instructors of the experimental and control group were different. Therefore, future research conducting this kind of experiment should try to take the internal and external validity in terms of the instructors into consideration.

Pedagogical Implications

This research study has helped highlight some important pedagogical values for EFL teachers and EFL students. Carrell (1998) explains that skilled readers "learn how to do this complex thing we call reading by doing it repeatedly, over long periods of time, with a lot of different text, and lot of different opportunities to practice applying strategies, and monitoring their process and evaluating the effectiveness of different strategies for themselves in different reading situation." (p.17). Training on this aspect should be a long term project for EFL students to become conscious of the reading strategies and use them independently based on their personal learning preference and needs.

1. Values for language teachers

It is a fact that each learner within the same classroom may have different learning styles and varied awareness of the use of strategies. The more the language teachers learn about EFL students' individual difference, the more the language teachers gain a sense of how many different ways they can understand the complex system of language learning and teaching (Ehrman et al., 2003). Just as Cohen (2007) and Macaro (2001) put it, only when the language teachers know what strategies students are using and how they are using them in different contexts, can they better understand the sources of EFL students' problems with reading strategies and be able to decide on students' learning needs and adjust teaching procedures accordingly. Therefore, language teacher are suggested to reflect on their instruction and to learn which strategies their students' use. Sometimes language teachers are not aware of or are mistaken about their students' use or preferred use of reading strategies. Uncovering information about their students strategies use may provide some useful insight for language teachers to change or modify the way they plan, teach and interact in a timely manner with students. This point is particularly important for language teachers with large-size classrooms. With a large-size

class, English teachers might not have time to discuss each student's reading strategies uses. Instead, language teachers can ask their students to keep journals to reflect either on the reading content or reading strategy that used or even how they solve their reading problems encountered in the reading process. Reading their journals offer language teachers insight as to how their students read. In addition, teachers' written comments on reading strategy journals not only give EFL students encouragement on strategy use but also offer them motivation to continue explore more reading strategies. Moreover, this kind of one-to-one written communication, in addition to respecting individual diversity, also help EFL students receive appropriate support for diverse learning styles. Reading strategy journals provide access to the often-hidden processes that EFL learners use to accomplish their reading goals.

What is more, metacognition can be integrated into even the earliest stages of reading instruction (Clay, 1991). Providing children with instruction in metacognition and comprehension-monitoring before they are fluent readers can help them develop ways of responding to text that will serve them well in future reading endeavors (Baker, 2005). Teachers should also be aware that rote or drill practice and memorization skills will keep students from developing cognitive skills such as problem solving, critical thinking, and effective communicate. If students are denied the opportunities to develop such advanced skill, it will place them in an increasing disadvantage group in the changing economy of the 21st century. Exam-oriented instruction will be trading long-term benefits to EFL students for short-term gains on standardized tests. If EFL students are motivated to read more, then their language ability will improve and thus they will do well on all kinds of exams. The implications for teaching are that EFL high school students need to explore different reading strategies, experimenting and evaluating their effectiveness, and eventually choosing their own set of effective strategies,

according to their individual needs. In addition, all EFL readers can profit from learning how to use metacognitive strategies to plan, monitor, and evaluate themselves throughout their reading process.

Another key aspect of metacognitive reading strategies is the ability to facilitate transfer and promote greater learner autonomy. Research in L1 settings has shown that strategy transfer is often difficult, but that explicit instruction and the development of metacognitive awareness promote strategy transfer (Chomat, 2004, 2005; Cohen, 2003; Harrison, 2002). Even though there is limited research on transfer of strategies in second language setting, but the qualitative data in this study, despite only one in number, revealed the evidence of the possible strategy transfer to other learning tasks from one of the interviewees, and this instance provided insights for language teachers to realize the important role of metacognition in EFL readers' learning processes.

Studies on both L1 and L2 learning have consequently placed increasing emphasis on developing metacognitive understanding rather than simply teaching discrete cognitive strategies (Harris & Grenfell, 2004). Because there are differences in learners' style and preferences, it is necessary for language teachers to be aware that not all the reading strategies fit all EFL students. Instead, promoting metacognition in strategies employment and allowing language learners to figure out the most effective ones for them is the best. Harrison (2002) further summarizes the research evidence that learners who have a conscious awareness and conscious control over their learning strategies can apply that knowledge in new learning contexts and learn more than those who have not been taught any strategies. English teachers' roles consist in not only teaching EFL students language and culture, but teaching them how to approach English reading tasks in and out of the classroom. The information and result of reading strategies in this study will prove

very useful for language teachers who want to help their EFL students become more independent and empowered learners. When EFL students engage in reflecting upon their reading strategies they become better prepared to make conscious decisions about what they can do to improve their learning in terms of reading. Strong metacongitive skills empower learners. This empowerment not only improves English learning but also transfers to other aspects of EFL students' performance and lives.

2. Values for EFL students

The value in making metacognitive reading strategies known to EFL students consists in that it can help facilitate their positive English reading experience and gain control over their own learning. Reading strategy journals, part of the experiment of this study, provide a written record and give EFL students opportunities to think about how they perceive their own reading processes. Reflection on how they read gives them more awareness, which lead to more control over their learning. The strategies the readers used often depend on their age, personality, preferred leaning styles or purpose for reading. By keeping reading strategy journals, they are encouraged to think about which kinds of strategies they use more often and to perhaps consider adding new strategies or rarely used strategies to their repertoires as they become more aware of other ways to deal with a text. Through constant reflection can increase EFL students' responsibility for their own learning which by the way facilitates EFL students' autonomy not only in learning English but also in other subjects.

In addition, Vogotsky's (1986) sociocultural perspectives emphasize that peer sharing and collaborative learning in classroom can lead to more effective learning and learner efficacy. This point is further supported by this study. Following Confucian learning tradition, where the teacher is highly respected and expected to perform a teacher's duty, EFL students in Taiwan may find it is difficult for them to accept the learning activities to be dialogic among teachers

and their peers. However, the result of this study demonstrated that adolescent EFL students actually like this kind of learning environment, and adjust will to it. Small group discussion and sharing in MRSI has made EFL students gained different perspectives from their peers on thinking while reading together. By dialogic interaction, they challenged one another and support one another's thinking.

Conclusion

The purpose of this research study was to fill the gap in the literature linking theories and practice in the field of adolescent EFL metacognitive strategy instruction. The results are supportive in many ways. First, this study provides evidence that metacognitive reading strategy instruction, which has been proven effective for L1 students, can also improve ESL/EFL students' reading comprehension and reading motivation at all levels, quantitatively and qualitatively. The prominent feature of this study is that while most studies on metacognitive reading strategy instruction measure the success of ESL/EFL students' reading comprehension solely by quantitative reports, this one has tried to balance the statistical findings with the qualitative explanations of how metacognitive reading strategy instruction and EFL students' learning experience impact their EFL reading experience and how EFL students' perceptions of the learning process changed over the period of the study.

Second, one major characteristic in this study lies in that it explored the effects of reading strategy journal as a self-reflection and an evaluation tool for EFL students to examine their reading strategy use in each reading task. The process of wring "it" down has made the adolescent EFL students actually "see" their thinking in the reading. Meanwhile, by talking and group sharing, it also encouraged EFL students to make their thinking process visible to their peers. The results indicated that the use of explaining out loud how they tackle the reading problems was effective not only in improving EFL students reading strategy awareness but also

in lowering their reading anxiety and reluctance. In addition, by speaking out their thinking process, EFL students learned from each other and learned how to modify their reading strategy when problems arose during their reading.

Third, the present study also explored the effect of metacognition on EFL secondary students' motivation towards reading in English. The results indicated that the integration of the metacognitive reading strategy instruction (MRSI) was effective in improving EFL students' motivation towards reading in English; in particular, the motivation of struggling readers. Few studies have been conducted in an L2 context regarding this issue. This study offered evidence that after the MRSI experiment, EFL students became confident readers and finally they became motivated because they began to understand the relationship between their use of strategies and their success in reading English. That is to say, once EFL students get over the initial reluctance of reading and are given freedom to choose suitable reading materials which they can read with joy and ease, they often become quite enthusiastic on reading. From this point, they often continue enthusiastically under their own initiative, increasing their exposure to the target language and vocabulary.

Fourth, nowadays, English teachers in Taiwan are under great pressure in terms of preparing their EFL students for the yearly entrance examinations. Some may argue that they don't have the luxury to spend time teaching their students how to self-direct learn and read. In order to meet school and parents' expectations, most of them are diligent teachers, trying to teach whatever they know and to cover whatever their EFL students needs to know in order to perform well in the exams. They feel it would be more useful to teach their EFL students test-taking strategies, which are different from reading comprehension strategies for effective understanding or mean-making. However, while these test-taking strategies could have helped them become

test-wise, their ability for in-depth understanding of the reading materials at hand might not have improved (Cohen, 1998). Under this product-oriented teaching method, the problem arises: many of my colleagues often have doubts as to why, after having taught so hard and given their EFL students so much English knowledge input without wasting class time in other things, their EFL students still don't read well or like to read. In other words, English teachers in Taiwan have been tried to cover everything in English class, but EFL students only learn a part. The reason behind this problem is now clear: if EFL students are not taught how to be independent learners, dependence on English teachers' instruction can hardly allow them to reach a satisfactory level. If the only reason that EFL students read is to prepare for school exams, then it is possible that they will never read after schooling, when the exams have ended. However, to master or acquire a second language, EFL students are the ones who can take control over their learning process and they are the ones who should take the initiative to read more to expand their exposure to language input and to build up their English proficiency level. This study, by integrating metacognitive reading strategy instruction into a regular EFL English class, provides evidence that effective metacognitive reading strategy program can transform adolescent EFL students' learning experience and improve their English reading achievement. This is a great and inspiring outcome for language educators in Taiwan and I hope that the findings of this study will contribute to the knowledge base and offer encouragement for researchers and practitioners working towards improving the English achievement of EFL students.

Some issues with regard to metacognitive reading strategy instruction (MRSI) remain unclear here. For instance, long-term impact of MRSI on English reading comprehension as well as L1 literacy and L1 strategy transfer or interference on EFL reading remain unexplored. Therefore, there is a need for more comprehensive research on a wild range of variables affecting

reading strategy instruction and use. In summary, findings in this study can help language teachers, curriculum developers, and researchers to design and develop appropriate programs to meet the needs of the school, the teacher, and the students. The ultimate goal for this research is to offer suggestions to EFL or ESL language teachers to understand that EFL/ESL learners need to explore different reading strategies, experiment, and evaluate those reading strategies and eventually choose their own set of effective strategies. By creating a supportive and cooperative learning context, that is, integrate MRSI along with constructive learning environment into regular EFL instruction, then EFL students are able to think more and evaluate their reading processes and further become confident and develop responsibility for their own learning and learner autonomy.

APPENDIX A
DEMOGRAPHIC DATA SURVEY: STUDENTS' PROFILE

- Age……. Student ID……. Class……. Years studied English…….
- Joint high school entrance examination English test score …….
- Have you ever been taught how to read or reading strategies in English reading?

  Yes……No…….

Please provide the following information. Try to be as specific as possible. This survey should take approximately 15 minutes to complete.

1. What do you think is the most difficulties part of learning a language? (您覺得學習英文最難的部分在?)

2. How do you rate your overall proficiency in English as compared to that of your classmates? (和同學相比您覺得您的英文程度屬於?)

3. How important is it for you to become proficient in English? (對於您來說學好英文有多重要?)
4. Do you enjoy learning English? (您享受學英文的樂趣嗎?)
5. Reasons for learning English (學英文的理由)
   ……..Interested in English ……Interested in western culture
   ……..Have friends who speak English only…….Need English for future career or study ……..Need it for travel ……..Other

6. How many hours per week you spend reading English material? What do you read? (一星期中您閱讀幾個小時的英文? 讀些什麼?)

7. Do you like to read in English? (您喜歡讀英文嗎?)

8. Do you like English class? Why or why not? (您喜歡讀英文課嗎?)

9. What do you find most difficult about English? (英文最難的是…..)

10. How do you learn to reading in English? (您是如何學英文閱讀的?)
11. Do you think you are a good reader in English? Why or why not? (您是個好的英文讀者嗎?)

12. What makes a person a good reader? (什麼因素造成一個好讀者?)

APPENDIX B
PARENT CONSENT (家長同意書)

Parent Consent
(家長同意書)

Dear Parent 親愛的家長:

I am a graduate student in the Department of School of Teaching and Learning at the University of Florida, conducting a research on the effect of metacognitive reading strategies on English reading comprehension and reading motivation. The purpose of this study is to know whether integrating metacognitive reading strategies into English reading class will improve EFL students' reading comprehension and increase their motivation to read English materials. The result of the study may help English teachers in Taiwan become better aware of the importance of integrating reading strategies into English class and allow them to design effective instructional practices accordingly. This study may not directly help your child today, but may change his or her own English reading behavior and perception in the future. With you permission, I would like to ask your child to volunteer for this research.
我是一位佛羅里達大學教育系博士班學生, 我正在研究是否將"後設認知閱讀策略"融入英語閱讀課程能夠改善中學生的英文理解以及英語閱讀動機. 此研究結果將有利於臺灣的英語教師了解閱讀策略在英語閱讀上的重要性並進而設計有效的教學. 此次研究不一定會對您的小孩有直接的影響, 但是可能會對於日後在英語閱讀上有所幫助. 若是您同意, 我希望您的小孩能夠自願參與此研究.

Half of the participating students will either get the instruction on metacognitive reading strategies training or extensive reading activity. The reading materials will come from their English textbooks. Students will be asked to keep reading strategic journal or reading logs. They will also be tested for their English reading comprehension and reading motivation before and after the treatment. This study will take place twice per week during the months of July and August. Although the children will be asked to write their names on the questionnaires for matching purposes, their identities will be kept confidential to the extent provided by law. I will replace their names with code numbers. Results will only be reported in the form of group data. Participation or non-participation in this study will not affect the children's grades or placement in any program. However, for those participants, they will get one grade point in English in the end of the semester.
一部份的學生將會接受設認知閱讀策略的教學而另外的學生則是密集的英語閱讀教材來自於教科書. 學生要另外記錄他們閱讀策略的使用以及閱讀感想. 他們將會填寫二份問卷調查以及英語閱讀測驗. 研究活動為一個禮拜二次, 學生的真實姓名決不會被公開. 研究結果將以組群為單位. "參與"或"不參與"覺不會影響學生的成績或安置到任何的課程, 但是, 對於參與的學生, 英語總成績可以多加一分.

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2007-U-581
For Use Through 06/12/2008

You and your child have the right to withdraw consent for your child's participation at anytime without consequence. There are no known risks or immediate benefits to the participants. Group results of this study will be available in December upon request. If you have any questions about this research, please contact me at (07) 557-7555 or my supervisor, Dr. Fu, Professor, Department of School of Teaching Learning, University of Florida, 2203 Norman Hall, Gainesville, FL 32611-7047. Phone: 352-392-9191 ext.240; email: danlingfu@coe.ufl.edu

您和您的小孩有權利隨時退出此次研究且無任何處罰. 研究結果將在十二月出爐並歡迎索取. 如果您對於此次研究有任何疑問請聯絡我, 王敏姿(07) 557-7555 或是我的指導教授, Dr. Fu, at danlingfu@coe.ufl.edu.

Questions or concerns about your child's rights as research participants may be directed to the UFIRB office, University of Florida, Box 112250, Gainesville, FL 32611, 012-1-352- 39 2-0433.

如果您對於您小孩的權利有問題, 請聯絡 UFIRB office, University of Florida, Box 112250, Gainesville, FL 32611, 012-1-352- 39 2-0433.

Mintzu Wang 王敏姿

_____.

I have read the procedure described above. I voluntarily give my consent for my child,_____, to participate in Mintzu Wang's study of the impact of metaocgnitive reading strategies on reading comprehension and motivation. I have received a copy of this description.

我已經讀過上述的研究計劃我願意我的小孩, _____ , 參與此次研究, 我有收到一份復本.

_____. _____.

Parent / Guardian Date
父母或監護人簽名

2nd Parent / Guardian Date
第二位父母或監護人簽名

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2007-U-581
For Use Through 06/12/2008

APPENDIX C
INFORMED CONSENT

Informed Consent

Protocol Title: The effect of Metacognitive reading strategy on secondary EFL students reading comprehension and reading motivation

Please read this consent document carefully before you decide to participate in this study.

Purpose of the research study: The purpose of this study is to examine the effect of integrating metacognitive reading strategies on EFL students' perception toward English reading, reading comprehension and reading motivation.

What you will be asked to do in the study: Following by the two questionnaires and one reading comprehension test, you will be participating into a study which incorporates metacognitive reading strategies into your EFL classes. A package of reading strategies will be given to you to familiarize yourself with these reading strategies. Following the teacher modeling on those reading strategies use into English reading text, you will be asked to practice on those reading strategies into you guide and independent reading. You will also be asked to keep a reading strategic journal for self evaluating and self reflecting on your reading strategies use in and out of the classroom. At the conclusion of the test session, you will again be tested for reading comprehension, reading motivation, and survey of reading strategies.

Time required: 16 class hours

Risks and Benefits: It is possible that participation in this study may not directly benefit you, but I strongly believe that once you are taught a more efficiency way of English reading, your English reading comprehension and motivation will improve. I believe that your participation will present no risk or discomfort to you. Participation is voluntary and participants are free to withdraw without penalty.

Compensation: You will get one grade point on average in the end of semester for participating in this research.

Confidentiality: Your identity will be kept confidential to the extent provided by law. Your information will be assigned a code number. The list connecting your name to this number will be kept in a locked file in my faculty supervisor's office. When the study is completed and the data have been analyzed, the list will be destroyed. Your name will not be used in any report.

Voluntary participation: Your participation in this study is completely voluntary. There is no penalty for not participating.

Right to withdraw from the study: You have the right to withdraw from the study at anytime without consequence.

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2007-U-581
For Use Through 06/12/2008

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Whom to contact if you have questions about the study:

Mintzu Wang, PhD student, Department of School of Teaching and Learning, University of Florida, 357 Norman Hall, Gainesville, FL 32611-7047. Phone: 352-375-2118; email: mintzu@ufl.edu

Danling Fu, Professor, Department of School of Teaching Learning, University of Florida, 2203 Norman Hall, Gainesville, FL 32611-7047. Phone: 352-392-9191 ext.240; email: danlingfu@coe.ufl.edu

Whom to contact about your rights as a research participant in the study:

UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; ph 392-0433.

Agreement:

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Participant: _____ Date: _____

Principal Investigator: _____ Date: _____

Informed Consent (Chinese Version)

Protocol Title: The effect of Metacognitive reading strategy on secondary EFL students reading comprehension and reading motivation

(後設認知閱讀策略在高中學生之閱讀理解和閱讀動機上的影響)

Please read this consent document carefully before you decide to participate in this study. (在參與此次研究前，請仔細閱讀這份同意書。)

Purpose of the research study: The purpose of this study is to examine the effect of integrating metacognitive reading strategies on EFL students' perception toward English reading, reading comprehension and reading motivation.

研究目的：探查後設認知閱讀策略對高中生的英語閱讀理解力以及英語閱讀的影響

What you will be asked to do in the study: Following by the two questionnaires and one reading comprehension test, you will be participating into a study which incorporates metacognitive reading strategies into your EFL classes. A package of reading strategies will be given to you to familiarize yourself with these reading strategies. Following the teacher modeling on those reading strategies use into English reading text, you will be asked to practice on those reading strategies into you guide and independent reading. You will also be asked to keep a reading strategic journal for self evaluating and self reflecting on your reading strategies use in and out of the classroom. At the conclusion of the test session, you will again be tested for reading comprehension, reading motivation, and survey of reading strategies.

你會做什麼：先是兩份問卷調查關於閱讀觀點以及閱讀動機外加一份閱讀測驗，之後英語教師將會帶領你熟知一系列的英語閱讀策略，這些閱讀策略可以讓你運用在以後的英語閱讀上.

Time required: 16 class hours (時間：16 堂課。)

Risks and Benefits: It is possible that participation in this study may not directly benefit you, but I strongly believe that once you are taught a more efficiency way of English reading, your English reading comprehension and motivation will improve. I believe that your participation will present no risk or discomfort to you. Participation is voluntary and participants are free to withdraw without penalty.

風險和利益：對於參與者來說可能會没有直接的利益，但是，也沒有什麼風險。這個研究是希望能夠了解這個閱讀策略對於英語理解和閱讀動機的影響並進而探討有效的英語閱讀教學, 以便幫助學生的英語学習。

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2007-U-581
For Use Through 06/12/2008

Compensation: You will get one grade point on average in the end of semester for participating in this research. (補貼：參加此次研究者英語學期成積將多一分。)

Confidentiality: Your identity will be kept confidential to the extent provided by law. Your information will be assigned a code number. When the study is completed and the data have been analyzed, the list will be destroyed. Your name will not be used in any report.

保密性：在法律規定的範圍之內，你的身份會被保密。所有的個人基本資料在研究完成後會被銷毀。您的名字不會被使用在報告上。

Voluntary participation: Your participation in this study is completely voluntary. There is no penalty for not participating. (自願参與：你的参與是完全自願的，不参與不會帶來任何處罰。)

Right to withdraw from the study: You have the right to withdraw from the study at anytime without consequence. (退出研究的權利：你有權利在任何時候退出此次研究，並且不會帶來任何结果。)

Whom to contact if you have questions about the study: (如有問題請連系：王敏姿以及 Dr. Fu)

Mintzu Wang, PhD student, Department of School of Teaching and Learning, University of Florida, Norman Hall, Gainesville, FL 32611-7047. Phone: 352-375-2118; email: mintzu@ufl.edu

Danling Fu, Professor, Department of School of Teaching Learning, University of Florida, 2203 Norman Hall, Gainesville, FL 32611-7047. Phone: 352-392-9191 ext.240; email: danlingfu@coe.ufl.edu

Whom to contact about your rights as a research participant in the study: (關於你研究參與者權利的問題，請連繫：UFIRB Office, Box 112250, University of Florida, Gainesville, FL 32611-2250; ph 392-0433.

Agreement (同意): 我已經閱讀所有上述列出的程序。我自願参與此次研究並且得到一份描述的複本。

I have read the procedure described above. I voluntarily agree to participate in the procedure and I have received a copy of this description.

Approved by
University of Florida
Institutional Review Board 02
Protocol # 2007-U-581
For Use Through 06/12/2008

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參與者的簽名及當日日期

Participant: _____ Date: _____

主要研究者的簽名及當日日期

Principal Investigator: _____ Date: _____

APPENDIX D
READING STRATEGY BOOKLET & JOURNAL

幾個幫你成爲較好的讀者英語閱讀方法
Reading Strategies that Help to Become a Better Reader

閱讀階段 Reading Stagetegies		
Before you read… (閱讀前)	**While you are reading…. (閱讀中)**	**After you've read…. (閱讀後)**
Planning(計劃)	**Monitoring (監控)**	**Evaluating (評估)**
Questions to Ask (問題)		
Questions to ask at this stage • What do I already know about this topic? (我對這個主題了解多少?)	Questions to ask at this stage • Do I understand what I am reading? (我了解我所讀的嗎?) • Does this make sense in comparison to what I already know? (和我所知道相比較有所出入嗎?)	Questions to ask at this stage • How did I do? • Did I accomplish my task? • What could I have done differently?
可以使用的方法 Strategies to Use		
Strategies to use: • Predicting (預測) • Previewing (預習) • Activate your background knowledge (想想妳你的背景知識)	**Strategies to use** • Focus you attention (專心) • Clarifying (澄清) • Predict as you go along • Reread (重讀) • Keep going if you get the gist (繼續讀如果了解大意) • Ask yourself questions (問你自己問題) • Summarize sections of the text (做摘要) • Talk to yourself through problems • Visualizing through semantic mapping (利用圖像)	**Strategies to use** • Summarize entire text (摘要整個文章) • Ask yourself questions (問你自己問題)

閱讀方法 1(Reading Strategies 1) – 猜測 Predicting

❖ 爲什麼要使用預測的方法? What do we use the strategy of predicating?

- To help us become better readers. (幫我們成爲好的讀者)
- To think about what you already know and how this relates to what might happen next.(可以想想我們所知道的並想想文章的內容)
- Gives you a reason for reading to see if your prediction came true. (看看你的猜測有沒有成真)
- To look for clues that tell us what may happen next.(找尋線索)

❖ 好的猜測是有依據的, 而不是隨意亂猜. Good prediction can be explained. They are not just wild guesses but are based on the following things:

- What is already known about the reading text? 背景知識(Activate *background knowledge*)
- What information do you know from titles, headings, pictures, and charts? 從標題, 圖片, 或圖表.

o **Sample ways to predict**

1. I think that….
2. I believe
3. I bet….
4. I predict….
5. Because of……., I believe that…..
6. Based on what I have read or on the type of story it is, I predict that……

閱讀方法 2(Reading Strategies 2) –澄清 Clarifying

❖ 爲什麼要使用澄清的方法?*What do we use the strategy of clarifying?*

- To know what to do when we don't understand something (知道該怎麼做當不瞭解時)
- To find out a word means (找出字的意思)
- To get more information about something in the text (從文章中找出更多的資訊)

o 字的分析 *Word Analysis*

→ 當你遇到不認識的單字時不要馬上查字典, 試試下面幾個方法. *When you come to a word you don't know, don't' feel panic or look it up in the dictionary immediately:*

- Reread the sentence and think of what it might make sense (重讀句子)
- Break the word into pieces (prefix and suffix) (把字分解)
- Are there any parts of word you know? (有認識字的一部分嗎?)
- Identify its part of speech (確認八大詞彙)
- Substitute a word or idea that make sense (取代字或意思)
- Look it up in the dictionary (查字典)

- 當有看不懂的句子時 When something is confusing

- Reread (重讀)
- Slow down (放慢速度)
- Look at the pictures, titles, headings. (看圖, 抬頭或標題)

❖ Clarifying statement

1. A word I don't know the meaning of is……
2. Is there anything I don't understanding?
3. I am not sure what is happening when…..?
4. This is confusing to me so I need to ….
5. This doesn't make sense to me so I need to……

閱讀方法 3 (Reading Strategies 3) – 質疑 Questioning

a. 爲什麼要使用質疑的方法? Why do we use the strategy of questioning?

- To see if we really understand what we are reading? 確定我們是否真的了解所讀的東西
- To decide what is the main idea or most important about what we have read 來決定文章的主旨(Finding main idea - *Global reading strategies*)

- **質疑的字 Question words**
    - Who 誰?
    - What 甚麼?
    - Where 哪裡?
    - Why 爲什麼?
    - How 如何?

- **隨時問自己下面的問題 Questioning (question words such as who, where, what, why, when, and how?)**
    1. What was the main idea?
    2. I wonder why?
    3. What was happening?
    4. What would you do if……?
    5. Why do you think ……?
    6. How would you feel if…..?

閱讀方法 4 (Reading Strategies 4) – 摘要 Summarizing

a. 爲什麼要使用摘要的方法?Why do we use the strategy of summarizing?

- To check if we understand what we read 確認我們是否了解我們所讀的
- To help us remember the main ideas 可以幫助我們記得文章的主旨

- To find out what the author wants to reader to know 找出文章的作者要讀者知道的事

b. 好的摘要包含 Good Summarizing includes the following parts:

Key people, (who) 什麼人

Key place, (where) 什麼地方

Key information, 什麼訊息

Key ideas, concepts, and events.什麼概念以及什麼事件

- Focus on the main idea or most important information and don't tell every detail (著重在最重要的資訊並不包括所有的細節)
- Use your own words. (用你自己的話)
- Trying to use semantic map to help you summarize. (visualizing) (試著使用圖像來幫助您做摘要)

❖ **Sample summarizing statements:**

1. The main point of this was…..
2. The most information thing I read was…..
3. In my own words, this is about…..
4. I understand that…..

練習一 Practice One 利用線索猜字 Using clues to clarifying words

1. The job requires that you are proficient at typing and using the computer.

"Proficiency" probably means:這個字的意思可能是…….

2. We went to Bilbos for lunch last week.

"Bilbos" probably means:這個字的意思可能是…….

3. Generally, I don't like candy but yesterday I ate a lot.

"Generally" probably means:這個字的意思可能是…….

4. Don't blurt out the answer. Remember to raise your hand.

"blurt" probably means:這個字的意思可能是…….

5. I really like Neeru's backpack.

"Neeru's" probably means:這個字的意思可能是…….

練習二 Practice Two

Mammoth

A mammoth was an elephant that lived during the Ice Ages. The Ice Ages were times when much of the Earth was covered with snow and ice. It was very hard to live during the ice ages. It was very cold. Mammoths could live in the cold because their bodies helped them.

They had tusks that were very long. The tusks curled up at the ends. Mammoths used their tusks to scrape the snow off grass and plants so they could eat them.

Mammoths had long, shaggy hair to help keep them warm. The long, shaggy hair kept the cold off of the mammoth's body. The hair also helped keep the heat the mammoth's body made in.

Mammoths had a hump between their shoulders. The hump was made of fat. When mammoths couldn't find food to eat, they could use up the fat in the hump.

1. Read this paragraph. As you are reading, are there any words or ideas you need clarified? 你在讀的時候有沒有需要澄清的字或意思?
2. Summarize the important points.

步驟一: 找出主旨.例如: Mammoth’ s bodies helped them live in the cold.

步驟二: 寫出 2-3 個句子說明三個重要方法 Mammoth 的身體幫他們住在寒冷的氣 候.

…….

…….

步驟三: 把上面的句子和在一起就是 Summary 啦!

……..

……..

上一篇 Mammoth 你用到甚麼方法? 請打 √

Predict ……Clarify……..Question……..Summarize……..Vocabulary……..

說說您的方法用在哪一部分?Tell one place where you used one of the strategies:

……

……

……

若您是英文老師 您會出哪些問題考學生? 至少三題.

Write at least three questions you could ask someone else who read the story:

……

……

……

Reading Strategies Self Checklist (閱讀方法自我檢視表)		
Think about the reading you read and answer the following questions about the strategies used. 想想您剛才所讀的文章並圈選下面的問題		
1. 我有透過文章的標題預先猜測文章的內容 I predicted what the reading would be about by the title and the illustrations.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
2. 我用文章中的上下文和取代的方法去猜測我不認識的單字 I clarified unknown words by using the context, substituting, or a good guess.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
3. 當我在閱讀時我留意我是否理解文章 I pay attention to my own thoughts to see if I understand what I was reading.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
4. 我反覆閱讀當我不理解時 I went back or reread when something didn't make sense.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
5. 如果我大致了解文章的主旨我會跳過不認識的單字 I skipped unknown words that I couldn't clarify if I understood the gist.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
6. 我預測文章下一段將出現的內容 I made predictions about what would happen next in the reading text.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
7. 讀完之後我做摘要 After reading, I summarized the main points of the reading text.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)

練習三 Practice Three

Animal's Bodies

Animals' bodies have different forms so they can live in different places. Some animals live in the water. Other animals fly through the air. Some animals live on the land. Animals' bodies are specially made so that each animal can live well in its environment.

An animal that lives in the water usually has a tail and fins, but no legs. It needs to swim, not to walk. If it does have legs, its feet are usually webbed so it can swim well. A water animal's body is built to do the job of swimming!

An animal that flies through the air has wings. It also has legs because it can't fly all of the time. A bird's or insect's body is built to do the job of flying!

Animals that live on the land usually have legs, except for snakes and other animals the crawl on their bellies. To move on land animals need to walk, run and climb.

==========

1. Read this paragraph. As you are reading, are there any words or ideas you need clarified? 你在讀的時候有沒有需要澄清的字或意思?
2. Summarize the important points.

步驟一: 找出主旨……..
……....
步驟二: 寫出 2-3 個句子說明動物的身體是如何幫助他們住在陸地上, 天上, 以及水裏. …… .
…….
…….

…….
步驟三: 把上面的句子和在一起就是 Summary 啦!
……..
……..
……..
……..

上一篇 Animal's bodies 你用到甚麼方法? 請打 √

Predict ……Clarify……..Question……..Summarize……..Vocabulary……..

說說您的方法用在哪一部分?Tell one place where you used one of the strategies:

……
……
……
……
若您是英文老師 您會出哪些問題考學生? 至少三題.

Write at least three questions you could ask someone else who read the story:

……
……
……

Reading Strategies Self Checklist (閱讀方法自我檢視表)		
Think about the reading you read and answer the following questions about the strategies used. 想想您剛才所讀的文章並圈選下面的問題		
1. 我有透過文章的標題預先猜測文章的內容 I predicted what the reading would be about by the title and the illustrations.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
2. 我用文章中的上下文和取代的方法去猜測我不認識的單字 I clarified unknown words by using the context, substituting, or a good guess.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
3. 當我在閱讀時我留意我是否理解文章 I pay attention to my own thoughts to see if I understand what I was reading.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
4. 我反覆閱讀當我不理解時 I went back or reread when something didn't make sense.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
5. 如果我大致了解文章的主旨我會跳過不認識的單字 I skipped unknown words that I couldn't clarify if I understood the gist.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
6. 我預測文章下一段將出現的內容 I made predictions about what would happen next in the reading text.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
7. 讀完之後我做摘要 After reading, I summarized the main points of the reading text.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)

Reading comprehension 閱讀理解

Tsunamis

The 2004 tsunamis took tens of thousands of people's lives and the tragedy remains etched in out memory. But by December 2006, the Indian Ocean will have a hi-tech tsunami early warning system in place. The warning system will go off at once should another tidal wave begin. There is no doubt that if the warning system had been in place, a lot of lives would have been saved from the 2004 tsunamis. However, some people don't think that is enough to defend people there against the assault of another tsunami. Fishermen living along the coasts next to the Indian Ocean are often too poor to live decent lives let alone buy mobile phones. That means that a warning system might not be able to get to them in case of an emergency.

1. The main idea of this passage is:
   A. The 2004 tsunamis caused a lot of damage and took a lot of lives.
   B. The early warning system will go off before a tsunami hits.
   C. An early warning system will not be enough to guard fishermen against a tsunami.
   D. Fishermen along the coasts of India are mostly poor.
2. By when will the Indian Ocean be equipped with a hi-tech tsunami early warning system?
   A. October, 2006
   B. December, 2006
   C. November, 2006
   D. September, 2006
3. Why is the warning system not enough to save the people along the coasts of the Indian Ocean?
   A. Because the warning system will not go off on the beach.
   B. Because mobile phones are not available in poor countries.
   C. Because the coasts stretch to the horizon.
   D. Because the people are too poor to have access to the warning system.
4. The author expands on his main idea by _____.
   A. giving reasons.
   B. offering arguments
   C. making a contrast
   D. giving examples

閱讀方法自我檢視表 **Reading Strategies Self Checklist**		
Think about the reading you read and answer the following questions about the strategies used. 想想您剛才所讀的文章並圈選下面的問題		
1. 我有透過文章的標題預先猜測文章的內容 I predicted what the reading would be about by the title and the illustrations.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
2. 我用文章中的上下文和取代的方法去猜測我不認識的單字 I clarified unknown words by using the context, substituting, or a good guess.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
3. 當我在閱讀時我留意我是否理解文章 I pay attention to my own thoughts to see if I understand what I was reading.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
4. 我反覆閱讀當我不理解時 I went back or reread when something didn't make sense.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
5. 如果我大致了解文章的主旨我會跳過不認識的單字 I skipped unknown words that I couldn't clarify if I understood the gist.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
6. 我預測文章下一段將出現的內容 I made predictions about what would happen next in the reading text.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
7. 讀完之後我做摘要 After reading, I summarized the main points of the reading text.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)

8. 您喜歡這幾次的指定閱讀嗎? 爲什麼?)

……
……
……

9. 您覺得這幾次的指定閱讀困難嗎? 或是容易? 爲什麼?

……
……
……

10. 這禮拜所經歷的困難在英文閱讀上, 您覺得可以用什麼方法來改進?

……..
……...
……

11. 這禮拜所經歷的成功在英文閱讀上, 您用什麼方法來幫助您了解? 如果您再遇到一次, 您會不會做的不一樣?

……..
……..
……

Reading comprehension 閱讀理解

Dear Grandpa,

How are things going back in Taiwan? I really miss you, but I've found some really great people to spend time with here at the university in England. Peggy is such a funny girl. She reminds me a lot of my sister and we have become very close friends. On the 18th, we went to see a concert at Wembley Stadium. That place is huge. The stadium is brand new and very beautiful. I think it holds 100,000 people. Anyway, thanks for everything. It was hard when I first moved here, but your advice was really good. I mean, at first, I kept thinking about home, but then I remember what you said, and you were right. One year isn't that long and if I think about where I am and not where I was, I will have a lot more fun. It's beautiful and there are lots of people that I want to see and things I want to do. I am so glad I am not homesick anymore. Thanks again.

Love,
Sandy

1. What did Peggy and Sandy do no the 18th? They
   A. went to see a garden
   B. went to talk to Wembley
   C. went to ask for advice
   D. went to a concert

2. What holds 100,000 people?
   A. Wembley Stadium
   B. the concert
   C. England
   D. the university

3. What did Grandpa give the girl?
   A. a big hug
   B. a bit of fun
   C. a little advice
   D. a little homesickness

閱讀方法自我檢視表 **Reading Strategies Self Checklist**		
Think about the reading you read and answer the following questions about the strategies used. 想想您剛才所讀的文章並圈選下面的問題		
1. 我有透過文章的標題預先猜測文章的內容 I predicted what the reading would be about by the title and the illustrations.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
2. 我用文章中的上下文和取代的方法去猜測我不認識的單字 I clarified unknown words by using the context, substituting, or a good guess.		
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3. 當我在閱讀時我留意我是否理解文章 I pay attention to my own thoughts to see if I understand what I was reading.		
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4. 我反覆閱讀當我不理解時 I went back or reread when something didn't make sense.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)
5. 如果我大致了解文章的主旨我會跳過不認識的單字 I skipped unknown words that I couldn't clarify if I understood the gist.		
Not at all(完全沒有)	Some(有一些)	A lot(很多)

6. 我預測文章下一段將出現的內容 I made predictions about what would happen next in the reading text.
   Not at all(完全沒有) Some(有一些) A lot(很多)

7. 讀完之後我做摘要 After reading, I summarized the main points of the reading text.
   Not at all(完全沒有) Some(有一些) A lot(很多)

8. 您喜歡這幾次的指定閱讀嗎? 爲什麼?)
……
……
……

9. 您覺得這幾次的指定閱讀困難嗎? 或是容易? 爲什麼?
……
……
……

10. 這禮拜所經歷的困難在英文閱讀上, 您覺得可以用什麼方法來改進?
……..
……..
……..

11. 這禮拜所經歷的成功在英文閱讀上, 您用什麼方法來幫助您了解? 如果您再遇到一次, 您會不會做的不一樣?
……..
……..
……..

Reading comprehension 閱讀理解

Chinese Recipe

Here is a great idea for some delicious Chinese food that you can make yourself. Chinese noodles with chicken are a big favorite at my house, so I thought I would share the recipe with you. First, you will need the ingredients. You need chicken breast, onion, broccoli, carrots, noodles and sauce. Once you have the ingredients, you need to cook the chicken in a little oil until it is just about fully cooked. Then, add the onion, broccoli, and carrots. Once you have added the vegetables, cover the pan and heat for 3 or 4 minutes. The vegetables will steam inside the covered pan and cool quickly. Lastly, add the noodles and sauce mix and stir. Keep stirring for about 5 minutes until the noodles are soft and it's time to serve. This is a great little Chinese recipe that is sure to please your family.

1. What do you need first?
   A. The recipe.
   B. The chicken.
   C. The onion.
   D. The ingredients.
2. What do you do first?
   A. Cook the chicken.
   B. Cook the vegetables.
   C. Find the recipe.
   D. Cook the noodles.
3. When are the noodles done?
   A. When they are crispy.
   B. When they are soft.
   C. When mom says so.
   D. When the chicken is cooked.

閱讀方

Reading Stra

Think about the reading you read and answer the following questions about the strategies used. 想想您剛才所讀的文章並圈選下面的

12. 我有透過文章的標題預先猜測文章的內容 I predicted what the reading would be about by the title and the illustrations.
    Not at all(完全沒有) Some(有一些) A lot(很多)

13. 我用文章中的上下文和取代的方法去猜測我不認識的單字 I clarified unknown words by using the context, substituting, o
    Not at all(完全沒有) Some(有一些) A lot(很多)

14. 當我在閱讀時我留意我是否理解文章 I pay attention to my own thoughts to see if I understand what I was reading.
    Not at all(完全沒有) Some(有一些) A lot(很多)

15. 我反覆閱讀當我不理解時 I went back or reread when something didn't make sense.
    Not at all(完全沒有) Some(有一些) A lot(很多)

16. 如果我大致了解文章的主旨我會跳過不認識的單字 I skipped unknown words that I couldn't clarify if I understood the gis
    Not at all(完全沒有) Some(有一些) A lot(很多)

17. 我預測文章下一段將出現的內容 I made predictions about what would happen next in the reading text.
    Not at all(完全沒有) Some(有一些) A lot(很多)

18. 讀完之後我做摘要 After reading, I summarized the main points of the reading text.
    Not at all(完全沒有) Some(有一些) A lot(很多)

19. 您喜歡這幾次的指定閱讀嗎? 爲什麼?
    ……

20. 您覺得這幾次的指定閱讀困難嗎? 或是容易? 爲什麼?
    ……

21. 這禮拜所經歷的困難在英文閱讀上, 您覺得可以用什麼方法來改進?
    ……

22. 這禮拜所經歷的成功在英文閱讀上, 您用什麼方法來幫助您了解? 如果您再遇到一次, 您會不會做的不一樣?
    ……..
    ……..
    ……...

APPENDIX E
READING STRATEGIC JOURNAL GUIDELINE

Assigned Reading Article_____Date _____.

(1) For this assigned reading passage, what strategies did you use before reading, during reading, and after reading?
(對於指定閱讀, 您使用了什麼閱讀策略在閱讀前, 閱讀中, 閱讀後?)

(2) How easy or difficult this assigned text is for you to read and why?
(您覺得此次的指定閱讀困難嗎? 或是容易? 爲什麼?)

(3) What you have learned from this reading?
(從此次的指定閱讀, 您學到什麼?)

(4) Personal response: do you like this assigned reading passage and why?
(您喜歡此次的指定閱讀嗎? 爲什麼?)

(5) During the past week, what strategies did you use while reading?
(在過去的禮拜中, 您曾使用什麼閱讀策略?)

(6) Write about your experience reading this week (either in class or outside). Here are some questions to help you. You don't have to answer all the questions, just choose one or two. Write in the box below.
(說說您這禮拜的閱讀經驗, 下面有些問題可以幫助您, 您不須全部回答)

- Write about a difficult experience reading English that you had this week. What strategy could you use to improve in this area? (這禮拜所經歷的困難在英文閱讀上, 您覺得可以用什麼策略來改進?)
- Write about a successful experience reading English that you had this week. What strategy did you use that helped you comprehend? If you did it again, would you do it differently? (這禮拜所經歷的成功在英文閱讀上, 您用什麼策略來幫助您了解? 如果您再遇到一次, 您會不會做的不一樣?)
- Did any of your classmate use strategies for reading that you would like to try? What strategies did they use? (同學間用的閱讀策略有無您想嘗試的? 是怎樣的策略呢?)

APPENDIX F
SURVEY OF READING STRATEGY

後設認知英語閱讀策略問卷

各位同學:

您好 感謝您參與此次英語閱讀教學研究活動, 爲了理解此活動對您日後在英文閱讀策略的使用之影響, 麻煩您填寫本問卷, 提供您的寶貴意見. 本問卷沒有標準答案, 請讀完每一項敘述後在量表上勾選出您的答案. 本問卷僅爲個人研究使用, 一切資料將予以保密, 謝謝協助!

王敏姿 05/2007

	Statement 敘 述	Never 從未	偶而	有時	常常	Always 總是
1	I have a purpose in mind when I read. 我在閱讀英文時, 心中是有目的的	1	2	3	4	5
2	I take notes while reading to help me understand what I read. 我在閱讀英文時, 邊做筆記來幫助我理解文章的內容	1	2	3	4	5
3	I think about what I know to help me understand what I read. 我用原本就已經知道的知識來幫助我理解文章的內容	1	2	3	4	5
4	I take an overall view of the text to see what it is about before reading it. 我在閱讀英文之前,我會先大致簡單瀏覽一下文章的內容	1	2	3	4	5
5	When text becomes difficult, I read aloud to help me understand what I read. 當我遇到較困難的段落時,我會大聲的把它唸出來來幫助我理解	1	2	3	4	5
6	I think about whether the content of the text fits my reading purpose. 在我閱讀英文之後,我會思考文章的內容是否符合我預期的目的	1	2	3	4	5
7	I read slowly and carefully to make sure I understand what I am reading. 我在閱讀英文時, 爲了要確保我了解自己正在閱讀的東西,我會仔細小心的慢慢讀	1	2	3	4	5
8	I review the text first by noting its characteristics like length and organization. 當我瀏覽英文文章時,我會先注意它的編排組織與文章長短	1	2	3	4	5
9	I try to get back on track when I lose concentration. 當我無法專心閱讀時,我會試著讓自己集中精神回去原本閱讀的思緒當中	1	2	3	4	5
10	I underline or circle information in the text to help me remember it. 爲了把文章的內容記起來,我會把重點劃出來	1	2	3	4	5
11	I adjust my reading speed according to what I am reading. 我在閱讀英文時, 我會視文章的內容而調整我閱讀的速度	1	2	3	4	5
12	When reading, I decide what to read closely and what to ignore. 我在閱讀英文時,我決定什麼內容該仔細理解而什麼該忽略	1	2	3	4	5
13	I use reference materials (e.g., a dictionary) to help me understand what I read. 我在閱讀英文時, 我會使用參考書籍 像是字典來幫助我理解	1	2	3	4	5

14	When text becomes difficult, I pay closer attention to what I am reading. 當我在閱讀英文時遇到比較困難時,我會特別仔細專心的讀	1	2	3	4	5
15	I use tables, figures, and pictures in text to increase my understanding. 我利用英文文章裡的圖片與表格來加強我對內容的理解	1	2	3	4	5
16	I stop from time to time and think about what I am reading. 我在閱讀英文時,我會時常停下來思考剛剛閱讀的內容	1	2	3	4	5
17	I use context clues to help me better understand what I am reading. 我在閱讀英文時, 我會用文章上下文去了解文章內容的意思	1	2	3	4	5
18	I paraphrase (restate ideas in my own words) to better understand what I read. 我在閱讀英文時,我用自己的話來思考閱讀的內容,	1	2	3	4	5
19	I try to picture or visualize information to help remember what I read. 我在閱讀英文時,我會試著把閱讀的內容圖像化來幫助記憶	1	2	3	4	5
20	I use typographical features like bold face and italics to identify key information. 我會特別注意書本裡標示的重點 (例如:特別用粗體或斜體標示出來的字)	1	2	3	4	5
21	I critically analyze and evaluate the information presented in the text. 我會用批判式的思考去分析衡量英文文章的內容.	1	2	3	4	5
22	I go back and forth in the text to find relationships among ideas in it. 我在閱讀英文時,我會反覆來回的讀並且找出前後相關的內容及重點.	1	2	3	4	5
23	I check my understanding when I come across new information. 當我閱讀英文時, 如果出現新的資訊,我會確認我對新資訊的理解程度	1	2	3	4	5
24	I try to guess what the content of the text is about when I read 當我閱讀英文時,我會用猜測的方法去理解內容.	1	2	3	4	5
25	When text becomes difficult, I re-read it to increase my understanding. 英文閱讀較困難時,我會用一再反覆的讀來增加理解力	1	2	3	4	5
26	I ask myself questions I like to have answered in the text. 閱讀英文文章前,我會先假設一個問題,然後再從文章中找尋答案	1	2	3	4	5
27	I check to see if my guesses about the text are right or wrong. 當我猜測某些英文的內容時,我最後會去查證猜測是否正確	1	2	3	4	5
28	When I read, I guess the meaning of unknown words or phrases. 當我閱讀英文時,我會猜測不認識字或詞的意思	1	2	3	4	5
29	When reading, I translate from English into my native language. 我在閱讀英文時,我會把英文翻成中文來理解	1	2	3	4	5
30	When reading, I think about information in both English and my mother tongue. 我在閱讀英文時, 我會中英文思考.	1	2	3	4	5

Source: Mokhtari K., & Sheorkey, R., (2002), Measuring ESL Students' Awareness of Reading Strategies, Journal of Developmental Education, 25(3), 2-8.

APPENDIX G
ENGLISH READING MOTIVATION QUESTIONNAIRE

英語閱讀動機問卷

各位同學:

您好 感謝您參與此次英語閱讀教學研究活動, 爲了理解此英語閱讀教學活動對您日後在英文閱讀的動機之影響, 麻煩您填寫本問卷以提供您的寶貴意見. 本問卷沒有標準答案, 請讀完每一項敘述後在量表上勾選出或圈出您的答案. 本問卷僅爲個人研究使用, 一切資料將予以保密, 謝謝協助!

王敏姿 05/2007

	Statement 敘 述	非常不同意	不同意	同意	非常同意
1	By learning to read in English, I hope I will be able to read English novels. 藉著學習英文閱讀,我希望能閱讀英文小說	1	2	3	4
2	I get immersed in interesting stories even if they are written in English. 我沉醉在有趣的故事即使是用英文寫的故事	1	2	3	4
3	Learning to read in English is important in that we need to cope with internationalization. 爲了跟上國際化的潮流,學習讀英文是很重要的	1	2	3	4
4	I am learning to read in English because I might study abroad in the future. 我學習閱讀英文因爲我將來可能會出國唸書	1	2	3	4
5	By being able to read in English, I hope to understand more deeply about lifestyles and cultures of English speaking countries (such as America and England). 藉著會讀英文, 我希望可以更深入了解英語系國家的生活方式和文化 背景像是美國或英國	1	2	3	4
6	Even if reading were not a required subject, I would take a reading class anyway. 我願意上英文閱讀課程即使它不是必修科目	1	2	3	4
7	*I am learning to read in English merely because I would like to get good grades. 我學習英文閱讀只是爲了要拿好成績應付考試	1	2	3	4
8	Long and difficult English passages put me off. 冗長且困難的英文文章讓我不感興趣	1	2	3	4
9	*I am taking a reading class merely because it is a required subject. 我選英文閱讀的課程只是因爲它是必修	1	2	3	4
10	I would like to get a job that uses what I studied in English reading class. 我想把從英文閱讀課程裡學到的東西能應用在未來的工作上面	1	2	3	4
11	I am good at reading in English. 我有不錯的英文閱讀能力	1	2	3	4
12	I like reading English novels. 我喜歡閱讀英文小說	1	2	3	4
13	I liked reading classes at junior and senior high schools. 我在國中和高中時就已經喜歡上英文閱讀相關課程	1	2	3	4
14	By learning to read in English, I hope to be able to read English newspapers and/or magazines.	1	2	3	4

	藉著學習英文閱讀,我希望能夠閱讀英文報紙或雜誌				
15	It is fun to read in English. ,閱讀英文是一種樂趣	1	2	3	4
16	I like reading English newspapers and/or magazines. 我喜歡讀英文報紙或者雜誌	1	2	3	4
17	English reading is my weak subject. 英文閱讀是我較弱(或者不太在行)的科目	1	2	3	4
18	Learning to reading in English is important because it will be conducive to my general education. 學習閱讀英文很重要,因爲它有助於我的教育	1	2	3	4
19	By learning to read in English, I hope to learn about various opinions in the world 藉著學習英文閱讀,我希望能見識到世界上每個角落不同的聲音(意見)	1	2	3	4
20	*I think learning to speak and/or listening is more important than learning to read in English. 我覺得學習英文聽力與口語能力比學習閱讀英文來的重要	1	2	3	4
21	My grades for English reading classes at junior and senior high schools were not very good. 我國中與高中的英文閱讀成績不是很好	1	2	3	4
22	I enjoy the challenge of difficult English passages. 我喜歡挑戰較困難的英文文章	1	2	3	4
23	I do not have any desire to read in English even if the content is interesting. 我對英文閱讀沒有什麼興趣即使它的內容還蠻有趣的	1	2	3	4
24	Learning to reading in English is important because it will broaden my view. 學習閱讀英文很重要因爲它會擴展我的視野	1	2	3	4
25	*By learning to read in English, I hope to search information on the Internet. 藉著學習英文閱讀,我希望能搜尋更多網路上的資訊	1	2	3	4
26	Reading in English is important because it will make me a more knowledgeable person. 閱讀英文很重要,因爲我會因此成爲一個更有知識的人	1	2	3	4
27	It is a waste of time to learn to read in English. 學習閱讀英文很浪費時間	1	2	3	4
28	I would not voluntarily read in English unless it is required as homework or assignment. 我不會主動去閱讀英文除非是學校規定的功課	1	2	3	4
29	I tend to get deeply engaged when I read in English. 當我閱讀英文時,我會很融入文章中的情境	1	2	3	4
30	It is a pain to read in English. 閱讀英文對我來說是一件痛苦的事情.	1	2	3	4

Source: Mori, S. (2002). Redefining Motivation to Read in a Foreign Language, Reading in a foreign language, Vol. 14, No. 2, p. 91-110.

APPENDIX H
READING COMPREHENSION TEST

閱讀能力測驗

本部份共 15 題，包括數段短文，每段短文後有 2~5 個相關問題，試題冊上均提供 A、B、C、D 四個選項，請由四個選項中選出最適合者，標示在答案紙上。

Questions 1-3

Book Editor Wanted

Job Responsibilities:

The editor is responsible for coordinating and overseeing book projects by working with authors, artists, designers, and printers to produce quality books in a timely manner.

Job Requirements:

The applicants must hold a bachelor's degree in Chinese literature or journalism and have five years of experience as a book editor or a comparable position. The editor must be able to research and analyze information with accuracy and work closely with team members. Accurate typing skills of at least 45 w.p.m. are preferable. The applicants must demonstrate knowledge of the book production and editorial processes, and proficiency in word-processing and publishing-related computer programs is a definite advantage.

Please fax your resume to Era Publisher at (02) 1234-5678.

1. What type of educational background must the job applicant possess?
   A. A master's degree in journalism.
   B. A bachelor's degree in Chinese literature.
   C. A Ph.D. in Chinese or journalism.
   D. A bachelor's degree in English literature.

2. What will the primary job responsibility of the book editor?
   A. Writing books.
   B. Printing books.
   C. Coordinating various book projects.
   D. Correcting people's articles.

3. Which of the following is NOT the required skill for this job?
   A. Good typing skills.
   B. Knowledge about book production.
   C. Book writing experience.
   D. Skill in work-related computer programs.

Questions 4-6

Dear Sales Manager:

This letter is a complaint regarding the Baker TX2200 bread Machine that I purchased on April 1st at Sam's Electronics in Taichung.

Unfortunately, this product did not perform as well as I had expected. After making two successful loaves of whole-wheat bread, the kneading paddle began to function badly and the belt kept coming off. The quality of the product is simply disappointing.

To resolve the problem, I would appreciate a full refund. Enclosed are copies of the receipts, warranty, product model, and serial number.

I hope that this problem can be solved in a mutually agreeable way. Please contact me within 2 weeks. If I don't receive response by then, I will start seeking assistance from third parties, such as a consumer right organization of an attorney.

Thank you for your anticipated assistance in resolving my problem. Please contact me at 02-23458910 if you have any questions.

Sincerely,

Joyce Ma

4. What was the main purpose of this letter?
   A. To purchase a bread machine.
   B. To exchange a product.
   C. To complain about customer service at Sam's Electronics
   D. To request for money back for a product.

5. What was the problem of the product?
   A. It burned the bread.
   B. The kneading paddle was defective.
   C. The belt was shattered.
   D. the motor overheated.

6. What did Ms. Ma request in the letter?
   A. A brand new bread machine.
   B. her money back.
   C. an attorney.
   D. Gift certificate.

Questions 7-9

The Dead Sea, Located in the Middle East, between Jordan and Israel, has the saltiest water on earth. It is almost six times as salty as the ocean. It is called "dead" because almost nothing could live in it. The high concentration of salt prevents fish, seaweeds, plants and other visible aquatic organism from living in or near the water. The water in the Dead Sea is fatal to living creatures. If fish accidentally swim into water from a freshwater stream, they will quickly die. Their bodies will be quickly coated with a layer of salt crystals and then tossed onto a shore by wind of waves. However, humans are adaptable to the salty water in the Dead Sea. The high density of the water makes it impossible for people to sink. Instead, almost everyone can actually easily float in the Dead Sea.

7. What is the main topic of the passage?
   A. The ecology of the Dead Sea.
   B. The formation of the Dead Sea.
   C. The location of the Dead Sea.
   D. The reason why it is called the Dead Sea.

8. What is the location of the Dead Sea?
   A. Between Asia and Europe.
   B. Above sea level.
   C. In the Middle East.
   D. Between Israel and Iraq.

9. Which of the following statement is true about the Dead Sea?
   A. The Dead Sea is almost as salty as the ocean.
   B. The water in the Dead Sea is too salty for fish to survive in it.
   C. The Dead Sea is the only salty lake in the world.
   D. The Dead Sea is deadly to humans because of the high density of the water.

Questions 10-11

Public speaking is a common fear for many people. Even experienced speakers have anxiety when speaking in front of a group of people. Being nervous is perfectly normal. The important thing is how to reduce the stress. There are some tips which can help you promote successful public speaking.

First, you need to know your audience and match your content to their interests. Then, know the material and arrange what you want to say in a sequential and logical order. If you have the time, use a tape recorder or video camera to record your presentation, and then analyze your strengths and weaknesses. Before the presentation, try to relax by doing relaxation exercise to ease your tension. Visualize yourself as being confident and giving a successful speech. Finally, remember that your audience will expect you to succeed. The want you to be simulative, informative, encouraging, and interesting.

10. What is the main idea of this passage?
    A. Why public speaking is stressful.
    B. How to write a good speech.
    C. The importance of reducing stress before speaking in public.
    D. How to be a successful public speaker.

11. According to the passage, which of the following is NOT listed as one of the tips to promote successful public speaking?
    A. Visualize yourself as a successful, confident speaker.
    B. Remember that the audience is hypercritical.
    C. Know the material thoroughly.
    D. Rehearse the speech in advance.

Questions 12-15

In Japan geisha are professional entertainers who entertain guests through different types of performing arts in teahouses. They are trained in a wide range of traditional arts such as Japanese classical dancing, singing, and playing musical instruments. Geisha women are also trained to serve drinks and talk with the guests. Geisha usually continue to excel in those skills throughout their career.

Geisha usually wear their hair in a bun or a uniform style of a single comb and two pins. They also wear elegant kimonos and white makeup with red lipstick. Outside of Japan, there still remains some confusion about the nature of the geisha profession. They are different from prostitutes. A geisha is not paid for sex. However, a geisha may choose to have patron, with whom she is involved economically and sexually. Geisha do not marry throughout their career. If they choose to get married, then they must retire from the profession.

12. According to the passage, what do geisha mostly do?
    A. Serving tea at teahouses.
    B. Dancing in a theater.
    C. Performing religious ceremonies.
    D. Entertaining guests.

13. According to the passage, which of the following in NOT mentioned as geisha's skills?
    A. Playing musical instruments.
    B. Planting flowers.
    C. Dancing.
    D. Serving drinks.

14. Which of the following best describes the appearance of geisha?
    A. Geisha always dress in white kimonos.
    B. Geisha usually wear hair straight.
    C. Geisha wear white makeup with red lipstick.
    D. Modern geisha sometimes wear western gowns when performing.

15. According to the passage, which of the following statements is true about geisha?
    A. People usually think geisha are the same as prostitutes.
    B. A geisha can continue to work as a geisha after she marries her patron,
    C. Geisha are trained in a variety of traditional skills.
    D. Geisha are only found in Kyoto, Japan.

APPENDIX I
INTERVIEW QUESTIONS

In order to understand in depth the students' experience of the implementation of metacognitive reading strategies awareness in the English reading course, a face-to-face interview with the students will be conducted as a further data collection method after the experiment is complete. In conducting the interviews, the research herself served as the interviewer. The language used in the interview is participants' first language, Mandarin. The consent to the students will be obtained. The interview questions listed as following. Before the interview, I will remind the students that there is no right answer or wrong answer to the questions.

1. Please state your previous experiences in reading in English.
   請敘述您過去閱讀英文的經驗

2. Please state the reading difficulties you have had.
   請敘述您閱讀英文所遇到的困難

3. Please state the reading methods you have used.
   請敘述您閱讀英文時所使用的方法

4. Please state your attitudes towards reading in English.
   請談一下您對英文閱讀的看法

5. Please provide your view points of metacognitive reading strategies.
   請談一下您對英文閱讀後設認知閱讀策略的看法

6. Please give you comments on the training.
   請談一下您對此次的訓練課程的意見

APPENDIX J
IRB FORM

UF | Institutional Review Board
UNIVERSITY of FLORIDA

PO Box 112250
Gainesville, FL 32611-2250
352-392-0433 (Phone)
352-392-9234 (Fax)
irb2@ufl.edu

DATE: June 13, 2007

TO: Mintzu Wang
7634 SW 49th PL
Gainesville, FL 32608

FROM: Ira S. Fischler, PhD; Chair
University of Florida
Institutional Review Board

SUBJECT: **Approval of Protocol #2007-U-0581**

TITLE: Integrating Metacognitive reading strategies into secondary EFL English class

SPONSOR: None

I am pleased to advise you that the University of Florida Institutional Review Board has recommended approval of this protocol. Based on its review, the UFIRB determined that this research presents no more than minimal risk to participants. Given your protocol, it is essential that you obtain signed documentation of informed consent from each participant. Enclosed is the dated, IRB-approved informed consent to be used when recruiting participants for the research.

It is essential that each of your participants sign a copy of your approved informed consent that bears the IRB approval stamp and expiration date.

If you wish to make any changes to this protocol, *including the need to increase the number of participants authorized,* you must disclose your plans before you implement them so that the Board can assess their impact on your protocol. In addition, you must report to the Board any unexpected complications that affect your participants.

If you have not completed this protocol by **June 12, 2008**, please telephone our office (392-0433), and we will discuss the renewal process with you. It is important that you keep your Department Chair informed about the status of this research protocol.

ISF:dl

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BIOGRAPHICAL SKETCH

Min-Tzu Wang was born and raised in Kaohsiung City, Taiwan. She obtained her undergraduate education at the National Chunghwa University of Education in Taiwan, where she majored in special education and minored in English. After receiving her Bachelor of Education, Min-Tzu worked as a secondary teacher for five years. Then she was admitted as a graduate student in the School of Teaching and Learning at the University of Florida in 2001. She earned her Masters of Education from the University of Florida in December of 2003. Then she was admitted as a doctoral student at the University of Florida in 2004. Upon graduation, Min-Tzu plans to resume her secondary teaching career in Taiwan.