

**METACOGNITIVE READING STRATEGIES OF
ESL LEARNERS WITH DIFFERENT FIELD
INDEPENDENT/FIELD DEPENDENT
COGNITIVE STYLES**

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**FACULTY OF LANGUAGES AND LINGUISTICS
UNIVERSITY OF MALAYA
KUALA LUMPUR**

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LEARNERS WITH DIFFERENT FIELD
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STYLES**

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**DISSERTATION SUBMITTED IN FULFILMENT OF THE
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ORIGINAL LITERARY WORK DECLARATION

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**Metacognitive Reading Strategies of ESL Learners with Different Field Independent/Field
Dependent Cognitive Styles**

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ABSTRACT

Reading is an essential skill for ESL learners and many researchers in this area believe that it involves activities such as understanding ideas, identifying information, monitoring comprehension and evaluating the reading text. Metacognitive reading strategies which refers to thinking about the reading process, planning for reading, monitoring the reading task and evaluating how one has learned has been proven by researchers to be significant to ESL/EFL reading. This study aimed to identify the metacognitive reading strategies employed by a group of ESL undergraduate students when reading English texts. Apart from that, this study also examined the relationship between students' metacognitive reading strategies and their cognitive style of Field Dependent/Independent. A quantitative research design was conducted to collect data from 150 undergraduate first year students. CSFT (Cognitive Style Figure Test) was used to classify students into FI and FD group and SORS (Survey of Reading Strategies) was used to identify their metacognitive reading strategies. Interview with 6 students was also carried out to confirm and support the quantitative findings. The results indicated that the subjects were aware of their metacognitive strategies and use the strategies at a high-frequency level according to the established strategy usage criteria (Oxford and Burry-stock, 1995). In addition, statistically significant difference was found between FI and FD students regarding their use of Global Reading Strategies and Support Reading Strategies, hence, the use of students' metacognitive reading strategies was affected by their different FI/FD cognitive styles. Pedagogical implications of these findings were discussed in relation to metacognitive reading strategies instruction.

ABSTRAK

Membaca adalah kemahiran yang penting untuk pelajar ESL dan ramai penyelidik dalam bidang ini percaya bahawa ia melibatkan aktiviti-aktiviti seperti memahami idea-idea, mengenalpasti maklumat, memantau pemahaman dan menilai teks bacaan. Strategis membaca metacognitif yang merujuk kepada pemikiran tentang proses pembacaan, perancangan pembacaan, pemantauan dalam tugas membaca dan penilaian serta bagaimana seseorang dipelajari telah dibuktikan oleh penyelidik sebagai sesuatu yang signifikan dalam pembacaan ESL/EFL. Kajian ini bertujuan untuk mengenal pasti strategi metakognitif pembacaan yang digunakan oleh kumpulan pelajar sarjana muda ESL apabila membaca teks-teks bahasa Inggeris. Selain itu, kajian ini juga mengkaji hubungan antara strategi pembacaan metakognitif pelajar dan gaya kognitif bergantung/bebas mereka. Reka bentuk kajian secara kuantitatif ini dijalankan dengan mengumpul data daripada 150 mahasiswa tahun pertama. CSFT (*Cognitive Style Figure Tes*) digunakan untuk menggolongkan pelajar ke dalam kumpulan FI dan FD dan SORS (*Survey of Reading Strategies*) digunakan untuk mengenalpasti strategi pembacaan metakognitif mereka. Temubual dengan 6 pelajar-pelajar juga dijalankan untuk mengesahkan dan menyokong dapatan kuantitatif. Keputusan menunjukkan subjek mengetahui strategi metakognitif mereka dan menggunakan strategi-strategi pada tahap frekuensi yang tinggi mengikut kriteria penggunaan strategi yang mantap (Oxford and Burry-stock,1995). Di samping itu, terdapat perbezaan yang signifikan secara statistik antara pelajar FI dan FD dan penggunaan strategi membaca secara Global dan strategi membaca secara Sokongan; penggunaan strategi pembacaan metacognitif pelajar dipengaruhi oleh perbezaan gaya kognitif FI/FD mereka. Perbincangan

mengenai implikasi dari sudut pedagogi, hasil daripada dapatan ini, akan dikaitkan dengan strategi pembacaan metacognitif.

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TABLE OF CONTENT

	Page
Abstract	iii
Abstrak	iv
Acknowledgement	vi
Table of Content	vii
List of Figures	xii
List of Tables	xiii
List of Symbols and Abbreviations	xiv
List of Appendices	148
 CHAPTER 1: INTRODUCTION	
1.1 Overview	1
1.2 Background of the Study	2
1.3 Statement of the Problem	5
1.4 Research Objectives	7
1.5 Research Questions	8
1.6 Significance of the Study	8
1.7 Limitations of the Study	10
1.8 Definition of the Terms	11
1.9 Chapter Summary	13

CHAPTER 2: LITERATURE REVIEW

2.1 Overview	15
2.2 Second Language Reading Theory	15
2.2.1 The Nature of Reading	15
2.2.2 Reading Strategies	16
2.2.3 Reading Model Theory	19
2.3 Cognitive Style and FI/FD Constructs	20
2.3.1 Definition and Features of Cognitive Style	21
2.3.2 Field Dependent/Independent Constructs	23
2.3.3 Measurement of FI/FD Cognitive Styles	28
2.3.4 Related Studies of FI/FD in SLA	29
2.3.5 Related Studies of FI/FD with Reading Comprehension	31
2.4 Metacognition and Metacognitive Strategies	32
2.4.1 The Nature of Metacognition	32
2.4.2 The Components of Metacognition	33
2.4.3 The Identification of Metacognitive Strategies in Reading	35
2.4.4 Empirical Studies of Metacognitive Strategies in Reading	41
2.5 Chapter Summary	47

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Overview	49
3.2 Research Design	49
3.3 Research Instruments	51

3.3.1 Cognitive Style Figure Test (CSFT)	51
3.3.2 Survey of Reading Strategies (SORS)	53
3.3.3 Research Instrument for Qualitative Data	56
3.4 Participants of the Study	58
3.4.1 Sampling Criteria	58
3.4.2 Sampling Method	59
3.4.3 Research Sample for Quantitative Study	60
3.4.4 Research Sample for Qualitative Study	63
3.5 Pilot Study	64
3.6 Data Collection Procedure	65
3.6.1 Quantitative Data Collection	65
3.6.2 Qualitative Data Collection	66
3.7 Data Analysis Method	67
3.8 Ethical Considerations	70
3.9 Chapter Summary	71
CHAPTER 4: RESEARCH FINDINGS	
4.1 Overview	72
4.2 Participants' Usage of Metacognitive Strategies in Reading English Texts	73
4.2.1 Quantitative Analysis of Students' Metacognitive Reading Strategies	75
through Questionnaire Survey	
4.2.1.1 The Usage of Problem Solving Strategies	76
4.2.1.2 The Usage of Global Reading Strategies	77

4.2.1.3 The Usage of Support Reading Strategies	79
4.2.2 Qualitative Analysis of Students' Metacognitive Strategies through Semi-structured Interview	81
4.3 The Differences between Metacognitive Strategies Used by FI and FD Students	90
4.3.1 Quantitative Analysis of the Difference between FI and FD Students Regarding Metacognitive Strategies	90
4.3.1.1 Global Strategies Used by FI and FD Students	92
4.3.1.2 Support Strategies Used by FI and FD Students	95
4.3.1.3 Problem-Solving Strategies Used by FI and FD Participants	96
4.3.2 Qualitative Analysis of the Differences between FI and FD Participants Regarding Their Metacognitive Strategies	97
4.3.2.1 Reading strategies preferred by FI Group	98
4.3.2.2 Reading Strategies Preferred by FD Group	101
4.4 The Relationship between FI/FD Cognitive Styles with Participants' Metacognitive Reading Strategies	104
4.5 Chapter Summary	108
 CHAPTER 5: DISCUSSION AND CONCLUSION	
5.1 Overview	111
5.2 Discussion of the Main Findings	
5.2.1 The Metacognitive Reading Strategies of Malaysian First Year Undergraduate Students	111
5.2.2 The Differences between FI and FD Students Regarding	

Their Metacognitive Reading Strategies	114
5.2.3 The Relationship between Students' FI/FD Cognitive Styles And Their Metacognitive Reading Strategies	118
5.3 Implications of the Study	119
5.3.1 Raising Awareness of FI/FD Cognitive Styles in Learning and Teaching	119
5.3.2 Raising Awareness of Metacognition and Metacognitive Strategy Training	122
5.4 Recommendations for the Future Studies	124
5.5 Conclusion	124
References	127
Appendix	148
Appendix A Confirmation letter from Language Unit, Languages and Linguistics Faculty, University of Malaya	148
Appendix B Subjects Information Sheet	149
Appendix C Consent form	150
Appendix D Cognitive Style Figure Test (CSFT)	151
Appendix E Survey of Reading Strategies (SORS)	158
Appendix F Interview Guideline	160
Appendix G Interview Transcription	162

LIST OF FIGURES

Figures

Figure 2.1	The Recursive Model of Metacognitive Strategies	39
Figure 3.1	Percentage by Age of the Participants	60
Figure 4.1:	Percentage of Participants' Metacognitive Strategies	75

LIST OF TABLES

Tables

Table 2.1 Comparison between FI and FD Cognitive Style	25
Table 2.2 Principal Characteristics of FI/FD Cognitive Style	25
Table 2.3 Sub-strategies of the Recursive Model of Metacognitive Strategies	39
Table 3.1 Language Courses of Participants	59
Table 3.2 Academic Major of the Participants	62
Table 4.1: Participants' Mean Scores of Metacognitive Strategies in Reading	73
Table 4.2: Problem Solving Strategies (N=150)	76
Table 4.3: Global Strategies (N=150)	77
Table 4.4: Support Strategies (N=150)	79
Table 4.5 Strategies Employed by Six Interview Respondents	82
Table 4.6: The Overall Usage of Metacognitive Reading Strategies by FI and FD Participants	91
Table 4.7: Global Strategies used by FI and FD participants	92
Table 4.8: Support Strategies used by FI and FD participants	95
Table 4.9: Problem-Solving Strategies used by FI and FD participants	96
Table 4.10: Chi-square test for the overall usage of metacognitive reading Strategies between FI and FD participants	105
Table 4.11: Chi-square test for the Global reading strategies of FI and FD participants	106
Table 4.12: Chi-square test for the Support strategies and Problem Solving Strategies of FI and FD participants	107

LIST OF SYMBOLS AND ABBREVIATIONS

CSFT	Cognitive Style Figure Test
ESL	English as a second language learner
FD	Field Dependent
FI	Field Independent
SLA	Second Language Acquisition
SORS	Survey of Reading Strategies

CHAPTER 1: INTRODUCTION

1.1 Overview

Studies in second language acquisition that are particularly related to individual differences in learning have increased significantly in the past few decades. Researchers which focus on English learning and teaching have also witnessed a remarkable shift from teaching-oriented pattern to learning-oriented pattern. It is known that reading plays an essential role in English language acquisition; therefore, more researchers nowadays pay attention to reading and seek approaches that can help learners' reading comprehension. One of the important ways to enhance reading comprehension is through the use of appropriate reading strategies. For example, metacognitive reading strategies have been proven to improve reading comprehension among both first and second language learners (Carrell et al., 1998; Sheorey & Mokhtari, 2001; Zhang, 2001; Zhang et al., 2009).

There are two main reasons for studying metacognitive reading strategies. Firstly, metacognition and metacognitive knowledge enable learners to be active and constructively responsive individuals who could take charge of their own learning process (Eggen & Kauchak, 1995). Secondly, previous studies have shown that metacognitive strategies play a more significant role than other learning strategies because once a learner understands his/her own learning strategies, language acquisition could proceed at a faster rate (Anderson, 2003). Thus, this study attempts to explore the

use of metacognitive strategies employed by Malaysian undergraduates in reading English texts.

In addition, some studies such as Cohen (1990), Macintyre and Gardner (1989), Reid (1987) have found that many factors like motivation, previous experience, learning style and cognitive style could affect the learners' choice of different learning strategies. Among those factors, cognitive style, especially how it affects learners' choice of metacognitive learning strategies is rarely studied. Hence, this study also attempts to examine how learners' different cognitive style in Field Independence (FI) and Field Dependence (FD) relates and affects their use of metacognitive reading strategies.

This chapter presents (a) background of the study, (b) statement of the problem, (c) research aims and objectives, (d) research questions, (e) significance of the study, (f) limitations of the study and (g) definition of terms.

1.2 Background of the Study

In the field of applied linguistics, there is a remarkable shift from teaching to learning. An increasing number of researches have been focusing on language learners' individual differences; how these learners learn a second language and how they improve their language ability through time (Littlewood, 1990). According to Dong Qing (2004), the studies on learner differences in language learning is one of the important areas of second language acquisition as this area has contributed the most in

the literature. Researchers started to explore language acquisition from more diversified perspectives such as psychology and cognitive linguistics. From psycholinguistic point of views, the studies of language learning process, differences among learners and language learning that are related to the brain are the three main research interests (Muriel, 2006). Researchers usually address questions regarding individual differences such as “(1) how learners differ from one another?”, and (2) “how the differences affect the process of acquiring a second language?” (Ellis, 1994).

In studies of learner differences, factors such as gender, age, aptitude, motivational level and cognitive style are all very important variables which may influence the learning process (Mokhtari & Reichard, 2004). Among these factors, the learner’s cognitive style is described as the way in which language learners organize and process new information (Messick, 1976). Field Independent (FI) and Field Dependent (FD) as one of the constructs of cognitive style has been mostly studied and considered very important in the process of acquiring a second language (Altman, 1980; Skehan, 1989; Long, 1991 and Ellis, 1994). FI/FD cognitive styles were first introduced by Witkin et al in 1940s, and they stated that FI and FD cognitive styles refer to the degree “to which the organization of the prevailing field dominates perception of any of its parts” (Witkin et al., 1971, p.7). FI people are described to be more likely to rely on internal cues and are able to think analytically, whereas FD people are inclined to rely on external cues and are more likely to be affected by external environment.

In the learning of a second language, it is acknowledged by many researchers (Grabe, 1991; Bernhardt, 2000; Tierney, 2005; Ahmid and Hairul, 2012) that among the four learning skills, reading has been regarded as the most complex cognitive process involving many activities in mind such as understanding content, identifying information, monitoring comprehension and evaluating reading process (Mohamad Maasum, 2012). Furthermore, reading requires the learners to connect their linguistic knowledge with their cultural background, schemata and individual psychological differences. However, previous researchers have indicated that the reason for learners' less competence in reading is most probably due to the learners' lack of knowledge in a his/her own cognitive process which is known as metacognition (Mohamad Maasum, 2012).

According to Flavell (1979), metacognition refers to the knowledge, awareness and control of one's thinking and learning process. He described metacognition as the awareness of how learning process happens; awareness of when one does or does not understand information; knowledge of how to use available information for better understanding; ability to judge the cognitive demands of a particular task; knowledge of what strategies to use for what purposes; and assessment of the whole learning process. Brown, Armbruster, and Baker (1986) mentioned that metacognition plays a vital role in reading. By using metacognitive reading strategies, readers are able to plan before reading, monitor and solve problems during reading, and evaluate after reading. As a result, these strategies can lead to better understanding and interpretation of the written words.

With all said and done, metacognitive reading strategies have received significant interest from both first language and second language teachers and learners. Many researchers have proven metacognitive strategies to be effective in improving reading comprehension (Rahman, S, 2010; Ghyasi te al, 2011; Maasum, & Maarof, 2012; Wang, et al., 2014) Thus, it could be said that the studies of students' metacognition and metacognitive strategies are leading a new research interest. Meanwhile, learners' individual differences such as their different FI/FD cognitive styles also play an important role in their learning. Cohen (1998) pointed out that the reading strategies selected by individual learners might reflect their cognitive style as it influences how they perceive and decode information. Therefore, it is necessary to examine the roles of FI/FD cognitive styles in learning and their relationship with the metacognitive reading strategies.

1.3 Statement of the Problem

Malaysia is a multilingual country where Bahasa Malaysia is the national language while English is the second official language (Stephen, 2013). In this country, English is widely used in education, business, law and work places. Mastery of English has become a must as it increases graduates' opportunity to be employed by multinational companies (Hashim & Isa, 2012). However, English is not the first language for majority of the students in Malaysia, thus, many are still incompetent in using the language, as reported by Lee (1994), Jamaliah and Faridah (2001). They found that the English competency of Malaysian undergraduates is far from being satisfactory.

According to Lee (1994), 84.2% of Malay undergraduates in his study claimed that it was very difficult to read professional journal and textbooks. Additionally, Jamaliah and Faridah (2001) who conducted a research among 1117 Malay undergraduates in University of Malaya found that 59.9% of the respondents reported that reading was difficult for them, especially when the materials were academic texts. Another study done by Imran Ho (2001) indicated that reading difficulty in academic texts is the most prominent for ESL students make the transition from secondary level English to advanced level of English to meet the needs of university requirements. For this reason, most universities require first year undergraduates to enroll in English language proficiency courses, especially those that could enhance learners' reading skills (Darmi & Albion, 2013). As a consequence, more researches related to improving second language learners' reading competence at tertiary level are needed.

Additionally, in the review of previous literature on English reading, many researches on investigating how reading strategies work in improving reading comprehension have been conducted. As mentioned in the background of the study, employing metacognitive reading strategies has become a new trend and proven to be effective in facilitating reading comprehension especially for ESL learners (Ahmadi et al., 2013), but studies on metacognitive reading strategies were mostly conducted in countries where English is used as a foreign language (.e.g. Tajalli & Satari (2013), Liliana & Lavinia (2011), Zhang & Wu (2009). There are very few studies related to metacognitive awareness and use of metacognitive strategies in Malaysian context among Malaysian ESL learners. Therefore, it is necessary to do such study in Malaysia to benefit Malaysian ESL

learners.

Apart from that, studies in the area of individual differences are usually concerned with separate factors, such as Carter (1988) and Jamieson (1992) where both examined how learners with different cognitive style perform differently in their learning style. Not many researchers investigated the relationship between cognitive style and use of strategies in learning and how a certain type of cognitive style affects the learner's use of specific learning strategies. Therefore, it raises the need to investigate the role that cognitive style plays in the choice of using reading strategies. Furthermore, among the dimensions of cognitive style, FI/FD cognitive styles have been considered as the most important constructs that have shown a strong relation to second language acquisition (Naimie, Abuzaid, Siraj, Shagholi and Hejaili, 2010). Hence, it increases the necessity to investigate the relationship between FI/FD cognitive styles and ESL learners' metacognitive reading strategies.

1.4 Research Objectives

This study has two main objectives; the first objective is to identify the employment of metacognitive reading strategies of Malaysian undergraduates by examining the kinds of metacognitive reading strategies they prefer in reading English texts. Its aim is to increase students' awareness of metacognition and the use of metacognitive strategies in their reading comprehension. The second objective is to investigate the relationship between FI/FD cognitive styles with the students' metacognitive strategies employed in

reading by examining the differences of reading strategies employment between FI and FD students. This is to help students to understand their own cognitive style so that they will have more consideration in choosing the most appropriate reading strategies to improve their reading comprehension.

1.5 Research Questions

Based on the research objectives, the following three research questions are formulated:

- (1) What are the metacognitive reading strategies employed by Malaysian undergraduate students?
- (2) How are FI and FD learners different in their choice of metacognitive reading strategies?
- (3) What is the relationship between students' FI/FD cognitive styles with their metacognitive reading strategies?

1.6 Significance of the Study

The number of ESL learners who read materials and information in English is increasing year by year (Sheorey & Mokhtair, 2008). Many researchers suggest that metacognition is an essential component for ESL students' reading comprehension. Besides, metacognitive awareness and metacognitive strategies are proven to be the two elements for successful learners, especially for those who engaged in reading English texts (Anderson, 2008; Mokhtari & Sheorey, 2008). However, the results of those

studies are still inconsistent and lacking, especially in the Malaysian context. Some ESL students may have never heard about metacognition and are not aware of the importance of metacognitive strategies. They may not know how to use these strategies and when to use them. Thus, educators and teachers need to consider how to raise learners' metacognitive awareness and how to offer more effective ways in improving ESL learners' reading competency.

In other words, this study not only aimed in making contribution to theoretical study but also intended to contribute in teaching practice. During this research, students will be made to realize their preference of certain reading strategies and how often they employ these strategies. As a result, students were made to be more aware in using their metacognition in learning process. Moreover, when students are able to understand their reading process more comprehensively they will be able to improve their reading comprehension. The investigation to learners' metacognitive strategies in reading is actually in accordance to the new education trend which emphasizes on self-efficacy. Learners who have higher self-efficacy possess the abilities to manage and take control of their learning activities, use more strategies and have better performance (Bandura, 1986).

This study has also added some understanding to individual difference in terms of how learners' different field dependency in cognitive style affects their employment of different reading strategies. Students will understand better about their own cognitive style and realize the advantages and disadvantages which are brought by it. Furthermore,

teachers will be more informed of students regarding how they perceive the decoded information. Consequently, they are able to improve their teaching methods and help each student to enhance his/her reading comprehension by choosing the most appropriate reading strategies. Briefly, this study enables learners and teachers to further understand the nature of reading process and pay more attention to the individual differences in learning.

Finally, it is anticipated that the finding of this study will benefit curriculum designers in developing reading courses and organizing reading activities to better meet the needs of each individual who has a different cognitive style.

1.7 Limitations of the Study

The results of this study may not be necessarily generalized to all undergraduates in Malaysia since the sample size was small and localized in University of Malaya only. There were only 6 participants who were selected for the qualitative study as students at that time were busy with preparing for their final exams when the interview was conducted. Hence they did not want to spend time to be interviewed.

This study only examined one variable of individual differences which is the cognitive style. Without considering other variables such as language proficiency level caused another limitation. In the present study, although the participants are considered having similar language proficiency level as most of them entered University of Malay under

the requirement of obtaining Band 3 or 4 in their MUET English test, there might be some students who have better or poorer English language proficiency which might affect the findings of the research. Other influential variables such as learning anxiety, motivational level and cultural background should also be taken into consideration in future study.

Apart from that, the instrument called SORS was developed by Mokhtari and Sheorey in 2002 and has been adopted by many previous studies such as Ghyai et al (2011), Yuksel & Yuksel (2012), Magogwe (2013) to identify learners' metacognitive reading strategies. Although this instrument was reported to be reliable and valid, there is still a possibility that this instrument fails to present a comprehensive list of strategies used by test takers. The reason is because self-reported questionnaire might not be able to catch a whole picture, thus, researchers usually adapt multi instruments such as field-notes, interview, think aloud protocol and test instead of using only one instrument.

1.8 Definition of Terms

English as a Second Language (ESL) refers to “situation in which English is being taught and learned in countries, contexts and cultures where it is the predominant language of communication” (Cater & Nunan, 2001, p.2).

Metacognition generally refers to “a person's knowledge about their own thinking processes or procedures” (Flavell, 1976, p.232). Nelson (1996) defines metacognition as

the human ability to be conscious of one's mental process. Also, metacognition is a form of cognition and a high level thinking process that involves active control over cognitive processes (Wenden,1998).

Metacognitive strategies in reading are approaches involved in the reading process which help readers to plan before learning, monitor the process while learning, and evaluate how one has read after reading (Maasum & Maarof, 2012).

Reading is described as an interactive process in which readers constantly interact with reading texts. It is a complex system of generating meaning from words. During reading, readers actively form hypothesis, test predictions and use their knowledge to construct meaning (Carrell, 1989; Zhang, 2001).

Cognitive style refers to “variations among individuals in the preferred way of perceiving, organizing, or recalling information and experience” (Stansfield and Hansen, 1983, p.263). Witkin, Oltman, Raskin and Krap (1971, p.3) also define cognitive style as “self-consistent modes of functioning which individuals show in their perceptual and intellectual activities.”

Field Dependent/Field Independent Cognitive Style is one construct of cognitive style.

Witkin, Oltman, Raskin and Krap (1971, p.3) describe them as following: “in the field-dependent mode of perceiving, perception is strongly dominated by the overall organization of the surrounding field and parts of the field are experienced as ‘fused’. In

a field-independent mode of perceiving, parts of the field are experienced as discrete from the organized ground”.

1.9 Chapter Summary

This study attempts to identify the metacognitive reading strategies of Malaysia first year undergraduate students who are different in FI/FD cognitive styles and to investigate the relationship between cognitive styles of Field Dependency with students’ metacognitive strategies in reading English academic texts. The first chapter gave a brief introduction to this study, including the background of the study, the rationale for conducting this study, the specific research questions, the contribution that this study will make as well as the limitations which can be improved in future.

Chapter 2 will bring the literature review which contains two main parts. The first part is to introduce the key concepts or key terms involved in this study, they are Second language reading theory, reading process model, reading comprehension, cognitive style and FI/FD constructs, metacognition and metacognitive strategies. The second part shows previous relevant works concerning these key concepts.

Chapter 3 will deal with the specific design of this study. This chapter will introduce the whole research design, the research participants, the instruments that have been employed and the procedure or approach to collect data. Lastly, data analysis method will be provided.

Chapter 4 will focus on reporting statistical results from quantitative and qualitative study. The description of metacognitive reading strategies used by the participants will be described, students' answers from the interview will be provided to validate the quantitative findings. This chapter will also present the relationship between students' FI/FD cognitive styles and their metacognitive reading strategies.

Chapter 5 will present a discussion of the findings and make a conclusion. It will also talk about the pedagogical implication for students, teachers and materials designers. Finally, suggestions for improving this study and for future researchers are discussed.

CHAPTER 2: LITERATURE REVIEW

2.1 Overview

This chapter reviews the related literature regarding three aspects which are reading theory, cognitive style and metacognition theory. Firstly, the literature on the importance of reading and reading strategies are provided, explanation of factors in individual difference which influence reading comprehension are demonstrated. Secondly, theories of cognitive style, Field-dependent/Field-independent constructs and empirical studies of cognitive style and FI/FD constructs in SLA are discussed. Lastly, metacognition theory and metacognitive strategies in reading comprehension are presented.

2.2 Second Language Reading Theory

This section begins with defining the nature of reading to bring out that reading is an interactive process where readers process information and construct meaning from the reading texts. Then, it discusses how reading strategies help readers in improving reading comprehension and how metacognitive reading strategy plays its role in reading process. Lastly, the section introduced three reading models to further explain why readers with different ways of processing information tend to employ various and different types of reading model and strategies.

2.2.1 The Nature of Reading

Research on reading holds an important place in first or second language learning as

well as teaching. For many language learners, reading is widely accepted as the most useful and important skill in learning English as a Second Language (Carrell, 1989).

According to Nuttal (1998), reading is the process of constructing and working with meaning, and it specifically involves the meaning transferred from mind to mind and from the author to individual readers. In addition, researches on reading have illustrated a significant relationship between reading and psychology. In the early twentieth century, psychologist Huey (1908) suggests that reading process is about constructing meaning out of the written text which involves psychological, linguistics, and social dimension. Modern psycholinguistics and cognitive linguistics have seen reading as a complicated activity that involves an active thinking. Goodman (1975) points that “reading is a psycholinguistic guessing game which starts with a linguistic surface representation encoded by a writer and ends with meaning which the reader constructs” (p.135). Anderson (2003) further suggests that reading is an interactive process among readers, texts, the fluent reading ability and strategic reading. In general, reading involves the interaction in which a reader actively interacts with the written text. In fact, most reading activities happen in the reader’s mind. Therefore, readers might encode textual information and select approaches to enhance their reading comprehension on their own.

2.2.2 Reading Strategies

In a reading process, researchers have found that readers usually apply various strategies and approaches to help them understand the written texts because reading

comprehension requires readers to employ conscious and unconscious strategies to solve problems (Paris, Wasik, & Turner, 1991). Therefore, using reading strategies is an essential method to achieve reading goals. Researches on reading strategies have been of great importance since the 1970s. Different researchers have given various definitions of reading strategies. Winograd and Hare (1998) defines reading strategies as “deliberate actions that readers take actively to develop an understanding of what they read” (p.275). On the other hand, Singhal (2001) points those reading strategies “indicate how readers conceive a task”, help them to understand and guide them to comprehend. Based on the definitions given, reading strategies can be clarified as reader-oriented, conscious problem-solving activities which enable readers to better understand a text.

Additionally, the study of reading strategies is one component of O’Malley and Chamot’s learning strategy research because learning strategies provide a general framework to the sub-learning strategies like reading, writing and listening (O’Malley, Chamot, Stewener-Mazanares, Russo and Kupper, 1985). O’Malley and Chamot (1990) provide the most comprehensive identification of learning strategies and they categorize learning strategies into three groups, namely the cognitive strategies, metacognitive strategies and social/affective learning strategies. Accordingly, metacognitive strategies emphasize on strategies that involve “thinking about the learning process, planning for learning, and self-evaluation after the learning activity has been completed” (O’Malley and Chamot, 2001, p.8). Meanwhile, cognitive strategies work more directly with the learning task, and this helps learners to manipulate and transform the learning materials.

Finally, social/affective strategies are related with social-mediating activity and transacting with others. Cooperation and question for clarification are the main social/affective strategies (Brown, 1987, p.93). Among the three strategies mentioned, the present study focuses on metacognitive strategy since it has become one of the most effective approaches in improving reading comprehension of learners in SLA (Ahmadi, M. R., Ismail, H. N., & Abdullah, M. K. K, 2013).

Many factors may influence the use of reading strategies such as age, sex, motivation, cognitive style or language proficiency. Brown et al. (1983) claimed that older children or adults are prone to use more generalized strategies while young children often use lesser and simpler ones. This demonstrates that age strongly affects the preference of strategies. In terms of gender, studies done by Polizer (1983) and Ehrman and Oxford (1989) report that more social strategies are applied by females than males, and most females prefer to use communication strategies and they are good at formal rule-based strategies and general study strategies. Apart from age and gender, motivation has also been found by some researchers as influential in the choice of strategies (e.g. Gardner, 1985; Oxford and Nyikos, 1989). They point out that highly motivated learners use more strategies related to formal practice than poorly motivated learners.

Apart from the above factors, scholars such as Oxford (1990) and Cohen (1998) point out that learners' use of learning strategies is always under the influence of their cognition which determines how they process and decode information. However, among all the factors which have impacts on reading, cognitive style is rarely taken into

account and there are only a few studies that combine both cognitive style and learning strategies together such as Sadeghi and Langhroudy (2012). For this reason, the present study will focus on the cognitive style to examine how ESL learners' cognitive style influences their reading strategies.

2.2.3 Reading Model Theory

In the research area of cognitive psychology, reading process attracts a lot of attention and researchers found that the reading models can be used to explain different reading behavior and performance (Ahmadi, M. R., Ismail, H. N., & Abdullah, M. K. K. 2013). So far, there are three types of reading model: the bottom-up model, the top-down model and the interactive model (Gough, 1972; Eskey, 2005; Ahmadi and Pourhossein, 2012).

The first is the bottom-up model. This model was first introduced in 1960s based on traditional linguistics. It suggests that readers construct meanings from each letter, individual word, phrase and sentence found within the written text and then process it together until the understanding becomes meaningful. This model analyzes reading information from the small units and gradually added to the next stage to come up with meaningful picture.

The second is the top-down model. This model was put forward based on cognitive psychology. Goodman (1967) states that reading is a "psychological guessing game"

whereby the readers continuously form hypotheses and then use the meaningful information they get from the text to confirm their guesses. In other words, the top-down theory actually starts with readers' hypotheses or predictions about the text, and they will then search the meaningful information to confirm the hypothesis (Urquart and Weir, 1998).

The final is the interactive model. This model combines the features of both bottom-up and top-down models which emphasize the interaction between a reader and an author, between background knowledge of readers and the written language information. Hence, this model gives the most comprehensive and acceptable description of the reading process.

By understanding these three reading model, it is clearer why readers approach differently in their reading process and choose different reading strategies to solve reading problems. The reading models and strategies employed by readers are strongly related to individual learner differences. Learners with different ways of processing information tend to employ various and different types of reading model and strategies.

2.3 Cognitive Style and FD/FI Constructs

This section reviews how previous works define cognitive style and the features of cognitive style, followed by introducing one of the constructs in cognitive style which is FI/FD constructs. Besides that, it also provides the measurements of classifying FI/FD

cognitive style and reviews related studies of FI/FD in Second Language Acquisition and English reading.

2.3.1 Definitions and Features of Cognitive Style

In SLA studies, considerable importance has been given to individual differences, and among these differences, cognitive style shows its influence but it has rarely been studied. First of all, the various definitions of cognitive style are explained.

The concept of cognitive style initially came from the extension of term “life-style” (Allport, 1937). Brown (1994) defines style as “a term that refers to consistent and rather enduring tendencies or preferences within an individual” (p.104). Riding et al. (1998) points out that “style” differs from person to person and it controls the ways in which individual responds to the events and ideas he/she is experiencing or experienced. With the development of research in psychological linguistics and cognitive psychology, more and more studies have claimed a more specific term which is cognitive style. Wiktin et al. (1962) first provided the description of cognitive style, and they claim that it refers to one individual’s consistent preference or approach to organizing and processing information while thinking. They further explained in 1977 that cognitive style refers to individual differences in terms of how they perceive stimuli, think inputting, solve problems, and process information. Ellis (1985) claims that cognitive style “refers to the manner in which people perceive, conceptualize, organize and recall information” (p.114).

From the above definitions, it can be concluded that cognitive style is a characteristic mode that can be found in each individual's perceptual or intellectual activities; it reflects systematic differences in which an individual approach a learning task and solve a learning problem. It is also relatively stable over a certain period of time. As it is known, learners with different cognitive style possess different interests, personalities, which to a certain extent may affect or even determine their attitude towards different learning tasks. Therefore, by studying an individual's cognitive style, people can get some ideas of one's disposed and habitual of processing, comprehending, remembering, analyzing and utilizing information.

Features of cognitive style are presented in the related studies. Firstly, cognitive style is a stable trait which is gradually built up by individuals, and it is hard to change once it has become a person's characteristic. The second feature is expansibility. Researches showed that majority of people will become more considerate, introverted, and analytic with the growth of their age, and this means that their cognitive style also develops along with the age. Finally, cognitive style is diffusive; it may affect an individual's learning activities, emotions, decision-making, and other social conducts. It can affect individuals in a serial activity from cognition to behavior.

Additionally, cognitive styles differ from one individual to another, and it generates different forms within different circumstances and learning tasks. There are four widely-acknowledged cognitive styles which include field-dependence versus field-independence, Global versus Particular, Deductive versus Inductive, and Impulsive

versus Reflective theories (Hansen, 1984). These dimensions are not extreme type and people usually have certain preference towards either type. For example, a person may be more field-dependent but less field-independent, but it is unlikely to find an extreme field-dependent or field-independent person.

2.3.2 Field Dependent/Field Independent Constructs

Among all the constructs of cognitive style, the dimension of field-dependent and field-independent has emerged as one of the most widely-studied constructs with the broadest applications to issues in educational area (Messick, 1976).

Criffiths and Sheen (1992) report that the interest in field dependency was first raised in the observations of World War II pilots who were suffering from confusion when they wanted to gauge the actual size of a landmark. This phenomenon made researchers explore it from individual perspectives. They found that there are many particular ways of processing information based on individual differences when dealing with different situations. Wiktin et al. (1975) defined Field dependence/Field independence as the level where an individual is able to distinguish some parts separately within a field from the main context. They further state that field-independent style is the ability to perceive a particularly relevant item or factor in the field of distracting items, while field-dependent style refers to “the tendency to be dependent on a total field so that parts embedded within the field are not easily perceived through the total field” (Brown, 1993, p.106).

More specifically, FI/FD cognitive style describes the degree to which an individual's perception or comprehension of information is affected by the surrounding perceptual or contextual field. In general, those who tend to rely on internal cues and are more able to differentiate a hidden figure from an organized field are recognized as field independent people, and those who tend to rely on external cues and are less able to differentiate the hidden figures are recognized as field dependent people (Witkin and Goodenough, 1977).

Learners with FI and FD styles tend to process information in distinctive ways. There are many previous works that looked at the comparison between FI and FD learners. One of the works done by Saracho and Spodek (1981) analyzes the different characteristics of FI and FD cognitive styles. Ellis (1985) also summarizes the principal characteristics in the following Tables 2.1 and 2.2.

Table 2.1 Comparison between FI/FD cognitive styles (Saracho and Spodek, 1981, p.154)

Field-dependent individuals	Field-independent individuals
1. Rely on the surrounding perceptual field	1. Perceive things as separate from the field
2. Experience their environment in a relatively global fashion by conforming to the influence of the field or context.	2. Can separate an item from the surrounding field and solve problems that are arising and reorganized in different contexts
3. Rely on authority and make judgment according to patterns	3. Experience an separation from authority which leads them to rely on their own standards and values
4. Search for external cues in those around them as a source of information	4. Are oriented towards active striving
5. Are strongly interested in people	5. Are oriented towards active striving
6. Being closer to the person with whom they are interacting	6. Are socially detached but better at analyzing
7. Being sensitive to others which helps them to acquire social skills	7. Less sensitive to others which helps them to acquire social skills
8. Prefer occupations which require participation with others.	8. Prefer activities that allow them to work by themselves

Table 2.2 Principal Characteristics of FI/FD (Ellis, 1985, p.115)

Field Dependent	Field Independent
1. Personal orientation i.e. Reliance on external frame of reference in processing information	1. Impersonal orientation i.e. Reliance on internal frame of reference on processing information
2. Holistic i.e. perceives a field as a whole; parts are fused with background	2. Analytic i.e. perceives a field in terms of its component parts; parts are distinguished from background
3. Dependent i.e. the self-view is derived from others	3. Independent i.e. sense of separate identity
4. Socially sensitive i.e. greater skill in interpersonal/social relationships	4. not so socially aware i.e. less skilled in interpersonal/social relationship

As displayed in the two tables, field independent people are impersonal oriented, holistic, independent and socially unaware; while field dependent people are personal oriented, analytic, dependent and socially sensitive. They are also different in the aspects of information processing, learning achievement and human relations. However, both FI and FD learners have their advantages and disadvantages in the process of language learning.

Firstly, FI and FD learners process information in different ways. FI learners are analytical thinkers who are more sensitive to internal references and prefer analytical method toward information. Witkin et al. (1962) and Ellis (1985) indicate that FI learners are more able to decompose a unity into elements and put a stress on each component. These FI individuals have no difficulties in separating the most essential information from the text and they are more likely to be influenced by internal cues rather than external conditions. In addition, those who belong to FI construct tend to select a focus-prominent, systematic, sequenced and gradually-accumulated learning method, and they are considered to be an excellent information processor when they are exposed to complicated language phenomenon.

Compared to FI learners, FD learners are called global thinkers who process information in a holistic way. According to Frank and Davis (1982), this type of individuals would pay less attention to details and they need more external references to support when learning. The characteristic of FD is that they often have difficulties in separating a situation into its components.

The second distinctive feature is that FI and FD individuals show their differences in learning achievement. They perform differently in different learning situations. FI learners are found to be better at activities like finding patterns, organizing data, making a generalization as well as learning rules. They are more successful in formal classroom learning activities that require analysis, attention to details, and dealing with complex materials. On the contrary, FD learners might perform better in the learning environment where good influence from teachers and peers are available. Besides, FD learners are also good at activities that need discussion and communication such as pair work and group work (Jamieson, 1992). They are more dependent on teachers' instruction and guidance instead of planning their own learning process.

Apart from that, FD and FI learners are also different in human relations. Ellis (1985) suggests that field dependent people are impersonal oriented since they are more social. They feel more comfortable around people and are involved in social activities. Meanwhile, FI people are personal oriented, and they would do better at non-communication and intellectual tasks because they are more independent, comparative and reflective.

In short, by understanding the distinctive features of FI and FD learners, educators and teachers might make full use of the learners' advantages to encourage them, facilitate learning, and avoid the negative impacts of applying inappropriate teaching and learning methods.

2.3.3 Measurements of FI/FD Cognitive Styles

There are series of Body Adjustment Test which determines the FD/FI cognitive style, but the three types of test that take the dominant place are: the Rod and Frame Test (RFT) (Nyborg, H. 1974), Embedded Figure Test (EFT) and Group Embedded Figure Test (GEFT) (Witkin H.A, 1971). All of these measurements require the test takers to distinguish a hidden figure from its surrounding field.

In the early work, experts attempted to replicate the conditions experienced by pilots who flew through low cloud formation to measure individual's degree of field dependence. The version of Rod and Frame Test (Nyborg, H. 1974) involves an individual being seated in a completely darkened room where he was asked to view a tilted luminous rod, with a tilted luminous frame. The tester was then asked to disregard the frame, and adjust the rod until it was in a totally upright position. This test is easy to design but difficult to operate. Later on, the instrument was further developed into a pencil-paper assessment called Embedded Figure Test (Witkin H.A, 1971) which contains 12 items displaying complex and simple figures. On the basis of this EFT, Witkin, Oltam, Raksin and Krap (1971) developed the Group Embedded Figures Test (GEFT) to examine the degree of field dependence which is the foundation of FI/FD measurement in this paper. The GEFT test contains 25 items and requires the distinguishing of a simple shape from a complex geometrical figure to ensure that the simple shape has the same size and form with the former one.

However, GEFT is not available for this study and thus a replacement test called Cognitive Style Figure Test was used instead. Cognitive Style Figure Test (CSFT) was developed by Psychology Department of Beijing Normal University (1988) based on GEFT (Witkin et al., 1977). CSFT comprises 29 complex patterns and 9 simple figures, which require test-takers to locate a certain simple geometric figure within a more complex pattern. It is assumed that field independent people are relatively quicker than the field dependent people in doing this test. This test is easy to operate because the tester needs only pencils and paper to complete it. For this reason, this test has been widely applied in related studies of FI/FD cognitive styles.

2.3.4 Related Studies of FI/FD Cognitive Styles in SLA

A considerable number of studies were carried out in the past few decades to investigate the roles that FI/FD cognitive styles play in the field of SLA. The majority of research examined whether there are differences in the performance of FI/FD learners in different learning situations. In an early study done by Seliger (1977), the researcher found that FI cognitive style is significantly related to all measures of learning. Naiman et al. (1978), however, conducted a study of some English-speaking students in Canada who were in three different grades. The results revealed that cognitive style of Field Independent students outperformed their counterparts in formal classroom learning in all three grades. Moreover, Frank (1984) reports that the field independent learners in his study were more efficient than field dependent students at taking notes in an outline format.

On the other hand, FD learners are found to have their own advantages in some learning situations. According to Araham and Vann (1987), FD learners are better in their oral performance compared to FI learners. In addition, FD persons were found to rely on prominent cues in concept-learning tasks, using a “spectator” approach to learning, which was better at incidental learning of social information (Goodenough, 1976:174). More recently, Rezaee and Farahian (2012) further provided supportive on this statement that FI/FD students perform differently depending on different learning situations. In their case study, a university student was observed continuously for three months in an English grammar class. They found that FI cognitive style plays a significant role in the student’s language acquisition, especially in the obtaining of linguistic competence but not communicative competence which was also in consistent with the statement claimed by Hansen and Stansfield (1981).

More studies have consistently come up with empirical discoveries which support the influence of FDI cognitive style upon SLA. For example, Naiman et al. (1978) discovered that FI learners performed better in imitation and listening test than FD did. Berger and Goldberger (1979) illustrate in their research that FI learners were more task-oriented and better at focusing on details of a task than FD learners. Similarly, Chapelle and Roberts (1986) stated that FI individuals also do better on cloze test.

As the above studies suggested, FI and FD cognitive styles play a significant role in the field of second language acquisition. Also, these researches demonstrated that both FI and FD learners have their advantages and disadvantages; both FI and FD learners can

become successful learners in a particular learning task for example FI learners are naturally good at dealing with logical thinking etc. Therefore, using the advantages of learners' FI/FD cognitive styles to improve learning is essential to future researchers.

2.3.5 Related Studies of FD/FI with Reading Comprehension

Among the studies of FD/FI cognitive styles in SLA, the relationship of FD/FI constructs with reading comprehension and reading strategies is still rarely touched. In early studies, Davis (1987) illustrates that field independent learners performed better in reading test. He also claimed that a better understanding of reading was related to efficient use of reading strategies such as organizational recall, contextual clues and so on. Similarly, Blanton (2004) found that cognitive style had an impact upon standardized reading tests. She stated that FD students performed better when the reading tests were multiple-choice than FI students. Other studies focused on the relationship between FI/FD cognitive styles and readers' language proficiency such as Rezaeian (2012) who investigated the possible relationship between FI/FD cognitive styles and foreign language proficiency. This research studied 294 Iranian students and half of them came from a language institution and another half were from a university. The results indicated that FI/FD cognitive styles was a significant factor affecting the students' performance on the proficiency test, which means there exists certain correlation between FI/FD cognitive styles and language proficiency.

Apart from that, there are a couple of studies which investigated the correlation between FI/FD cognitive styles and learners' reading comprehension. Fatemi et al. (2014) did a study in Iran to explore the influence of FI/FD cognitive style on Iranian EFL learners' reading comprehension and reading preference, and they found that FI learners performed much better in bottom-up reading model compared to their FD counterparts. These FI learners employ more reading strategies related to this reading model. Moreover, the results revealed that FD learners were more successful when top-down reading instruction was provided and top-down related reading strategies were employed. Although previous studies have attempted to examine the relationship between FI/FD cognitive styles and SLA reading, consistent and systematic studies in this area are still insufficient.

2.4 Metacognition and Metacognitive Strategies

In this section, the concept of metacognition, its components and the identification of metacognitive strategies are provided. Besides, empirical studies which emphasize on the relations between metacognitive strategies and reading comprehension are discussed extensively.

2.4.1 The Nature of Metacognition

Metacognition is a vital component of reading, particularly for ESL learners (Mokhtari and Sheorey, 2008). This term was first introduced by American Developmental psychologist Flavell (1970) in the area of cognitive psychology. According to Flavell,

“metacognition” refers to “one’s knowledge concerning one’s own cognitive process and products or anything related to them” (p.232). Anderson (2002) defines metacognition as “thinking about thinking” and it reflects one’s ability to understand what is known. Wenden (1998) states that metacognition is a form of cognition and a high level thinking process that involves active control over cognitive process. It is also regarded as the “seventh sense” and one of the mental characteristics which can be found in successful learners (Birjandi et al. 2006). Since its development, metacognition has received great attention in researches on language learning, especially in reading because it highlights how learner make plans for reading, monitor the reading process and evaluate how one has learned (Jacob and Paris, 1987).

2.4.2 The Components of Metacognition

As noted by Flavell (1979), four main components involved in the process of cognitive monitoring (metacognition) are metacognitive knowledge, metacognitive experience, goals (or tasks) and actions (or strategies). Based on Flavell (1979), Brown et al. (1983) proposed metacognitive knowledge, metacognitive experience and metacognitive strategies as three important distinct components of metacognition.

The first component which is the metacognitive knowledge talks about the interactions between people, tasks and characteristics of strategies (Flavell, 1979). It involves declarative knowledge, procedural knowledge and conditional knowledge about human cognition (Jacob and Paris, 1987). Declarative knowledge is the knowledge people have

about themselves and about each learning strategy such as skimming or summarizing (Carrell, Gajdusek and Wise, 1988). Procedural knowledge, on the other hand, refers to one's awareness of thinking process (Jacob and Paris, 1987). This knowledge shows how one performs the reading strategies, and how the strategies work (Winograd and Hare, 1988). Meanwhile, conditional knowledge refers to one's ability to select a specific reading strategy to fit in various contexts, and when and why one is applying this specific strategy (Carrell, Gajdusek and Wise, 1988).

The second component is metacognitive experience. Flavell (1979) defines it as the "feeling of knowing" that comprehension problems have occurred during reading or feeling the satisfaction of choosing the appropriate solution to the problem. Metacognitive experience brings one to a higher level of deliberate thinking. This feeling can help learners check and evaluate their cognitive activities, and also help them build their metacognitive knowledge foundation by adding to it or revising it. It is a system employed by learners during their ongoing learning activities to check the outcome of their actions, plan their next steps, monitor the use of their strategies and finally evaluate the effectiveness of the strategies they employ.

The third component of metacognitive strategies which is the focus of this study, refers to the general skills learners apply to manage, direct, regulate and guide their learning (Brown et al. 1983). It is about having the knowledge on strategies available to be employed in order to undertake certain task. O'Malley and Chamot (1990) identified metacognitive strategies under the framework of language learning strategies which

aims to help learners to think about their own cognition process when they engage in any types of learning. It also helps learners to control and regulate their cognitive strategies for successful performance (Cubukcu, 2009). Metacognitive strategies require learners to know their learning process, make plans before learning, monitor the interaction between learner and learning task, and in the end, evaluate how they have learned. The commonly identified metacognitive strategies include linking new information or knowledge with one's existing or prior knowledge, selecting the most effective and appropriate strategies to apply and planning before learning, monitoring and evaluating the whole learning process (Oxford, 2002). More and more researchers accept that the use of metacognitive strategies have remarkable improvement in learners' learning performance especially because they are highly connected to reading comprehension (Oxford, 2002).

2.4.3 The Identification of Metacognitive Strategies in Reading

After introducing metacognition in general, the following part will focus on the role of metacognitive strategies in reading comprehension. There are many scholars who have demonstrated how they identify the specific strategies within metacognitive strategies. Firstly, metacognitive strategies, as suggested by O'Malley and Chamot (2001), are one of the learning strategies. It involves seven types of specific reading strategies: the first is planning, which refers to previewing the main ideas or concept of the task, proposing strategies that will be employed, and generating a plan for learning; second is directed attention, means to deciding which parts of task to pay attention to and which parts to

ignore; third one is selective attention which refers to deciding to pay attention to certain perspectives of the input information by scanning for key words or linguistic markers; fourth, self-management: it refers to being aware of the learning condition and managing the connection between new learning task and the existing knowledge related to it; the fifth is self-monitoring, checking one's understanding and comprehension of the task continuously, and finding out the appropriate strategies to employ; the sixth step is problem-identification, identifying the points needed to find resolution; the last step is self-evaluation which means evaluating and checking one's learning results.

Other scholars such as Anderson (2008), Israel (2007), Pressley and Afflerbach (1995) suggest that the most widely-accepted components of metacognitive strategies are planning strategies, monitoring strategies and evaluating strategies. Planning strategies means a group of approaches are used before reading. It also includes activating learners' existing background knowledge which is relevant to the reading task for them to prepare for new reading materials (Israel, 2007). The frequently-used planning strategies include examining the title of the task, looking at pictures, illustrations, headings and subheadings to preview the task in order to get a general idea of the reading task. Readers may also preview the structure of the reading materials and check the questions that need to be answered after the reading is done. More importantly, setting the purposes for reading is recognized as essential in the planning strategies (Paris, Wasik & Turner, 1991).

Meanwhile, monitoring strategies usually take place during reading which aims at improving the efficiency and effectiveness of the reading progress. Some frequently-used monitoring strategies include keeping the work on track to help learners know if something is going wrong and self-questioning whether they understand the target language. Furthermore, monitoring strategies help learners to take control of the reading progress, to examine whether the resources they have are sufficient and are well used, also to see whether they are capable of doing a certain task and whether they are doing what they plan to do (Slife & Weaver, 1992).

As for evaluating strategies, approaches are used after reading. They help readers to evaluate and reflect how well they perform in the whole reading process. By doing this, learners can improve their abilities in arranging strengths and weaknesses in order to perform better in the next task. For example, readers may think about how to apply the new knowledge for other situation, learn how well a certain type of strategy works or think whether there are any other better strategies which are more suitable for this learning task.

In order to identify the types of metacognitive reading strategies, Mokhtari and Reichard (2002) developed the Metacognitive Awareness of Reading Strategies Inventory (MARSİ, 2002) and they classified three categories of sub-metacognitive reading strategies which are Global Reading Strategies, Problem Solving Strategies and Support Strategies. However, MARSİ is normally used to measure the metacognitive reading strategies of native speakers instead of ESL learners. For this reason, Mokhtari

and Sheorey (2002) developed Survey of Reading Strategies (SORS) to measure ESL students' metacognition awareness and their use of metacognitive reading strategies.

According to Mokhtair and Sheorey (2002), when readers employ Global Reading strategies, they are able to plan their reading such as building a purpose in mind before reading. Meanwhile, if they use Problem Solving Strategies, they are able to solve problems while reading by guessing meanings and adjusting reading speed, whereas if they apply Support Strategies, they are able to use basic support mechanisms such as using dictionaries and taking notes to help their reading.

In the present study, SORS, developed by Mokhtair and Sheorey's (2002), was adapted as a questionnaire to identify the metacognitive reading strategies of the ESL learners.

Another framework developed by Chamot et al. (1999), Recursive Model of Metacognitive Strategies was also employed as a guide for interview session to identify each sub-strategies reported by the learners. This model was employed as it systematically identified 4 main strategies and 24 sub-strategies within the metacognitive reading strategies.

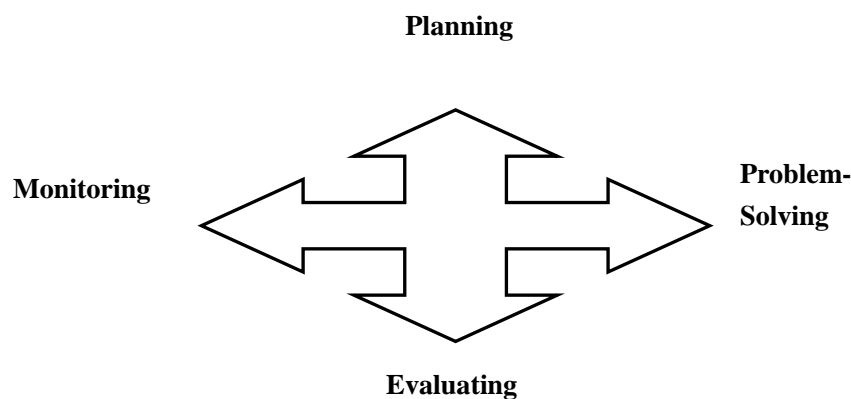


Figure 2.1 The recursive model of metacognitive strategies

Source: Adapted from Chamot et al. (1999, p.13)

Based on Chamot et al. (1999), four processes are involved in metacognitive strategies (planning, monitoring, problem-solving and evaluating) and these processes may not be in sequence but recursive depending on the demands of the task and the interaction between task and learner. They have also specifically identified what is involved in the major metacognitive strategies which can be used in reading. The table below presents the 24 sub-strategies of metacognitive reading.

Table 2.3 Sub-strategies of the Recursive Model of Metacognitive Strategies

Planning strategies	
1. Set goals	Decide what to get and identify aims.
2. Directed attention	Decide to pay attention or ignore some particular task.
3. Activate background knowledge	Think about what you have already learned to help you better do the task.
4. Predict	Think about any related information that would be encountered.
5. Organizational Planning	Plan how you can reach the goal and set sequence of doing task.
6. Self-management	Arrange the conditions that help you learn in order to perform better.
Monitoring strategies	
1. Ask if it makes sense	Check one's understanding by asking oneself questions

2 .Selectively attend	Focus on key words, phrases and ideas.
3. Deduction/Induction	Apply the rule in order to produce the language accurately.
4. Personalize	Relate information to personal experience
5. Take notes	Jot down key words or concepts.
6. Use imagery	Create an image to represent information.
7. Manipulate	Act out, conduct role play and handle tangible objectives.
8. Self-talk	Make positive statement to encourage oneself
9. Cooperate	Work with classmates; give/receive feedback to do the task better.
Problem-Solving Strategies	
1. Inference	Guess unfamiliar words from contextual clues
2. Substitute	Use a synonym or descriptive phrase for unknown words
3. Ask questions to clarify	Ask others for explanation and examples
4. Use resources	Use dictionary, textbooks, internet program and so on.
Evaluating Strategies	
1. Verify predictions and guesses	Check whether one's guesses or predictions are correct
2. Summarize	Create a mental, oral or written summary of information
3. Check goals	Check whether one has reached his/her goals
4. Evaluate yourself	Check how well you understand or perform the knowledge, and check your own quality for doing the task
5. Evaluate your strategies	Judge how well you have applied a specific strategy to the learning task

In conclusion, these four components of metacognitive strategies are interrelated because metacognition is not a linear process which moves from one step to another step. It occurs separately or simultaneously during the whole process of reading.

As discussed above, the present study has adapted two theoretical frameworks to identify students' metacognitive strategies in reading context. These two frameworks are: Chamot et al.'s (1999) Recursive Model of Metacognitive Strategies which emphasizes on four processes of metacognitive strategies: Planning, Monitoring, Problem-solving and Evaluating; and Survey of Reading Strategies (SORS) developed by Mokhtari and Sheorey (2002) which focuses on three categories: Global Strategies, Support Strategies

and Problem-solving Strategies. The SORS document is provided in Appendix E.

2.4.4 Empirical Studies of Metacognitive Strategies in Reading

Brown, Armbruster and Baker (1986, as cited in Carrell, Pharis and Liberto, 1989) illustrate that metacognition is crucial in reading, and according to Alexander and Jetton (2000), metacognitive awareness and the process are expressed through the use of metacognitive strategies. During reading, metacognitive strategies are supervisory activities that manage and regulate the cognitive process which involves the acts of previewing or over-viewing tasks, solving problems and planning the next move (Baker and Brown, 1984). In addition, looking at pictures, figures, table before reading as well as checking, monitoring, testing and evaluating reader's comprehension and understanding of text are also considered as metacognitive strategies (Li and Munby, 1996; Phakiti, 2003).

Researches on the impacts of metacognitive strategies on reading have been started from the exploration of what successful readers do and the comparison in the use of metacognitive strategies in reading between successful and less successful readers. Studies by Carrell (1989), Carrell et al. (1998), Sheorey and Mokhtari (2001) and Zhang (2001) discover that successful readers generally employ a higher degree of metacognitive strategies in reading, which enable them to use these reading strategies more effectively and efficiently than unsuccessful readers. For instance, Jimenez et al. (1996) support this statement in his study when he found that a learner's successful use

of reading strategy is actually dependent on whether the strategy is employed metacognitively. In his study, he compared successful and less successful readers in terms of their reading strategy employment, and the result revealed that the more successful readers tend to use global reading strategies and are more aware of the relationship between their L1 and L2. Additionally, Garcia et al. (1998) demonstrate that the less successful learners usually have less strategic awareness and monitoring ability in reading process. In brief, successful learners are more aware of metacognitive strategies and the strategies they use play a significant role in reading.

To further understand the relationship between metacognitive awareness and reading comprehension, a number of researches have investigated how knowing one's reading strategies helps reading comprehension. Carrell (1989) carried out a study to investigate the metacognitive awareness of second language readers and its relationship to their reading comprehension. His study comprised 45 Spanish native speakers and 75 English native speakers, and the participants were required to read two texts in each language and later answer ten multiple-choice questions. The result showed a positive correlation between metacognitive awareness and reading comprehension.

In another study by Sheorey and Mokhtari (2001), they examined the differences between native and non-native students in terms of their metacognitive awareness during reading. Participants were 150 native English speakers and 152 ESL college students. Survey of Reading Strategies (SORS) was adapted to measure participants' metacognitive reading strategies. The result revealed that there was a difference

between native and non-native English speakers in which higher-reading-ability readers are more aware of their strategies and use more strategies compared to their lower-reading-ability counterparts. The result also showed the evidence that there is a positive relationship between the use of metacognitive strategies and reading comprehension.

Madhumathi and Ghosh (2012) carried out a study to assess Indian ESL students' awareness of metacognitive reading strategy which focuses on the relationship between reading comprehension of the students and their use of reading strategies. SORS was adapted as the measurement to identify the students' metacognitive reading strategies, and their reading comprehension score was also collected. Result revealed that the use of reading strategies by engineering freshmen was from medium to high level. Except for global and supporting strategies, all other combinations of strategies were statistically and significantly related to their reading comprehension score. As a conclusion, the reading strategy of Indian freshmen in this study is moderately correlated with their reading comprehension achievement.

There are other studies which look at the usage of metacognitive strategies in different reading tasks and for different reading purposes (Lorch and Klusewitz, 1993; Narvaez, van den Broek and Ruiz, 1999; Mokhtari and Reichard, 2008). Studies conducted by Lorch and Klusewitz (1993) and Narvaez (1999) indicated that students use more metacognitive strategies during reading for academic purposes such as examination and assignments. Similarly, Li and Munby (1992) carried out a qualitative study to find out

the metacognitive strategies of two L2 readers in reading academic texts. Both participants were Chinese graduate students who obtained a score of more than 600 in TOEFL. This research also used unstructured interviews, think-aloud protocol and self-report to collect data. The findings showed that they use several metacognitive strategies in reading, and they use metacognitive strategies to check their understanding by translating a text to Chinese. Interestingly, it also showed that the subjects use more strategies when a text is unfamiliar and difficult for them.

Mokhtari and Reichard (2008) employed MARSII to examine the differences between reading for academic purpose and reading for fun among 11th grade students. The result of this study was similar to Lorch and Klusewitz (1993); it showed that participants employed more metacognitive strategies in academic reading than in entertainment reading. More specifically, participants showed interest in using Global reading strategies such as setting goals for reading. In addition, they employed Support strategies more frequently in academic reading. This work is significant in that it examined the type of reading strategies students employed when reading different types of text.

Apart from the mentioned researches on how learners perform metacognitive strategies, some researches also showed how other factors such as age, language proficiency and previous knowledge influence the use of readers' metacognitive strategies in reading. Regarding age factor, many scholars argue that the older the learners are, the more proficient they become, and the more essential metacognitive strategies are for reading

comprehension (Baker and Brown, 1984; Israel, 2007; Baker, 2005, 2008a, 2008b; Pressley and Gaskins, 2006, Mokhtari, Reichard and Sheorey, 2008). For example, Myers and Paris (1978) questioned 2nd and 6th grade students about metacognitive awareness, tasks and purposes in reading. The older students were more able to identify reading strategies and also use more types of reading strategies. However, younger students were less aware of their reading strategies where they used more local and bottom-up strategies rather than planning or predicting.

In terms of gender, Griva et al., (2012) investigated the relationship between metacognitive reading strategies and the gender of 5th and 6th grade primary school students in their study. 405 students (206 boys and 199 girls) were examined using questionnaires and think-aloud protocol. The results indicated that there was a significant difference between male and female students in selecting metacognitive reading strategies. The female students seemed to be more flexible in the use of strategy and had higher metacognitive awareness compared to male students.

In the case of language proficiency, Magogwe (2013) conducted a study to explore the metacognitive awareness level of students with different language proficiency at University of Botswana. This study focused on the roles of metacognitive strategies in reading comprehension with the consideration of language proficiency. Findings indicated a positive relation between language proficiency level and usage of metacognitive reading strategies. In other words, the higher the language proficiency is, the more the reading strategies are employed. The reason might be that more proficient

students set clearer goals to manage and monitor their reading, while less proficient language learners focus more on completing tests and assignments.

However, research related to cognitive style and metacognitive strategies in reading has not been extensively done. A study conducted by Ghonsooly and Eghtesadee (2006) investigated the role of FI/FD cognitive styles in selecting cognitive and metacognitive reading strategies by a group of skilled and novice Iranian students in Iran. The sample involved 12 subjects with high and low language frequency and with different FI/FD cognitive styles. The comparison was examined between skilled and novice readers in terms of how frequently they employed cognitive and metacognitive strategies. The subjects were required to read two texts and say aloud whatever occurred in their mind when they were reading. Result shows that no significant difference existed between novice FI and FD learners when they employed cognitive and metacognitive strategies in reading, and this means that cognitive style has no influence on novice readers. However, there was a significant difference between skilled FI and FD readers which demonstrates that FI/FD cognitive styles might influence these readers' use of reading strategies.

A more recent study done by Sadehi and Langhroudy (2012) investigated FI/FD Iranian EFL learners' use of general and specific cognitive/metacognitive reading strategies. 62 skilled EFL learners (27 males and 35 females) were chosen to be the participants. They were classified into FI/FD groups through Group Embedded Figures Test and then were given a self-reported reading strategy questionnaire which aimed at identifying the

general and specific cognitive/metacognitive strategies they used in reading. Chi-square statistical analysis was employed to examine the correlation between FI/FD cognitive styles and reading strategies. However, there was only a significant difference in the use of general metacognitive and specific cognitive strategies between FI and FD students.

2.5 Chapter Summary

This chapter has provided a comprehensive knowledge of key concepts and informative relevant researches to this study. Theories of second language reading and explanation of reading strategies and reading model were discussed at the beginning that emphasized on the important role reading plays in SLA and how reading strategies and reading model differ from one individual to another. This part has also disclosed the link between cognitive style and learners' reading strategy preference.

The second part of this chapter demonstrated the related theories and studies of cognitive style in SLA. Cognitive styles of field-dependence/independence are proven to be significant in SLA study, especially in reading comprehension. Empirical studies suggested that more researches in FI/FD cognitive style in reading comprehension should be conducted.

The third part introduced the concept of metacognition which is a significant feature in developing readers' reading comprehension (Baker and Brown, 1984; Garner, 1987; McCormick, 2003). It is believed that self-monitoring and regulation are the main

important factors in reading comprehension (Ahmadi, Ismail and Abdullah, 2013) which build the link between reading comprehension, metacognition and the use of metacognitive strategies. The past empirical studies also showed that metacognitive strategies play a significant role in reading comprehension and further researches are suggested to give more attention to how the factors of individual difference affect the metacognitive strategies of ESL learners.

CHAPTER 3: RESEARCH METHODOLOGY

3.1 Overview

In this chapter, the information will be provided in specific sections: (1) research design for both quantitative and qualitative analysis. (2) selection of the participants and sampling method (3) instruments (4) data collection procedure, and (5) data analysis methods.

3.2 Research Design

A mixed method approach was employed in the present study. The researcher conducted both quantitative and qualitative analysis in order to provide "a more comprehensive understanding of what this research is going to study and a better interpretation of the research problem, which is more complete than either one research method" (Creswell, 2008, p. 552).

A number of researchers such as Sekaran (2003) and Neuman (2006) believe that triangulation of research methods produce a stronger confidence in the reliability and validity of data. Therefore, this present study adapted concurrent triangulation strategy which is a form of mixed method that has been emphasized by Creswell (2009). The concurrent triangulation strategy uses the quantitative and qualitative approaches to cross validate and corroborate the findings. According to Terrell (2012), this strategy

usually uses quantitative and qualitative methods where one method can be given more emphasis compared to the other.

In the present research, the quantitative study was employed as the main method to answer the first research question which is on the students' metacognitive reading strategies and second research question on the differences in the selection of these strategies between FI and FD students. On the other hand, the qualitative study was carried out through interviews to check whether the reading strategies the participants reported in the interview match the findings from the questionnaire, and also to get more comprehensive understanding of the influences of cognitive style on students' reading strategies.

The quantitative approach was done through questionnaire sheets which consist of: (a) subjects' information form and (b) consent form (c) Cognitive Style Figures Test (d) Survey of Reading Strategies. Subjects' information form helped to collect students' background information such as age, gender and academic major. Consent form was provided to keep the confidentiality of the participants. The instrument named Cognitive Style Figure Test (CSFT) (Psychology Department of Beijing Normal University, 1988) was used to categorize students into FI and FD groups based on their scores of cognitive style test; whereas another instrument called Survey of Reading Strategies (SORS) by Mokhtari & Sheorey (2002) was used to identify the metacognitive reading strategies employed by the participants.

In the meantime, the qualitative research was conducted through a semi-structured interview two weeks after the questionnaire distribution. Semi-structured interviews allow the researcher to gain a deep and rich understanding of the data which builds on the perspective of the participants' experience and their opinions (O'Neill, 2011). The main purpose of conducting this qualitative study was to validate and provide support for the quantitative findings.

3.3 Research Instruments

This research employed three types of instruments; (1) Cognitive Style Figure Test (CSFT), (2) Survey of Reading Strategies (SORS) and (3) semi-structured interview. Besides the instruments, two forms were attached with CSFT and SORS during quantitative study which were subject's information form to gather participants' age, academic major and gender and consent form to inform the participants about the objectives of this study and to announce the confidentiality of the study.

3.3.1 Cognitive Style Figure Test (CSFT)

Cognitive Style Figure Test (CSFT) was developed by Psychology Department of Beijing Normal University (1988) based on Witkin's Group Embedded Figures Test (GEFT) (Witkin et al, 1977). The designers of CSFT replaced two figures in GEFT with new ones. This test is widely accepted as a cognitive style measurement and is employed in many researches in China such as the studies done by Zhang Yuling (2008)

and Kong Yinchun (2007).

CSFT is composed of 29 complex patterns and 9 simple figures, which requires the test-takers to locate a certain simple geometric figure within a more complex pattern. (Appendix D) This test is divided into three parts. Part one contains 9 complex patterns with simple figures hidden in it. It serves as warming-up exercises for the students to get a better understanding of the test requirements. This part will not be scored. Part Two and Part Three each consists of 10 complex patterns and the score will be counted as the result. In these parts, figure 1 to 2 in each part will get a score of 0.5, figure 3 to 4 a score of 1, and figure 5 to 9 or figure 5 to 10 a score of 1.5 based on Xie Sijun and Zhang Houciu (1988). If the subjects fail to outline the simple figure, no scores will be added. The total score is 24. Those who get higher than 12 scores are regarded as FI learners while those who score lower than 12 are regarded as FD learners. For FI learners, the higher the scores they get, the more extreme FI features they have, and as for FD learners, the lower the scores they get the more extreme FD features they have.

In addition, CSFT was developed based on Witkin's Group Embedded Figure Test (GEFT). GEFT was first developed by Oltman, Raskin, and Witkin (1971) and was initially used on pilots to test pilots' cognitive function. The validity of GEFT was reported in Witkin's Embedded Figures Test to be satisfactory (Witkin, et al, 1977) and has been reported to enjoy Spearman-Brown reliability coefficient of 0.82 for both male and female (Witkin, et al., 1971). In Krishnaveni's (1988) study, 66 subjects yielded a split-half reliability of 0.82. A KR- 20 reliability of 0.85 was reported by Mac Kenna

(1991) for the same GEFT version. In a study by Tan (1993) that used the same GEFT, the Pearson product-moment correlation as computed in the test-retest procedure and a correlation coefficient of 0.88 was reported.

GEFT was translated into CSFT which was written in Chinese Language for the purpose of employing this test in China. The designers of CSFT conducted an experimental study which studied 250 adult participants who had different careers all around China. The 250 subjects were considered as a representative sample of the whole society since they came from different backgrounds where some were teachers, office workers, businessmen, students and so on. By using the half split method, the reliability of CSFT was examined through the correlation between Part Two and Part Three. Researchers also employed Spearman-Brown formula to correct the reliability in which the corrected reliability is 0.9. In order to compare with the original GEFT, 96 subjects who took CSFT also took part in GEFT and their scores on the two tests were found to be correlated for validity ($r=0.49$).

Apart from that, CSFT is a time-limited test and the time allowed to complete this test is 10 minutes only. Any additional time will affect the validity and reliability of the test. Therefore, during the test, the researcher has strictly controlled the time.

3.3.2 Survey of Reading Strategies (SORS)

Survey of Reading Strategies (SORS) was adapted as a questionnaire to identify the metacognitive reading strategies of the ESL learners in the present study. It was first

developed by Mokhtari and Sheorey (2002) (see Appendix E) used to measure ESL students' metacognitive reading awareness and the strategies they use. SORS is a five-point Likert type scale, ranging from 1 ("I never or almost never do this.") to 5 ("I always or almost always do this"). Students who get higher scores are said to have more metacognitive awareness and are more likely to employ a particular metacognitive reading strategy.

SORS contains 30 items with three sub-categories, namely Global Reading Strategies (GLOB), Problem Solving Strategies (PROB) and Support Strategies (SUP) (see Appendix E). Global Strategies are "intentional, carefully planned techniques by which learners monitor or manage their reading" (Mokhtari, Sheorey, & Reichard, 2008, p. 51). For example, learners could be searching for clues to understand passage or adjusting reading speed to fit the reading materials. Meanwhile, Problem Solving Strategies are "the actions and procedures that readers use while working directly with the text" (Mokhtari, Sheorey, & Reichard, 2008, p. 51). An instance could be when learners make a guess of unknown words or phrases in the context, and read the difficult texts again to check their understanding. Support Strategies, on the other hand, are "basic support mechanisms intended to aid the reader in comprehending the text, such as using a dictionary, taking notes, underlining, or highlighting textual information" (Mokhtari, Sheorey & Reichard, 2008, p. 51).

As far as the reliability and validity are concerned, SORS was modified based on the Metacognitive Awareness of Reading Strategies Inventory (MARSI) which was

developed by Mokhtari and Reichard in 2002. However, MARSİ is used to measure metacognitive reading strategies of native English speakers instead of ESL learners. In 2002, Mokhtari and Sheorey modified MARSİ and developed SORS. They combined two items in Support Strategies (item 6 and item 9) into one item and they also modified some words which may confuse ESL learners so that ESL learner can better understand the words. In Mokhtari and Sheorey's study (2002), they further modified SORS by adding two new items of Support Strategies (item 29: "When reading, I translate from English into my native language." and item 30: "When reading, I think about information in both English and my mother tongue."). According to Mokhtari and Sheorey (2002), the internal consistency reliability coefficients (as determined by Cronbach's alpha) for the overall score was reported as 0.93, indicating a reasonably dependable measure of students' metacognitive reading strategies. The reliability for the three sub-strategies was reported as: Global Reading strategies (0.92), Problem Solving Strategies (0.79) and Support Strategies (0.87).

For the validity of SORS, since it was mostly based on MARSİ, the validity test for MARSİ should also work on SORS. Mokhtari and Reichard (2002) examined previous work related to metacognition and reading comprehension such as by Alexander and Jetton (2000), Baker and Brown (1984), Garner (1987), Paris and Winograd (1990), Pressley (2000), and Pressley and Afflerbach (1995), and they stated that it is valid to examine metacognitive strategies by using MARSİ. In terms of SORS, many studies which were conducted with ESL and EFL learners applied SORS in their researches. Yü

ksel & Y ü ksel (2012) applied SORS to examine Turkish university students' metacognitive awareness of academic reading strategies. Magogwe (2013) also adapted SORS to explore ESL students' metacognitive strategies in University of Botswana. Another study done by Ghyasi et al. (2011) in Iran also adapted SORS as a measurement to investigate metacognitive awareness and strategies used by Iranian EFL learners at higher educational level. All these studies proved the reliability and validity of using SORS as the measurement of identifying metacognitive strategies.

3.3.3 Research Instrument for Qualitative Data

Qualitative data on students' metacognitive strategies were collected during interviews. It aimed to confirm the findings of the questionnaires and to get a better understanding and more comprehensive picture of students' use of metacognitive strategies in reading, and the relationship between cognitive styles and reading strategies.

The interviews were done with six students who volunteered to participate. About 23 questions were asked following two guidelines. The first guiding question is, "what are the frequently used metacognitive strategies of the participants in reading English texts?" This question was extended into many sub-questions during the interview. For example, students were asked these questions: "Do you make plans before reading? What kind of plans do you make?" or "Do you check your own understanding in reading? How do you normally do that?"

The second guiding question is, “what are the differences in selecting the metacognitive strategies by FI group and FD group of students?” The participants were asked about their preference and behaviors in reading. Examples of questions are: “Are you good at dealing with detailed information? Or are you skilled in summarizing the reading text?” or they were asked about their reading habits, for example, “When you have some difficulties, do you like to solve the problems individually or do you prefer to find answers through discussions with lecturers and classmates?”

The two guiding questions were constructed according to the research objectives and the 23 extended interview questions were adapted from three previous studies which are: “Metacognitive Strategies in Second Language Academic Reading: A Qualitative Investigation” (Shuyun Li & Hugh Munby, 1996); “Metacognitive awareness and strategy use in academic English reading among adult English as a second language (ESL) students” (Yuko Iwai, 2009); “Metacognitive awareness of reading strategies of University of Botswana English as Second Language students of different academic reading proficiency” (Magogwe, J.M., 2013). The extended interview questions were formulated after obtaining the results from quantitative analysis which showed the differences between FI and FD students regarding their choice of reading strategies. Thus, the extended interview question can be used to confirm the differences and to explore the reasons. The interview session was conducted in UM campus and the interviewees were allowed to choose a place they felt comfortable in. English was used as the language of interaction and the whole process took an average of about twenty minutes for each student.

3.4 Participants of the Study

The selected participants are from a public university in Malaysia which is University of Malaya. The participants are all Malaysia first year undergraduates from various academic faculties of different majors. This section will discuss the sampling criteria for choosing these participants in both quantitative and qualitative study.

3.4.1 Sampling Criteria

The participants for this study were Malaysian first-year undergraduates from different faculties in University of Malaya, and there was no specification for ethnic group; the participants could be Malay, Chinese, Indian or others. There are a number of reasons for choosing only first-year undergraduates. Firstly, most of them are adjusting to the transition from high school level of English to advanced university level of English in order to meet the needs of higher education (Samsiah, 2011). Therefore, it is important for them to quickly adjust themselves and improve their reading ability through various approaches so that they can gain more academic knowledge related to their major. Secondly, the first-year undergraduates were the most suitable group of students to examine whether the reading skills they had learned in secondary school were effective for higher educational needs, and this can also provide an opportunity to secondary teachers and teaching curriculum designers to check and evaluate their English reading pedagogical activities (Pusat Perkembangan Kurikulum, 2003, p.1).

3.4.2 Sampling Method

The participants were all Malaysian first year undergraduates who enrolled in University of Malaya (UM). As the researcher is a Master student of UM, she decided to use students of the same university as the participants. These participants are required to take university English language courses such as communication skill and English reading courses which are offered by the Language Unit under the Faculty of Languages and Linguistics. After getting the permission from the Language Unit, the researcher approached 8 language teachers to enter their classes for questionnaire distribution. The classes are listed in the table below:

Table 3.1 Language Courses of Participants

Course code	Course title
LXEB1115	(1) English proficiency for Law I
GTEE1110	(2) Writing skills in English (group1)
	(3) Writing skills in English (group2)
GTEE1105	(4) Communication in English
GTEE1113	(5) Technical skills in English
GTEE1109	(6) Speaking skills in English
GTEE1114	(7) English language for medicine
GTEE1111	(8) Presentation skills at workplace
GTEE1107	(9) Communication in English (group1)
	(10) Communication in English (group2)

3.4.3 Research Sample for Quantitative Study

150 participants were selected to take part in this study. They were selected from the population of 2000 first year undergraduates (Semester 1, 2014/2015) who enrolled in UM. The sample size covered was around 9% of the population, and according to Best and Kahn (2003), the sample size was considered enough for a 95% confidence level and $\pm 5\%$ precision. The participants came from 10 English language courses and 35 various academic majors. They were required to take general English courses provided by the University in their first year.

After they did the questionnaire survey, only 162 questionnaire sheets were considered valid while the other 18 questionnaire sheets were discarded since they either contained missing data, incomplete answers or where the instructions given were wrongly followed (e.g. Student skipped one part of the test or highlighted the wrong parts instead of tracing the line of the hidden patterns). After the questionnaire sheets were collected, simple statistic was used to examine the age range and academic majors of the participants. The results are presented in the following tables and figures.

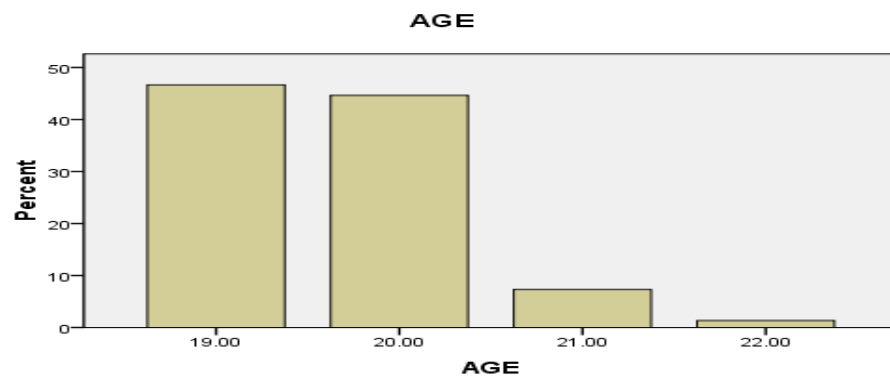


Figure 3.1 Percentages by Age of the Participants

Figure 3.1 shows that 46.7% of the participants are 19 years old whereas 44.7% of the participants are 20 years old. Therefore, the majority of participants are in the age range of 19 to 20. Regarding their gender, there were 55 male participants (about 34%) and 107 (66%) female participants. The sample was randomly selected regardless of the participants' gender.

Table 3.2 Academic Major of the Participants

Academic major	number	Academic major	number
Science with education	2	Physics	3
International relations	1	Media study	1
Building survey	5	Korean study	1
Bio-health (science)	2	East Asian study	3
Islamic study	2	Sport science	3
Computer science	3	Chemistry	3
Chinese study	4	Performing Arts	5
Quality survey	4	Biology	2
Science and technology	4	History (art and social science)	3
Business administration	13	Mathematics	4
Bio-medical engineering	1	Applied chemistry	1
Indian study	1	Dentistry	14
Civil engineering	4	Economics	4
Malay study	2	Law	11
Education	2	Accountancy	12

Applied geology	1	Statistics	1
Arabic language	1	Child education	1
Pharmacy	8		

Table 3.2 shows the 35 different academic majors of the participants. Business administration (13 students), dentistry (14 students) and accountancy (12 students) are the three academic majors which have the most counts. Participants are all first-year students and they are currently taking various English Language courses.

In the aspect of their language background, most of the Malaysian students use Bahasa Malaysia as their first language with English as a second or third language. They have learned English since primary school, thus having approximately 13 years of exposure to English. Their English proficiency level was also examined by Malaysia University English Test (MUET) before they enter university, the minimum level for entering University of Malay is Band 3. However, for Law and Language Faculty the requirement is higher that is Band 4 and above. Therefore it is assumed that the language proficiency of the participants is at Band 3 to Band 4 level which belongs to intermediate level.

Based on the Cognitive Style Figure Test (CSFT), 86 field independent and 76 field dependent students were identified. In order to keep an equal number, 75 FI and 75 FD students were randomly selected to fulfill the minimum number to run SPSS. Therefore,

150 respondents and their questionnaire sheets were eventually taken for further analyses.

3.4.4 Research Sample for Qualitative Study

The qualitative study was conducted through interviews with the purpose of confirming the use of metacognitive strategies in student's SORS and also adding better understanding of the relationship between cognitive style of FI/FD and reading strategies. The interviewees were selected from the participants who filled up the questionnaire and signed the information sheets to join the interview session. They are from various Faculties and in different majors. Initially, there were 23 students who agreed to attend the interview, but only a group of 8 extreme FI students (who scored more than 21 marks out of 24 in their CSFT test) and a group of 6 extreme FD students (who scored less than 8 marks out of 24 in their CSFT test) were identified. Subsequently, 3 students from each group were randomly selected to be the interviewees. Although only six students were selected to attend the interview session, according to Creswell (2002), a small size of participants is enough for qualitative study since the purpose of this type of study is to comprehend a central phenomenon. Similarly, Nielson (1994) states that sample size as small as five participants will yield enough information for a qualitative study. The interviews were conducted over two weeks after the questionnaire distribution in some empty classrooms or places that the six interviewees chose.

3.5 Pilot Study

Seliger and Shohamy (1989) stated that a pilot study is beneficial in increasing the quality of the research data. Thus, two sets of pilot study were conducted before the data collection. The first pilot study was conducted one week before the questionnaire distribution, which aims to check the clarity and comprehension of the instructions and directions of the two surveys. It was also to make sure that students understand the whole process of how the questionnaire sheets should be done. Besides, this pilot study was also done to estimate the total amount of time needed to answer the questionnaires. There were ten first-year undergraduate students in UM who participated in the pilot study, but they were not the participants for the real research respondents. After they completed the questionnaire, the researcher had a conversation with a few of them to check whether they felt confused about the test, had difficulties to understand the test requirements and had enough time to do the test.

The result showed that they could understand this research and follow the procedure of the questionnaire. However, there were a few changes made to the questionnaire based on their feedback: (1) for CSFT, the simple figures are better to be placed separately or written at the last page so that participants do not have to turn the pages back and forth to compare the figures. They can easily take the last page off to do it. (2) It is better to have someone to remind them about the timing so that they can monitor the speed of answering the test.

Another pilot study was carried out a couple of days before an interview was conducted. A student who filled up the questionnaire agreed to take part in the interview. The interview took place at the student's residential college. The interview questions were asked and it took 20 minutes to answer all the questions. After the pilot study, a few changes were made based on student's on-the-spot performance. For example, four questions were modified since they were confusing and not clear; at the same time, a couple of questions were added which require students to give further elaboration of their answers. After transcribing the voice recording without any editing, a thematic analysis was used to analyze the student's answer.

3.6 Data Collection Procedure

Quantitative data will be collected first by conducting questionnaire survey with the participants, followed by interview sessions to collect qualitative data. This section will present the procedure for both quantitative and qualitative data collection.

3.6.1 Quantitative Data Collection

After getting permission from the Language Unit and the lecturers of English language courses, the researcher started collecting quantitative data. The questionnaire distribution began on week 11 and ended on week 13 of Semester 1, 2014/2015. During these three weeks, 10 classes from various faculties were covered. 180 students participated in this study and they are all in their first year of undergraduate study.

At the beginning of the research, a briefing was given to the participants about the purpose of this study and how they should answer the questionnaire. Students were required to do the CSFT test first within 10 minutes. The researcher introduced the test and informed the students of the time allocated for the test, then all the students started to do the test together. When the time was up, students were asked to stop and start to fill up Survey of Reading strategies without any time limitation. After they finished these two instruments, they were required to fill the information sheet and sign the consent form.

Students were encouraged to answer all the questions honestly and all the information obtained from students was kept confidential. Participants had the option to participate in the follow-up interview. If they wanted to, they were requested to leave their contact number and email address. The whole process took around 20 minutes.

3.6.2 Qualitative Data Collection

In order to avoid peer influences, the researcher conducted one-to-one semi-structured interviews. Before the interview, all the 6 interviewees were provided with their results of CSFT and SORS so that they were informed of their own cognitive style. Then, they were asked 23 questions which focus on the use of their metacognitive strategies when reading English texts and the difference in using metacognitive strategies by FI and FD group of students.

There was a brief warming-up session with the interviewees in order to gain some basic information about them and to help them ease the tense and anxiety. The Semi-structured interviews employed in the present study allowed the participants to express their feeling towards reading more freely and comfortably. Besides, the researcher was able to negotiate meanings with the interviewees and explore further and deeper information. Each interview took about twenty minutes and was tape-recorded. Interviews were held in several locations on campus, such as vacant classrooms, where the participants were comfortable sharing their reading experiences with the researcher.

3.7 Data Analysis Method

The present study is quantitative in nature, supported by qualitative findings. For quantitative data, the researcher employed SPSS V.16 to conduct both descriptive and inferential statistical analysis. Four steps of data analysis were involved.

The first step involved using a manual calculation to divide students into two groups based on the scores they get in CSFT. Those who scored more than 12 were regarded as FI learners while those who scored less than 12 were regarded as FD learners based on Revision of “Embedded Figures Test” scoring method (Meng Qingmao and Chang Jianhua, 1988). Therefore, there were two groups of students.

For the second step, the score of Survey of Reading Strategies (SORS) was computed in SPSS. The choice of 1,2,3,4,5 is equivalent to 1 to 5 points and then all the points were

added up. The descriptive statistic used to analyze the score of SORS includes: the means values, standard deviation values, percentages as well as the most frequent and least frequent strategies. This step of data analysis was used to answer the first research question which is to find out the metacognitive strategies used by all the students in reading English texts.

In the third step, the SORS scores of FI and FD students were calculated, and Independent Sample T-test was employed to answer the second research question which is to find out whether the differences between FI and FD students regarding their choice of metacognitive strategies are statistically significant. The overall mean score of their strategy usage and mean scores of three sub-strategies (Global Strategies, Problem Solving Strategies and Support Strategies) of each group of participants were compared. The results can be shown in P value, also called the probability value, which observes sample result that is used for testing a statistical hypothesis. Usually a threshold value called the significant level is set as 5% and denoted as α . If the p -value is equal to or smaller than the significant level (α), it suggests that the null hypothesis must be rejected. The reason for using Independent Sample T-test is because FI and FD are two independent groups; data involved has been converted to ratio scale which is the scores students ranked themselves from 1 to 5; sample was randomly selected and exceeded the minimum sample size required. Thus, Independent Sample-Test is appropriate in this case.

In the last step, Chi-square Test for Independence was employed to investigate the third research question to see whether there is any relationship between the students' FI/FD cognitive style and their metacognitive reading strategy usage level. The overall mean scores and the mean scores for each sub-strategy of participants' metacognitive strategies were classified to three levels of usage according to Oxford and Burry-Stock (1995). They suggested that for language learning strategies, the high usage has a mean score of 3.5 or higher, the moderate usage a mean score of 2.5 to 3.4 and the low usage a mean score of 2.4 or lower. Chi-square statistical analysis was adapted because it identifies relationship between categories of data of two variables. FI and FD groups are labeled as two categorical data: 1. FI group; 2. FD group. At the same time, students' mean score of strategies use was also categorized into high, moderate and low usage level based on Oxford and Burry-Stock (1995). Therefore, the relationship between the usage levels of metacognitive strategies with FI/FD cognitive styles was available for Chi-square Test for Independence.

With regard to qualitative analysis, the thematic analysis was employed to analyze the transcribed data. Thematic analysis is a widely-used, yet rarely-acknowledged qualitative analytic method within and beyond psychology (Boyatzis, 1998; Roulston, 2001). This method is used to identify, analyze, and report pattern (themes) which are observed from the data (Braun and Clarke, 2006). According to Braun and Clarke (2006), the six steps for exploring themes include: (1) familiarizing with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, (6) producing the report.

The main purpose of conducting the interview was to triangulate and provide support for quantitative findings. The voice recordings from the 6 students were transcribed by the researcher manually without any correcting and editing on the original transcripts. All the six sets of transcriptions were separated into FI and FD groups. Each group contains 3 sets of transcription. Thematic analysis was employed, requiring the researcher to find similar features or themes in the data which were then coded and categorized into groups. Similar features which were looked for in the transcriptions were (a) the specific metacognitive reading strategies which were identified in Chamot et al. (1990)'s Recursive Model of Metacognitive Reading Strategies. They identified 24 sub-strategies in this model, if students report one of the strategies then it will be marked and finally put into one category. By using this method, the researcher was able to code the data and find out what are the specific reading strategies that students employed; (b) newly discovered metacognitive reading strategies which are actually new strategies have not been covered in Chamot's identification; (c) differences between field dependent/field independent group of students in terms of their reading strategies.

3.8 Ethical Considerations

Before the study, the researcher had received permission from the Language Unit in Faculty of Languages and Linguistics of UM to collect data among first-year undergraduate students who are taking any University English courses. Then, the researcher approached 8 language teachers or course coordinators for permission to

enter their classes and distribute questionnaires during class hour. Participants of this study were informed of the purposes and they were required to sign a consent form. The participants were given options to withdraw from this study at any point. The information collected from all the participants was kept confidential by the researcher and was only used for this research.

3.9 Chapter Summary

This chapter outlines the methods and research design that were employed in the present study. There were 150 first-year undergraduate students who participated in this study. Both quantitative and qualitative approaches were used to collect data. For quantitative study, questionnaires which contain two types of instruments, one subject information form and one consent form were distributed to participants. Descriptive and inferential statistical analysis methods were employed to analyze the portion of quantitative data. For the qualitative approach, one-to-one semi-structured interviews were conducted with 6 participants. About 25 interview questions following two guidelines were asked and the answers were tape-recorded and transcribed to text. Thematic analysis was employed to analyze the portion of qualitative data.

CHAPTER 4: RESEARCH FINDINGS

4.1 Overview

In this chapter, analysis of data and findings are presented in accordance to the research questions. The first research question looked at the type of metacognitive strategies used by the students. To answer this question, SPSS descriptive analysis was adapted to describe the overall metacognitive strategies used by undergraduate students in reading. In addition, specific strategies reported by the students in the interview sessions were presented to validate the findings from the questionnaire surveys.

The second research question investigated the differences in selecting metacognitive reading strategies between FI and FD students. This research question was answered via independent sample t-test by comparing the scores of FI and FD students statistically. Interviews with 6 participants also provided details on the different preference in selecting metacognitive strategies of FI and FD students which mostly confirmed the findings from the questionnaire surveys.

The last research question explored the relationship between cognitive style of FI/FD and metacognitive strategies through Chi-square test for independence. The discussion was also offered along with the findings.

4.2 Participants' Usage of Metacognitive Strategies in Reading English Texts

The participants' types of metacognitive reading strategies were examined through the quantitative data from their SORS results and supported by the qualitative findings of the interviews.

4.2.1 Quantitative Analysis of Students' Metacognitive Reading Strategies

To investigate the overall score of metacognitive strategies employed by students while reading, descriptive statistics was adapted. Three levels of strategy usage suggested by Oxford and Burry-Stock (1995) are: high level (mean score ≥ 3.5); moderate level (mean score ≥ 2.5 but ≤ 3.4); and low level (mean score ≤ 2.4). These levels were used to classify the participants' SORS results. Table 4.1 shows the descriptive statistics of student's overall scores on metacognitive strategies in reading and the mean scores of each sub-strategy (Global Reading Strategies, Problem Solving Strategies, Support Strategies).

Table 4.1: Participants' Mean Scores of Metacognitive Strategies in Reading

Descriptive Statistics			
	N	Mean	Std. Deviation
Overall metacognitive strategies	150	3.7179	.39225
Problem Solving Strategies	150	3.9400	.50950
Global Strategies	150	3.6426	.37948
Support Strategies	150	3.5711	.55084

The overall mean score of students' metacognitive strategies is ($M= 3.718, SD=0.3922$) which stands at the high level of strategy usage. Concerning the three sub-strategies, Problem Solving Strategies ranks the first place ($M=3.94, SD=0.51$) which belongs to the high frequency level. This is followed by Global Strategies ($M=3.64, SD= 0.37$) and Support Strategies ($M= 3.57, SD=0.55$), and they both show high usage as well. The results showed from the overall mean score and the mean scores of each sub-strategy demonstrated that the participants employ metacognitive strategies frequently in English reading, which indicated that they are highly aware of their usage of metacognitive strategies in academic reading and they can be considered as high strategy users.

According to Mokhtari and Sheorey (2002), different mean scores show the different frequencies of using the strategies in reading, where the mean score between 1-1.79 means 'never use the strategies', 1.80-2.59 means 'rarely use the strategies', 2.60-3.39 means 'sometimes use the strategies', 3.40-4.19 means 'usually use the strategies', and higher than 4.20 means 'always use the strategies'. The following Figure 4.1 illustrates the percentage of how frequent the reading strategies are used.

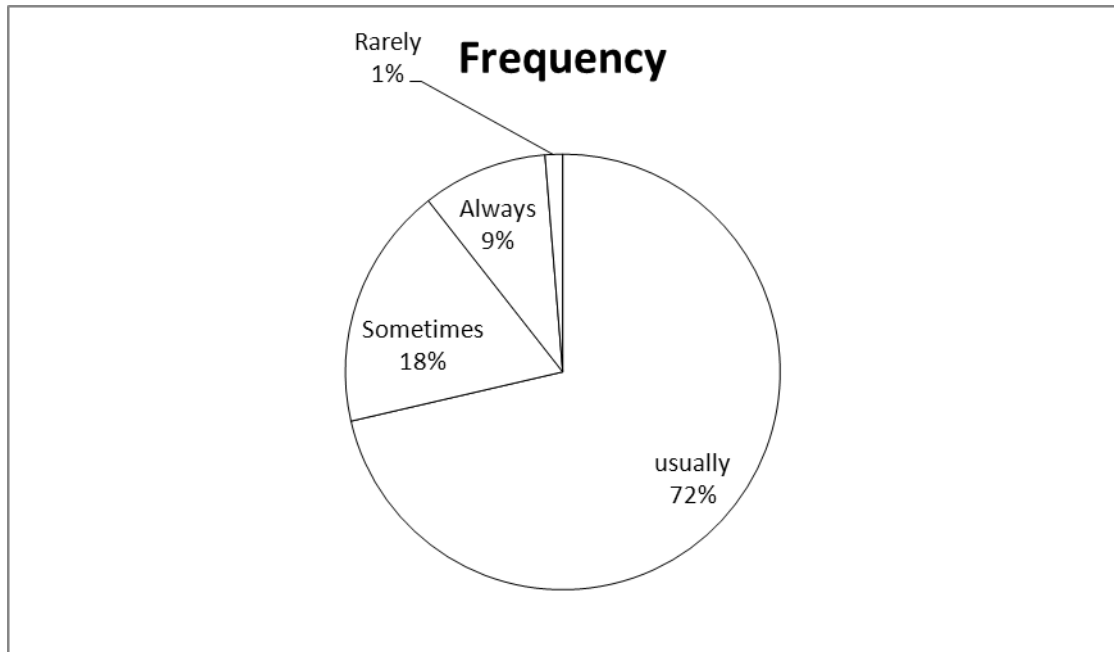


Figure 4.1: Percentage of Participants' Metacognitive Strategies

As indicated in Figure 4.1, out of 150 respondents, 71.3% of them claimed that they usually use metacognitive strategies in reading. 9.3% of the participants reported that they always use the strategies. However, 18% of the participants stated that they only use metacognitive strategies sometimes. There are still some students (1.3%) who reported that they rarely use metacognitive strategies. Interestingly, none of the participants has fallen into the category of 'never use metacognitive strategies while reading'.

4.2.1.1 The Usage of Problem Solving Strategies

Among the three sub-strategies, the usage of Problem Solving Strategies ranked the first place ($M=3.94$, $SD=0.51$), as the table below shows:

Table 4.2: Problem Solving Strategies (N=150)

	Mean	Std. Deviation
PROB1:I read slow and carefully to make sure I understand what I am reading.	3.9200	.87868
PRON2:I try to get back on track when I lose concentration.	3.9867	.89732
PROB3:I adjust my reading speed according to what I am reading.	3.9867	.88981
PROB4:When text becomes difficult, I pay closer attention to what I am reading.	4.0867	.91912
PROB5:I stop from time to time and think about what I am reading.	3.5267	.87237
PROB6:I try to picture or visualize information to help remember what I read.	3.8133	1.03228
PROB7:When text becomes difficult, I re-read it to increase my understanding.	4.3333	.68215
PROB8:When I read, I guess the meaning of unknown words or phrases.	3.8667	.85661

All eight items (“read slowly and carefully”, “get back on track”, “adjust reading speed”, “pay extra attention” .etc.) were reported being frequently used with a mean score higher than 3.50. The results were consistent with a previous study done by Mokhtari and Reichard (2002). They stated that among the three sub-scales, Problem Solving Strategies are usually the most frequently used strategies by the participants. In the present study, the results showed that the participants are generally aware of the reading process and are able to actively take actions to solve problems they may face while reading. For example: they re-read it twice or many times as stated in PROB7, “*when text becomes difficult, I re-read it to increase my understanding*” (M=4.33, SD=0.68). They also pay extra attention to the content when they find it difficult, as stated in PROB 4 (M=4.08, SD=0.91).

Similar findings were obtained from the interviews. According to the six interviewees, the particular actions they take when they have difficulties in reading include: reading

the text more than once; trying to check the meanings of unknown words; spending more time and giving more concentration on the information; discussing with other people, etc.

In conclusion, students tend to use various kinds of problem solving strategies in dealing with reading difficulties; they were able to match the particular problems with the appropriate strategies.

4.2.1.2 The Usage of Global Reading Strategies

For the next frequently used sub-strategy which is Global Reading Strategies, students showed the ability to plan the reading and to set objectives before reading. Table 4.3 displays that most of the participants have high usage of Global Reading Strategies according to Oxford and Burry-Stock (1995).

Table 4.3: Global Strategies (N=150)

	Mean	Std. Deviation
GLOB1:I have purpose in mind when I read.	3.6733	.80682
GLOB2:I think about what I know to help me understand what I read.	3.7600	.66231
GLOB3:I take an overall view of the text to see what it is about before reading it.	3.6000	.89742
GLOB4:I think about whether the content of the text fits my reading purpose.	3.5800	.80493
GLOB5:I review the text first by noting its characteristics like length and organization.	3.5000	1.04110
GLOB6:When reading, I decide what to read closely and what to ignore.	3.6733	.78296
GLOB7:I use tables, figures, and pictures in text to increase my understanding.	3.6200	.80059
GLOB8:I use context clues to help me better understand what I am reading.	3.6733	.81510

GLOB9: <i>I use typographical features like boldface and italics to identify key information.</i>	3.3067	.83503
GLOB10: <i>I critically analyze and evaluate the information presented in the text.</i>	3.5000	.76632
GLOB11:<i>I check my understanding when I come across new information.</i>	3.8267	.68293
GLOB12:<i>I try to guess what the content of the text is about when I read.</i>	3.9533	.73582
GLOB13: <i>I check to see if my guesses about the text are right or wrong.</i>	3.6867	.73399

As seen from table 4.3, all the items except item 9 were reported by participants to be of high usage (mean score ≥ 3.5), while item 9 “*I use typographical features like boldface and italics to identify key information*” fell into moderate usage with mean score of 3.30 which was less than 3.50. Regarding the specific strategies, among the 13 items of Global reading strategies, GLOB 12 “*I try to guess what the content of the text is about when I read*” was reported by students as being mostly used (M=3.95), which indicated that the participants prefer to get a general topic or ideas of the reading texts before reading. GLOB11 “*I check my understanding when I come across new information*” and GLOB2 “*I think about what I know to help me understand what I read*” showed that students are able to monitor their comprehension of texts by checking their own understanding and they are able to link their prior knowledge to the new reading information.

However, as reported, participants use GLOB 9 moderately. In order to confirm the results and examine the reason, the researcher asked this question again during the interview sessions with the participants. Two out of the six interviewees reported that if there are some features they would like to pay attention to, they find this strategy useful for their reading. The reason why they reported that they use this strategy moderately

during the questionnaire survey is because they misunderstood the statement. However, other four respondents said they are too busy with other information, so they seldom pay close attention to this, but they know it might be important for reading.

4.2.1.3 The Usage of Support Reading Strategies

As far as the Support Strategies are concerned, this category is employed by learners to improve their understanding via different approaches. The following Table 4.4 illustrates the findings.

Table 4.4: Support Strategies (N=150)

	Mean	Std. Deviation
SUP1:I take notes while reading to help me understand what I read.	3.4733	.95325
SUP2:When text becomes difficult, I read aloud to help me understand when I read.	3.5000	1
SUP3:I underline or circle information in the text to help me remember it.	3.8733	1.08248
SUP4:I use reference materials (e.g. a dictionary) to help me understand what I read.	3.6733	1.08990
SUP5:I paraphrase (restate ideas in my own words) to better understand what I read.	3.4600	0.94571
SUP6:I go back and forth in the text to find relationships among ideas in it.	3.7000	.88044
SUP7:I ask myself questions I like to have answered in the text.	3.3600	0.94322
SUP8:When reading, I translate from English into my native language.	3.4533	1.13862
SUP9:When reading, I think about information in both English and my mother tongue.	3.6533	1.12915

For Support Strategies, 5 out of 9 items were reported as being frequently used (mean \geq 3.5). The most frequently used strategy is SUP 3: “*I underline or circle information in the text to help me understand what I read*” (M=3.87, SD=1.08). The second and third

frequently used support strategies are: “*I go back and forth in the text to find relationships among ideas in it*” and “*I use reference materials (e.g. a dictionary) to help me understand what I read*”. The results indicated that the participants may have the reading habit of highlighting, underlining or circling, and they are able to get help from references like dictionary or reference books. This finding is in line with Cohen (2014) which stated that the less proficient language learners are more likely to rely on dictionary to solve their reading problems than skilled language learners. For this reason, ESL learners naturally select more support reading strategies to enhance their understanding.

The answers given by the participants in the interviews also support this finding. Almost all the six interviewees claimed that they often check dictionary when they encounter unknown vocabularies or phrases if they are allowed to, and only one interviewee reported that she will also guess the meaning of the words based on the context of the sentence and her understanding. In addition, it is interesting to notice that SUP 8 “*When reading, I translate from English to my native language*” is not usually employed by student, but they would like to think about information in both English and their native language. This finding is similar with Magogwe’s (2013) study which stated that in Botswana, students reported moderate use of translating, because they are generally discouraged by their teacher to translate reading information to their mother tongue. Similarly, one respondent (FI3) also mentioned during the interview that he does not like to directly translate English information to his mother tongue since primary school because his English teachers at that time wanted the students to understand only in the

initial language and avoid word-to-word translation. However, when they found that some English words are similar with certain words in their own language, they would also try to understand the information both in English and their mother tongue. Malaysia is a multilingual country; therefore, ESL learners have more opportunities to speak English. This is the reason why they are also able to think in the English language while reading.

In summary, among the 30 strategies mentioned, 25 strategies (83%) which include 8 Problem-Solving strategies, 12 Global Strategies and 5 Support Strategies showed high usage ($M \geq 3.5$). Only 5 of them fell into the medium level ($2.4 < M < 3.5$). No strategies show low level of usage as reported in the findings. The participants on the whole illustrated high frequency of use of metacognitive strategies in academic reading. They are aware of their reading process and are able to plan the goals before reading, monitor the reading process, solve the problems encountered during the reading and seek help to better understand the reading text. They were reported to use metacognitive reading strategies at a high level ($M=3.72$), and for the three sub-strategies: Problem Solving Strategies are used most frequently with a mean score of 3.94. This is followed by Global Strategies with a mean score of 3.64 and Support Strategies with a mean score of 3.57.

4.2.2 Qualitative Analysis of Students' Metacognitive Strategies

As for metacognitive reading strategies employed by the six interviewed participants, the first guiding question regarding what specific strategies they use frequently was

extended to a few more questions. They were requested to clarify the metacognitive strategies they use in reading. The specific strategies they reported were coded based on Chamot et al. (1999) recursive model of metacognitive reading strategies which has been introduced in Chapter Two. This model identified four elements of metacognitive strategies which involve planning, monitoring, solving problems, and evaluating. In total, 24 sub-strategies under each element were identified. The categories of strategies are: (a) strategies for planning reading process, (b) strategies for monitoring reading comprehension, (c) strategies for solving reading difficulties, (d) strategies for evaluating reading outcomes. Table 4.5 presents the reported strategies by the six participants.

Table 4.5 Strategies Employed by Six Interview Respondents (Chamot et al. 1999)

Metacognitive strategies	Sub-strategies	FI1	FI2	FI3	FD1	FD2	FD3
Planning	Set goals	√	√	√	√	√	√
	Directed attention	√	√	√	√	√	√
	Activate background knowledge	√	√	√	√	√	√
	Predict	√	√	√	√		
	Organizational planning		√	√	√		
	Self-management	√		√	√		√
Monitoring	Ask if it makes sense	√	√	√		√	
	Selectively attend	√	√	√	√	√	√
	Deduction/Induction						
	Personalize/Contextualize	√		√	√		
Problem solving	Take notes	√	√	√	√	√	√
	Use imagery			√		√	√
	Manipulate/act out						
	Talk yourself through it						
	Cooperate	√	√	√	√	√	√
Problem solving	Inference	√	√	√	√	√	√
	Substitute				√		
	Ask questions to clarify	√	√	√	√	√	√

	Use resources	√	√	√	√	√	√
Evaluating	Verify predictions and guess						
	Summarize	√	√	√	√	√	√
	Check goals	√	√	√			
	Evaluate yourself	√	√	√	√	√	√
	Evaluate your strategies						

According to Chamot et al. (1999), there are a total of 24 sub-strategies involved in metacognitive reading strategies. The results from the interview transcriptions revealed that the maximum number of strategies used by FI student is 19 (79% of the total strategies) while the maximum number of strategies used by FD student is 13 (54%). Generally, FI students reported that they use more metacognitive strategies compared to FD students, and this finding is consistent with the quantitative part of the study which shows that FI students tend to use more metacognitive reading strategies than their FD counterparts. Furthermore, of the 24 sub-strategies, 11 strategies are used by all the six participants, and they are: goal setting, attention directing, previous knowledge activating, selectively attending, note taking, cooperating, making inference, asking question to clarify, using resources, summarizing and evaluating oneself. The following details present the specific strategies that the participants use under each category.

(a) Strategies for planning the reading process

Planning Strategies help learners develop their thoughts before doing the task. Good learners think in advance of their aims in doing the task and the appropriate strategies to employ in order to reach the goal. This will help them become self-regulated (Chamot et al., 1999). In the present study, the six participants revealed that they are able to employ

planning strategies. They performed well in setting reading goals, directing attention and activating prior knowledge. Below are the examples from the interview on how they reported their Planning Strategies in reading. (The transcriptions presented below have not been doctored by the researcher)

***FI3:** I usually ask myself certain questions which i want to find answer within the article that I am suppose to read through, i don't read widely, i will think first and then go read it. (setting goals)*

***FD1:** Normally, I think first what are the type of things i want to get from this reading, then I do basic reading to know what kind of article it is, what is it related, sport? Religion?. Then I can prepare myself, if I just read without any ideas, it is quite difficult. (setting goals)*

***FII:** Usually we will have the learning outcome, so I will look through about the learning outcome to see what are the things I should focus more on. (directed attention)*

***FI3:** First time reading you cannot choose which to ignore, because first time you probably won't know what is important. Then you read second time, you can choose which part to read and which part to skip. Some parts is just opinion of writer, it's not the facts, so you don't need to interpret the opinion of writer again. (directed attention)*

***FII:** first of all, I preview it to make the link about what I have studied before. (activate background knowledge)*

***FD2:** yes, I always bring my knowledge to new reading, to think what I know before about the new reading text. (activate background knowledge)*

According to Mokhatri & Sheorey (2002), Planning Strategies are part of Global Reading Strategies because it involves learners to actively monitor and manage their learning process through intentional and careful planning during the whole process. It happens before reading and consistently works throughout the whole process. In the present study, both quantitative and qualitative findings indicated that the participants are good at setting reading goals and predicting what the reading content is about. They

also tend to think about their background knowledge and build the link between prior knowledge and new information.

(b) Strategies for monitoring reading comprehension

When learners need to monitor their reading comprehension, they would want to concentrate on the task and ignore other distractions; they take notes of the key words or concept to help them remember and understand the text. For example, FI1 says “*I will take short notes on a piece of paper, such as the key points or something important like that*”; FI3 says “*yes, I will take notes, it normally is very short like certain points or keys for myself*”. All the six participants reported that they take notes during reading, and the notes are usually key words and important concepts as well. They also reported that they would like to work with classmates or peers so that they can do better on the task. FI1 says “*I will ask friends to see what’s their understanding of this certain question*”. FD1 also claims that “*sometimes I will check with my friends if they are around me, sometimes they get more clear picture then I will take their opinion, sometimes by explaining to them, I become more clear myself also.*” However, other monitoring strategies such as using imagination, manipulating, and talking to themselves to reduce anxiety were not reported by the interviewees very often. Only one participant (FD3) pointed out that she uses her imagination to picture the things she is learning; for instance, when she studies Anatomy, she will imagine where a specific part of the body is located and how the part works. Metacognitive monitoring helps learners in checking their progress towards the goals identified; it is described as regulation of the learning process and it plays an important role in metacognition (Marzano et al.

1988). Therefore, the instruction of metacognitive strategies in the future should pay more attention to the methods of training students to monitor their comprehension while doing the learning task.

(c) Strategies for solving reading problems

Regarding problem solving strategies, the result in qualitative study was in line with the quantitative part of the study which indicated that students do not have any problem in solving difficulties encountered during reading. They are able to use various problem solving strategies such as re-reading the content, guessing unfamiliar words from the contextual clues, and figuring out the meaning from sentence relations. Besides, they are able to seek help from others for explanation and are able to use dictionaries, textbooks and the Internet when no one can help them. The most frequently used problem solving strategies were using resources and cooperating with others, as the respondent FI2 said “*I always check dictionaries when I cannot understand a sentence, I will check the difficult words first*”, and FI 3 mentioned that dictionaries are the best, but nowadays, online search engine or Google is also user-friendly. Working or discussing with other people was also reported by the interviewees as a popular strategy they use. A participant mentioned that “*I prefer to talk to others, to get different understanding and different opinions*” (FD1). However, in the category of problem solving strategies, only one out of six participants claimed that he/she employs substitute strategies where substitutes or synonym words are used to take place of those unknown words. This shows that the participants are not very familiar with this strategy.

(d) Strategies for evaluating reading outcomes

After completing the reading task, good learners will evaluate not only whether they have reached their goals or whether they completely understand the reading text, but they also evaluate how well the strategies have worked in the reading process. Among the five sub-strategies of evaluation, the participants reported that they use summarizing, checking goal and evaluating themselves the most. All six participants reported that they practice summarizing in reading; some students even use it as the main reading strategy. For example, F11 mentioned that *“I do summary, summarize is an easier way for me to look back to the main points, so maybe after few months I want to look back at the article, I just straight away look at the summary without reading the whole article”*. Another respondent pointed out that *“when I write a summary, actually I will get a more clear picture... ”* (FD1). Apart from summarizing, students also like to evaluate themselves to check how well they can understand the reading text and also to identify their strengths and weaknesses. F13 stated that *“after reading, sometimes I want to form your own opinion, maybe some point about the reading text I may disagree in certain extent, so I can form your personal thinking at the end when I evaluate the reading text again ”*. Similarly, FD1 student reported that during the evaluation, he can also judge himself based on the language level of the reading text so that he can improve himself. One respondent (FD3) also reported that she would like to know whether she understands the text fully even though she is half way through the reading. The same findings were revealed in Marzano et al. (1988) which demonstrates that the process of evaluating learners’ learning outcomes can occur both in the middle and at the end of a task. Moreover, FD3 claimed that she likes to evaluate the reading material to see whether the information is clearly delivered, to find out if there is any question attached

to the text and to check whether the questions are clear enough to understand. Nevertheless, none of them reported that they will evaluate the strategies they employ.

(e) Newly discovered reading strategies

Chamot et al. (1999) identified four main metacognitive strategies in the recursive model (Planning, Monitoring, Problem Solving and Evaluating) and a total of 24 sub-strategies under them. Meanwhile, the present study has explored other metacognitive strategies which were not covered by this recursive model. The most frequently reported strategies are skimming/scanning, mind mapping, translating, paraphrasing and pausing to refresh one's mind.

For the scanning strategy, FI3 claimed that *"I also practice speed reading, it's like scan the text to get a general idea."* FD2 mentioned that she usually has an overview about the reading text, which means she will scan the text very quickly. By doing this, she will get a general idea and basic information of the reading text.

There were four out of six participants who mentioned that they use mind map to help them understand the text better. FI2 said *"I will do the mind map also, because sometimes one process is related to another process, but in reading there is no clear relation, so I make the mind map to relate them"*. Same goes to FI1 who said that she will also do mind map on a piece of paper.

Translating is another unique strategy usually employed by ESL and EFL students.

Mokhtari and Sheorey (2002) stated that when they developed the metacognitive measurement SORS, they added “translating from one language to learners’ mother tongue” since translation is clearly used very often by ESL learners. FD2 said “*I do translating quite often, I will translate English to my mother tongue by which I can link out, then I understand better*”.

Next, all three FI participants mentioned that they use paraphrasing. For instance, FI3 stated that “*I will paraphrase the sentence, when I am doing assignment, you cannot copy the sentence directly to answer the question without your own understanding, so the best way is to paraphrase to your own way. Paraphrasing is important for me*”.

The last newly discovered strategy is taking a break to refresh oneself. The participants reported that they tend to pause for a while when they have lost their concentration or when the reading text is too difficult for them to understand.

In summary, the results indicated that the six participants were aware of the use of metacognitive strategies in their reading process. They have the ability to make their reading plans, solve the problems while reading, monitor and notice the reading process and assess results after reading.

The qualitative findings have provided sufficient evidence and supported the quantitative findings in the aspect of using three sub-categories of metacognitive reading strategies. Some of the strategies such as setting reading goals, planning reading

process, checking one's understanding, re-reading, and using reference materials were reported as being frequently used in both quantitative and qualitative study. In addition, the newly discovered reading strategies which were reported by the participants have given a more comprehensive and complete picture of their metacognitive strategy employment. However, the results also show that some strategies are still less frequently selected, and this requires more attention and strategy training so that the participants can make full use of their metacognitive strategies.

4.3 The Differences between Metacognitive Strategies Used by FI and FD Students

In order to answer the second research question, independent sample t-test was employed to examine the quantitative data obtained from the questionnaire surveys. The interviews with six FI and FD participants have also revealed the different preference in selecting the reading strategies.

4.3.1 Quantitative Analysis of the Difference between FI and FD Students

Regarding Metacognitive Strategies

The null hypothesis for the second research question is: there is no significant difference in the overall score of metacognitive reading strategies measured by SORS between FI and FD students. Independent sample t-test was employed to answer this question. The findings are presented in Table 4.6. The analysis was done to compare the overall score of metacognitive strategies of FI and FD participants to find out whether they have a

significantly different overall mean score and the mean score of three sub-strategies (Global strategies, Support strategies and Problem solving strategies).

Table 4.6: The Overall Usage of Metacognitive Reading Strategies by FI and FD Participants

Mean score	FI/FD	N	Mean	Std. Deviation	P-value	T
Overall mean	FI	75	3.7422	0.4310	0.450	0.578
	FD	75	3.6936	0.3504		
GLOB mean	FI	75	3.5672	0.4205	0.014*	-2.474
	FD	75	3.7179	0.3187		
SUP mean	FI	75	3.6844	0.5062	0.011*	2.567
	FD	75	3.4578	0.5732		
PROB mean	FI	75	3.9750	0.5556	0.402	0.841
	FD	75	3.9050	0.4598		

As shown in Table 4.6, when comparing FI and FD participants in their use of metacognitive reading strategies, it is clear that the mean score of FI participants (M=3.742, SD=0.43) is higher than the mean score of FD participants (M=3.693, SD=0.35), which indicated that, in general, the former participants use metacognitive reading strategies more frequently than the latter. According to Cohen (1998), in the reading process, FI students are inclined to employ more reading strategies like planning, monitoring the reading comprehension and critically analyzing the reading text. Therefore, FI learners may be better at applying metacognitive strategies in reading context.

The findings from current research were also supported by some of the former studies such as by Zahra Naimie (2010) and Davis (1987). They reported that FI students use more metacognitive strategies than their FD counterparts. However, statistical analysis showed no significant difference between FI students (M=3.742, SD=0.43) and FD (M=3.693, SD=0.35) students in overall metacognitive reading strategies use ($t=0.578$; $p>0.05$).

In terms of the comparison between FI and FD students' three sub-strategies, the use of Global Strategies, FI students (M=3.57, SD=0.42), FD students (M=3.71, SD=0.31) condition, showed a significant difference with ($t=-2.474$; $p<0.05$). Same goes to Support Strategies, FI students (M=3.68, SD=0.51) FD students (M=3.46, SD=0.57) condition, also showed a significant difference with ($t=2.567$; $p<0.05$). The results indicated that FI and FD students employ different Global Strategies and Support Strategies in their reading text. However, these participants reported the same preference in using Problem Solving Strategies.

4.3.1.1 Global Strategies Used by FI and FD Students

Concerning the 13 Global strategies employed by FI and FD participants, Table 4.7 presents the differences between these participants in terms of their use of each Global Strategies.

Table 4.7: Global Strategies used by FI and FD participants

Name	Strategies	FI	FD	P-value	T
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		Mean	SD	Mean	SD		
GLOB1	Setting purpose for reading	3.686	0.839	3.760	0.768	0.189	-1.319
GLOB2	Using prior knowledge	3.546	0.621	3.973	0.636	0.000*	-4.155
GLOB3	Previewing text before reading	3.586	0.987	3.613	0.803	0.856	-1.181
GLOB4	Checking how text content fits purpose	3.533	0.794	3.626	0.818	0.480	-0.709
GLOB5	Noticing text characteristics	3.360	1.134	3.640	0.924	0.100	-1.657
GLOB6	Determining what to read and what to ignore	3.520	0.935	3.826	0.811	0.034*	-2.145
GLOB7	Using text features (tables, figures, pictures)	3.600	0.805	3.640	0.764	0.756	-0.312
GLOB8	Using context clues	3.600	0.805	3.746	0.823	0.272	-1.103
GLOB9	Using typographical aids	3.213	0.934	3.400	0.716	0.172	-1.373
GLOB10	Critically evaluating what is read	3.666	0.759	3.333	0.741	0.007*	2.720
GLOB11	Checking one's understanding	3.760	0.732	3.893	0.627	0.233	-1.197
GLOB12	Predicting or guessing text meaning	3.840	0.771	3.406	0.684	0.059	-1.903
GLOB13	Confirming prediction	3.560	0.792	3.813	0.651	0.034*	-2.139

As presented in Table 4.7, FD participants used GLOB 2 “*thinking about prior knowledge when reading*” more frequently compared to FI participants, and the difference is significant ($t=-4.155$; $p<0.05$). The finding indicated that FD participants prefer to learn materials relevant to their own experience or they prefer to find some links between their prior knowledge with new information. Therefore, in reading a text, they like to think about what they have learned before, and apply it in the new learning situation. Besides, GLOB 6 “*determining what to read and what to ignore*” also shows a significant difference between FI and FD participants ($t=-2.145$; $p<0.05$). FD participants use more of this strategy than FI participants. The reason might be that FD

participants like to think globally, read through the text for general information and are not detail oriented. When it comes to information taking, they are easier to get the main idea but ignore the information which is irrelevant. However, FI participants would prefer to pay attention to each detail in a text, and they are not very good at choosing important and less important information.

Another two strategies which were GLOB 11 “*critically evaluating what is read*” ($t=2.720$; $p<0.05$) and GLOB 13 “*confirming prediction*” ($t=2.139$; $p<0.05$) show remarkable differences between FD and FI participants. For item GLOB 11, FI participants seem to be better in critically analyzing and evaluating the reading text, which is in line with their characteristic in learning that is they are better at thinking analytically and evaluating information critically (Witkin et.al, 1971). On the contrary, FD participants seemed to have more preference in confirming their predictions either by checking with the correct answers or with other people. This difference may be due to the fact that FD learners are more likely to rely on cues from others, and allow others to structure information for them and they are more likely to be influenced by other people and external environment (Witkin and Goodenough, 1981).

In summary, there are significant differences in the use of 4 out of 13 specific strategies between FI and FD participants. In addition, the participants from both groups showed their preference in choosing some particular Global Strategies which match with their characteristics of FI or FD cognitive style.

4.3.1.2 Support Strategies Used by FI and FD Students

With respect to Support Strategies, the following table shows the difference between FI and FD participants.

Table 4.8: Support Strategies used by FI and FD participants

Name	Strategies	FI		FD		P-value	T
		Mean	SD	Mean	SD		
SUP1	Taking notes while reading	3.573	0.932	3.373	0.969	0.200	1.288
SUP2	Reading aloud when text becomes hard	3.506	1.369	3.493	1.189	0.949	0.064
SUP3	Highlighting text information	3.866	1.082	3.880	1.090	0.940	-0.075
SUP4	Using reference materials	3.680	1.092	3.666	1.094	0.941	-0.075
SUP5	Paraphrasing textual information	3.773	0.814	3.133	0.949	0.000*	4.430
SUP6	Going back and forth to see relations	3.786	0.793	3.613	0.957	0.229	1.207
SUP7	Asking oneself questions	3.600	0.094	3.120	0.115	0.002*	3.212
SUP8	Translating to native language	3.613	1.149	3.293	1.112	0.085	1.733
SUP9	Thinking both in English and mother tongue	3.760	1.037	3.546	1.211	0.249	1.158

FI participants showed more preference for almost all Support Strategies including note-taking, reading aloud, asking oneself question, making paraphrase to original sentences and translating English to their native language. Among them, SUP 5 “*paraphrasing textual information*” ($t=4.430$; $p<0.05$) and SUP 7 “*asking oneself questions*” ($t=3.212$; $p<0.05$) show a significant difference between FI and FD participants. For both strategies, FI participants use them more frequently than FD participants, and this indicates that they prefer to paraphrase the textual information and also ask themselves questions related to the reading text. The reason might be that they

tend to create their own structure in understanding information and they are good at reorganizing and restructuring information into another way. Meanwhile, FD participants like to accept the information it in the original way (Jonassen & Grabowski, 1993). Similarly, Abraham (1985) stated that FI subjects monitor their reading comprehension more often in reading process, which might be the reason why they usually ask themselves questions regarding their own comprehension of the reading text to monitor their understanding.

4.3.1.3 Problem-Solving Strategies Used by FI and FD Participants

Table 4.9 shows the comparison between FI and FD participants in terms of using Problem-Solving Strategies in reading English texts.

Table 4.9: Problem-Solving Strategies used by FI and FD participants

Name	Strategies	FI		FD		P-value	T
		Mean	SD	Mean	SD		
PROB1	Reading slowly and carefully	3.906	0.946	3.933	0.810	0.853	-.185
PROB2	Trying to stay focused on the text	3.933	0.934	4.040	0.861	0.469	-.727
PROB3	Adjusting reading speed	4.040	0.861	3.933	0.920	0.465	.733
PROB4	Paying close attention to reading	4.066	1.004	4.106	0.831	0.791	-.266
PROB5	Pausing and thinking about reading	3.573	0.824	3.480	0.920	0.514	.654
PROB6	Visualizing information about the text	3.946	1.064	3.680	0.988	0.114	1.290
PROB7	Re-reading for better understanding	4.373	0.673	4.293	0.693	0.475	.717
PROB8	Guessing meaning for unknown words	3.960	0.861	3.773	0.847	0.183	1.338

According to Table 4.9, it was found that there is no significant difference (P Value $>.05$) between each Problem Solving Strategy used by FI and FD participants. Both groups of participants showed frequent use of problem solving strategies. It seems that they have no problem in solving difficulties directly towards reading text. Among the 9 specific strategies, FI participants reported that they usually re-read, pay attention to text and adjust reading speed to solve the reading problems very often. In contrast, FD participants reported that they re-read, try to stay focused and pay attention when reading problems occur.

As a conclusion, there is a significant difference in using metacognitive strategies between FI and FD participants especially in employing Global Strategies and Support Strategies. Generally speaking, FD participants outperformed their FI counterparts in using Global Strategies with more frequent usage and higher mean scores. Yet, FI participants showed more preference on Support Strategies which indicated that FI students are more flexible to take support from various sources.

4.3.2 Qualitative Analysis of the Differences between FI and FD Participants Regarding Their Metacognitive Strategies

As indicated in the quantitative part of the study, the overall usage of metacognitive reading strategies employed by FI and FD participants showed no significant difference. However, statistical analysis was explored among the three sub-strategies to see whether significant difference exists in the performance of the specific three sub-strategies. It

was found that FI and FD participants differ in using Global strategies and Support strategies. Therefore, the second guiding question in the qualitative study aims to confirm the differences between FI and FD participants.

Three FI participants and three FD participants were interviewed and the transcriptions were carefully coded. The trends of choosing strategies were categorized into two groups based on the preference of using reading strategies by each FI and FD group.

4.3.2.1 Reading strategies preferred by FI Group

The results showed that FI participants reported five apparent patterns in choosing reading strategies and processing reading information. Firstly, all of them reported that when receiving information, they feel they are good at identifying detailed components of reading information and then put them together to restructure for better understanding.

This is how they reported: FI1 said *“I think compare to some of my friends, I am good at reading details, I can find some implied information”*; FI2 said *“I think I am good at it, I usually pay more attention to the detailed information in reading text”*; and FI3 said *“I think I have quite good skill in it. For example, I got 9.5 out of 10 point in this type of task, in Law faculty, we have to look into the certain detailed information and cases”*.

As proven by empirical research, FI participants may make a great attempt to perceive every detail of a reading material because it is relatively easier for them to process information from each component to form their understanding. When reading, they are considered as “bottom-up” reader which means they process information from the most

specific information such as the meaning of phrases and sentences towards the most general information at the top. Therefore, FI participants stress on the meaning of small elements or specific information rather than the meaning of the whole text (Gough, 1972). However, this reading habit is time-consuming and may hinder the speed of reading. People applying this reading mode tend to be hesitant in making decisions on time (Meixin, Zhou, 2010).

Secondly, two FI participants claimed that besides other strategies, they would like to build a mind map to help them understand the reading texts as well. One student mentioned that “*mind mapping helps to present knowledge in a more understandable way. If I draw a mind map out, I will see the full picture, it’s better to have something can see*” (FI3). Mind mapping is a creative technique which lets the learners remember ideas or comprehend written information. It requires them to be creative in order to generate new ideas and make the connections between the information. (Moi & Lian, 2007). Previous study done by Noppe & Gallagher (1977) has found that FI participants perform better in creative thinking than their counterpart. They are more active in learning and more flexible in thinking and solving problems. That might be the reason why they showed their preference in using mind map during reading.

Besides getting details and mind mapping, FI participants also showed a preference in paraphrasing the original information, which is in line with the finding of the quantitative study. It seems that FI participants find that paraphrasing could make the reading text easier for them to understand. Normally, they reword, change some difficult

phrases, and re-construct the sentence structure based on their own understanding. It can be argued that an FI person is more likely to restructure or reorganize information when presented with some information as field, whereas an FD individual tends to adhere to the original information or organization (Witkin et al, 1977). Davis & Frank (1979) claimed that paraphrasing is considered as a reconstructing process which is usually preferred by individuals with field independent characteristics. Meanwhile, individuals who have field dependent characters make less effective use of reconstructing process.

The fourth pattern is when problems or difficulties occur; all three FI participants reported that they prefer to solve the problem by themselves first. FI2 said "*first, i will try by my own to solve the problems*", and FI3 also mentioned "*for the initial problem, i will solve it myself first, i will search reference books, online Google it. If really i cannot, i will choose to discuss with friends or lecturers*". The reason why they prefer individual work might be because they are not so socially-oriented and not so skillful in interpersonal relationship (Marshal,2002). They tend to be more independent, competitive and have more self-confidence. They are skillful in analyzing and doing task-oriented project but are less skillful in cooperating with others (Witkin et al., 1977).

The last trend is the participants' performance in evaluation which involves the evaluation of one's own understanding, the evaluation of the external learning environment and the evaluation of the learning strategies they employ. Based on the interviews, FI participants reported that they will check their own understanding by asking themselves questions more often. Quantitative results also show that FI

participants tend to ask question to their own selves more often than FD participants. The reason would be they are more aware of their feeling and they think on their own rather than getting external help. It is interesting to note that when FD participants try to evaluate, they not only check their own understanding, but also assess how the reading materials deliver information, and how good is the writing style.

4.3.2.2 Reading Strategies Preferred by FD Group

In comparison with FI participants, it is not difficult to notice that FD participants tend to choose different strategies in reading process where some of the strategies they choose may even be the opposite of their FI counterparts'. The trends or patterns found in this group are: taking information more globally, cooperating with others more often, not paraphrasing frequently and evaluating after reading from different perspectives.

As demonstrated before, when perceiving information, FI participants tend to pick up the small detailed components and then combine them to form a big picture. On the other hand, it seems that FD participants would prefer to take the information more briefly. In other words, they look at the information more globally than FI participants, and they will ignore some details and approach a task more holistically (Witkin et al., 1977).

Furthermore, all three FD students reported that they like to solve reading problems together with their friends, lecturers or peers. One participant said that he likes to share

his idea with other people, and he also likes to see different point of views. He prefers learning in a more casual environment through communication and activities, not just in a formal classroom setting. Another FD participant added "*I prefer to do the discussion or ask lecturers, because from discussion I can also get motivation from others, I can add their understanding and relate it to mine*". The statement shows that FD participants are good at interpersonal relationship, and they tend to solve problems in a more social or collaborative way (Jonassen & Grabowski, 1993). In addition, Witkin (1991) stated that FD learners are prone to interact with their surroundings, and they have great interest in communicating with others and are good at activities that need discussion and communication. Therefore, they are more open to different ideas and more likely to be influenced by people's opinions or teacher's instructions. These factors enable FD learners to acquire information and knowledge better in causal and natural situation and benefit more from natural learning environment which is outside a classroom setting.

In contrast to FI participants who prefer to paraphrase when processing information, this strategy does not seem to be very popular among FD participants. One participant said "*I don't do paraphrase often, normally I will just look back at the sentence itself to understand the initial sentence. Because some sentence if you change the expression or structure, the meaning is different already. I scared that if I paraphrase it, I will change the meaning or miss some parts of information*". Previous studies (Witkin et al, 1999) found that in dealing with learning task, FD learners are more likely to rely on characteristics of the learning task itself. They are not good at restructuring and

reorganizing information but prefer to go along with the information “as it is”. On the contrary, their FI counterparts enjoy applying this strategy in reading comprehension.

The last pattern found was on their evaluation. FD participants mentioned not only about evaluating their own understanding and judging their reading competence, but also about evaluating the reading material itself and the writer or the format of the reading text. This is how the participants reported: FD1 said “*I will think about the level of language of the reading text...and sometimes you can feel this guy is going to talk about this topic but he is going off the topic. I will also evaluate is the message clearly delivered to me this kind of things*”, and FD3 said “*I will look at whether the reading questions is clear enough...I will also judge the people who write the reading text and questions*”. From the interview, it would be said that FD participants tend to evaluate information from different perspectives such as the quality of information as an input, and they tend to emphasize more on the external factors than on their own comprehension. As previous researches revealed, FD individuals are external-oriented people who tend to depend on the external environment to promote their understanding. They view the background or the information as important to determine their own understanding. This is why the quality of the information such as the quality of reading text is considered a factor to be evaluated by them in the present study.

The above findings indicated that FI and FD participants both have their own preference in using metacognitive reading strategies. The results demonstrate that FD and FI learners perform differently in selecting information; FI more analytically and FD more

globally. They also differ in using paraphrasing as a specific reading strategies; FI outperformed FD in using paraphrasing. When evaluation comes, they look at it from different angles. FI learners focus more on their own understanding; yet, the FD learners would pay attention to the external factors. Apart from that, FD learners also use a mind map as a reading strategy, and FI learners outperformed FD learners in using scanning/skimming strategies. However, we should remember that both FI and FD cognitive styles have their advantages and disadvantages and no one is superior to the other. All individuals can be successful language learners when appropriate learning strategies are used.

4.4 The Relationship between FI/FD Cognitive Styles with Participants' Metacognitive Reading Strategies

In order to examine if there is any relationship between students' usage of metacognitive reading strategies with their FI/FD cognitive styles, SPSS Chi-square test for independence was calculated comparing the level of metacognitive strategies usage in FI group and FD group of participants. The two independent variables are: (1) the three levels of usage (1=high, 2=moderate, 3=low) of the metacognitive reading strategies and the three sub-strategies, and (2) FI (group1)/FD (group2) cognitive styles of the students. If the result shows that the two variables are independent with one another, then it indicates that there is no relationship between the two variables. The null hypothesis established is: there is no relationship between students' usage level of metacognitive reading strategies and their FI/ FD cognitive styles.

Table 4.10: Chi-square test for the overall usage of metacognitive reading strategies between FI and FD participants

Contingency table						
			Overall usage			Total
			high	moderate	low	
Group	FI	Count	54	20	1	75
		Expected Count	54.0	20.0	1.0	75.0
		Std. Residual	.0	.0	.0	
	FD	Count	54	20	1	75
		Expected Count	54.0	20.0	1.0	75.0
		Std. Residual	.0	.0	.0	

Chi-Square Tests for overall strategy usage			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	.000 ^a	2	1.000
Likelihood Ratio	.000	2	1.000
Linear-by-Linear Association	.000	1	1.000
N of Valid Cases	150		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 1.00.

As seen in Table 4.10, a Chi-square test of independence was calculated comparing the level of overall usage of metacognitive strategies between FI and FD group of students. No significant difference was found $\chi^2(2, N=150) = 0.00, p=1.00$. There are 54 participants at high level of usage, 20 at moderate level and only one at low level for both groups. As a result, this finding has confirmed the null hypothesis that there is no relationship between overall usage of participants' metacognitive strategies and their FI/FD cognitive styles.

Additionally, Chi-square test for independence was applied to explore the relationship between the three sub-strategies: Global Strategies, Support Strategies, and Problem Solving Strategies with cognitive style of FI and FD. The following table shows the result.

Table 4.11: Chi-square test for the Global reading strategies of FI and FD participants

Contingency table						
		GLOB usage				
		high	moderate	low	Total	
group	FI	Count	38	36	1	75
		Expected Count	49.0	25.5	.5	75.0
		Std. Residual	-1.6	2.1	.7	
	FD	Count	60	15	0	75
		Expected Count	49.0	25.5	.5	75.0
		Std. Residual	1.6	-2.1	-.7	

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	14.586 ^a	2	.001
Likelihood Ratio	15.277	2	.000
Linear-by-Linear Association	14.486	1	.000
N of Valid Cases	150		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is .50.

As table 4.11 indicates, in terms of the use of Global strategies, there are 38 participants at high level of usage, 36 at moderate level and 1 at low level in FI group, whereas in FD group, there are 60 participants at high level of usage, 15 at moderate level and none at low level. The Chi-square test for independence showed that there is a significant relationship between the participants' usage of Global strategies and their FI/FD

cognitive styles $\chi^2(2, N=150) = 14.586, p=.001$). More specifically, the cognitive style of FD seems to have some impact on the usage of Global reading Strategies with positive relationship. The results also correspond with the findings for the second research question in which FD participants surpass FI participants in employing Global reading strategies.

However, the Chi-square test of independence results for Support Strategies $\chi^2(2, N=150) = 5.455, p=.065$ and Problem Solving Strategies $\chi^2(2, N=150) = 2.516, p=.113$ present no significant relationship with FI/FD cognitive styles since both P values are higher than 0.05. The detailed figures are shown in Table 4.12. Therefore, the null hypothesis predicting that there is no relationship between Support strategies and Problem Solving Strategies and the FI/FD cognitive styles is confirmed, which means the usage of Support Strategies and Problem-solving strategies will not be influenced by FI/FD cognitive styles.

Table 4.12: Chi-square test for the Support strategies and Problem Solving Strategies of FI and FD participants

Chi-Square Tests for SUP Strategies			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.455 ^a	2	.065
Likelihood Ratio	5.598	2	.061
Linear-by-Linear Association	5.372	1	.020
N of Valid Cases	150		

a. 2 cells (33.3%) have expected count less than 5. The minimum expected count is 2.50.

Chi-Square Tests for PROB strategies			
	Value	df	Asymp. Sig. (2-sided)

Pearson Chi-Square	2.516 ^a	1	.113
Likelihood Ratio	2.551	1	.110
Linear-by-Linear Association	2.499	1	.114
N of Valid Cases ^b	150		
a. 0 cells (.0%) have expected count less than 5. The minimum expected count is 11.50.			

In conclusion, cognitive style of field dependency seems to only have influences on the use of Global Reading Strategies but no significant relationship was found between FI/FD cognitive styles with the other two sub-strategies.

4.5 Chapter Summary

This chapter provided findings from the present research which is a combination of both quantitative and qualitative results. The quantitative section examined, firstly, the overall usage of metacognitive reading strategies of undergraduate students. Results show that the overall mean score of metacognitive strategies and the three sub-strategies were at high level of usage (Mean > 3.5). This indicates that the participants are aware of their metacognitive strategies in reading and are able to apply their metacognition to improve reading comprehension. In terms of the specific sub-strategies, Problem Solving Strategies ranked the first in usage, followed by Global Reading Strategies and Support Strategies.

The second research question investigated the differences between FI and FD participants in using metacognitive strategies. Results show that FI and FD participants

differ in the selection of Global Strategies and Support strategies but no difference was found in using Problem-solving Strategies. The explanation and discussion were also presented.

The third research question explored the relationship between metacognitive reading strategies and students' FI/FD cognitive styles. Results demonstrate that in general, the participants' metacognitive strategies were not influenced by their cognitive style of field dependency, however, cognitive style of field dependency was found to have certain relationship with Global Reading Strategies where FD participants have outdone FI participants in using this strategy.

The qualitative part of the study provided supports to the quantitative findings in two aspects. Firstly, the interview results revealed that participants apply various metacognitive strategies in academic reading. They reported that they use almost all the metacognitive strategies based on the recursive model of Chomat et al (1991). Furthermore, a few newly discovered strategies such as scanning, mind mapping, translating, paraphrasing and refreshing were also found to be used in the reading process, and this indicates that the instruments used in this study to explore metacognitive reading strategies are not complete and more studies and researches could add knowledge on the identification of these strategies. Secondly, there are some differences in the reading process by FI students and FD participants which involve selecting information, using paraphrase as a specific strategy and evaluating. The findings have supported the quantitative study and made it more comprehensive.

On the whole, the findings from quantitative research and qualitative research have comprehensively answered the research questions. The next chapter will provide the conclusion of the study and its implications to students, teachers and others who are related to it. Also, the recommendations for future research will be presented.

CHAPTER 5: DISCUSSION AND CONCLUSION

5.1 Overview

The main purposes of this study are to identify the metacognitive reading strategies of Malaysian undergraduate students and to explore the relationship between students' FI/FD cognitive styles and their metacognitive strategies in reading English texts. In this chapter, it first discusses the main findings of the study, followed by the implications for students and teachers. Lastly, the recommendations and suggestions for further research are presented.

5.2 Discussion of the Main Findings

Reading is essential for learners' academic achievement (Koda & Zehler, 2008), and metacognitive reading strategies have been suggested by many researchers (Baker & Brown, 1984; O'Malley & Chamot, 1990) to play a very important role in improving reading comprehension. Therefore, the metacognitive reading strategies used by students were identified in this study and the relationship between FI/FD cognitive styles and metacognitive strategies was examined. Based on the analysis of the data, the discussions of the main findings are provided as follows.

5.2.1 The Metacognitive Reading Strategies of Malaysian First Year Undergraduates

To answer the first research question, the mean score revealed that the overall usage of

metacognitive reading strategies by the students is at a high level ($M=3.718$), which is higher than 3.5. According to the established strategy usage criteria introduced by Oxford and Burry-stock (1995), mean score of learning strategies higher than 3.5 refers to the strategy usage stands in the high level. Of the 30 strategies which are listed in SORS, 25 strategies (83%) which include 8 Problem-Solving strategies, 12 Global Strategies and 5 Support Strategies stand in the high-usage level ($M>3.5$). No strategies fell into the low usage level.

The interviews with 6 participants also revealed that out of the 24 sub-strategies identified by Chamot et al. (1999), 11 strategies are used by all of them, and they are: goal setting, attention directing, previous knowledge activating, selectively attending, note taking, cooperating, making inference, asking question to clarify, using resources, summarizing and evaluating oneself. Furthermore, there were four newly discovered reading strategies in the present study which were not identified in Chamot's work, they are: skimming/scanning, mind mapping, translating, paraphrasing and pausing while reading to refresh one's mind.

The results indicated that the participants are highly aware of their metacognitive strategies in reading comprehension. They are able to make use of these strategies to plan before reading, to monitor while reading and to evaluate after reading. They are conscious of their cognitive process during reading and are able to apply various metacognitive strategies to achieve reading comprehension. These findings were also supported by many other studies (Block 1992; Sheorey and Mokhtari, 2001; Zhang,

2001; Zhang and Annul, 2008) which indicated that ESL readers are generally aware of their metacognition and are able to use multitude of reading strategies from moderate to high frequency level to achieve their goals.

In addition, for the three sub-strategies, the participants use Problem-Solving Strategies most frequent, followed by Global Strategies and Support strategies. They reported that all 8 items of Problem-Solving strategies and 12 out of 13 items of Global Strategies and 5 out of 9 Support strategies are frequently used while reading. The results showed that Problem-Solving Strategies ranked the highest usage among the three sub-strategies, which was in consistent with a previous study done by Mokhtari and Reichard (2002). Sheorey and Mokhtari (2001) also claim that problem-solving strategies are the most popular among non-native readers since these strategies are critical for comprehension and directly work with reading difficulties. Particularly, the strategies like “rereading for better understanding”, “adjusting one’s reading rate” and “paying close attention to reading” were reported by most of the participants as the most preferred problem solving strategies when comprehension problems occur during their reading process.

Concerning the second frequently used strategy- Global reading strategies, Sheorey and Mokhtari (2001) point out that the strategies such as “previewing the text” and “planning how to read it” are usually considered as pre-reading activities that students use and encouraged by teachers since these strategies help students to activate their “prior knowledge” about the content of texts. The participants in this study might use more planning strategies because of their teachers’ encouragement.

Nevertheless, the results revealed that the Support reading strategies are the least frequently used among the three sub-strategies. The reason for the limited use of these strategies might be because of the participants' unwillingness to use these time-consuming strategies. However, previous research such as by Sheorey and Mokhtari (2001) reported that generally ESL learners employ more Support Strategies than native speakers due to the fact that relatively low language proficiency learners tend to rely on dictionaries or other support mechanisms to help them read.

5.2.2 The Differences between FI and FD Students Regarding Their Metacognitive Reading Strategies

To answer the second research question, the results revealed that FI participants generally use more metacognitive reading strategies than FD participants, but there is no significant difference in the overall use of metacognitive reading strategies between them. This finding was supported by some studies such as by Davis (1987) and Zahra Naimie (2010) which claim that FI students use more metacognitive strategies than their FD counterparts. The reason is explained by other researches such as Liu and Reed (1994) which demonstrate that FI learners are better at planning their learning process compared to FD learners. In addition, Abraham (1985) concludes in his study that FI students also monitor their own learning process more often and closely than FD students. Finally, FI students seem to display more knowledge and understanding about their own learning process than that of FD students (Tinajero and Parramo, 1998). Therefore, it can be argued that FI students might use more metacognitive strategies

than FD students.

Although the overall metacognitive reading strategies of FI and FD participants showed no significant difference, the application of two sub-strategies which are Support Strategies and Global Strategies showed the statistically significant differences between them. This indicated that FI and FD students choose different Global Strategies and Support Strategies. However, all these participants reported the same preference in selecting Problem Solving Strategies.

The possible reasons why FI and FD participants employ different Global and Support strategies might be explained by their own characteristics. For the use of Global Strategies, FD participants like to think about their own prior knowledge; they prefer to learn materials relevant to their own experience and like to link their prior knowledge with new information. Besides, they scored higher on “determining what to read and what to ignore” because they tend to think globally when reading. They usually read through the text for general information instead of focusing on details. Therefore, it is easy for them to get the main idea and ignore the information which is irrelevant. However, FI participants like to pay attention to each detail in a text, which means they are not very good at differentiating important information and less important information (Witkin et al., 1979). Nonetheless, they seem to be better in critically analyzing and evaluating the reading text, which is in line with their characteristic in learning that is they are better at thinking analytically and evaluating information critically (Witkin et.al, 1971).

For Support Strategies, FI participants showed more preference on almost all strategies, and they especially outperformed FD participants in “paraphrasing textual information” and “self-questioning”. The possible reason for using “paraphrasing strategy” could be that FI participants tend to create their own structure in understanding information and they are good at reorganizing and restructuring information. In other words, they paraphrase original sentences into the sentences they could understand. FD participants, on the other hand, like to accept the information in its original form (Jonassen and Grabowski, 1993). Abraham (1985) states that FI subjects monitor their reading comprehension more often in reading process compared to their FD counterparts, and this might be the reason why they usually ask themselves questions regarding their own comprehension of the reading text to monitor their understanding.

The interviews with 6 participants also showed that FI and FD participants have different preference in perceiving information, using mind map and working individually or in group. FI participants mentioned that they are good at identifying detailed components of reading information and then put them together to restructure for better understanding. As proven by empirical researches, FI students may make great attempt to perceive every details of reading material because it is relatively easier for them to process information from each component to form their understanding (Pithers, 2002). For reading, they are considered to be bottom-up readers, which mean they process information from the most specific information such as meanings of phrase and sentences towards the most general information. Also, they stress on the meaning of small elements or specific information rather than the meaning of the whole text (Gough,

1972). In contrast, it seems that FD participants like to take the information more briefly. They look at the information more globally than FI participants, and they ignore some details and approach a task more holistically (Witkin et al., 1977).

Also, they have different preference in using mind maps. Mind mapping is a creative technique which helps students to remember ideas or comprehend written information. It requires learners to be creative in order to generate new ideas and make connections between information (Moi and Lian, 2007). Previous works have proven that FI students perform well in creative thinking. They are more active in learning and more flexible in thinking and solving problems. This might be the reason why they show their preference in using a mind map during reading (Witkin et al., 1971).

Finally, the reason why FI participants prefer individual work might be because they are recognized as not so socially-oriented and not so skillful in interpersonal relationship (Marshall, 2002). They tend to be more independent, competitive and self-confident. They are skillful in analyzing and doing task-oriented project but are less skillful in cooperating with others (Witkin et al. 1977). On the contrary, FD students are good at interpersonal relationship, and they tend to solve problems in a more social or collaborative way (Jonassen & Grabowski, 1993). In addition, Witkin (1991) suggests that FD learners are prone to interact with their surrounding; they have great interest in communicating with others and are good at activities that need discussion and communication. Therefore, they are more open to different ideas and more likely to be influenced by people's opinions or teachers' instructions.

5.2.3 The Relationship between Students' FI/FD Cognitive Styles and Their Metacognitive Reading Strategies

The result showed the overall usage of metacognitive strategies of the participants has no relationship with their cognitive styles of FI and FD. However, the Chi-Square Test for Independence showed that there is a significant relationship between the participants' usage of Global strategies and their FI/FD cognitive styles, more specifically, the cognitive style of FD seems to have some impact on the usage of Global reading Strategies with positive relationship. The results indicated that FI/FD cognitive styles of students will not significantly influence their general selection of reading strategies, but it indeed influences the use of some Global Reading Strategies in that the FD students prefer more planning strategies than FI students. These findings are also in correspond with the findings for the second research question in which FD participants surpass FI participants in employing Global reading strategies.

It's worth noticing that FI and FD students selected different Global and Support metacognitive strategies as the Independent Sample T-test revealed there is a significant difference between them. However, when examining the relationship between Global strategies, Support strategies and cognitive style of FI/FD using Chi-square test for independence, the result showed a significant relationship only between Global reading strategies and cognitive styles of FI/FD but not between Support reading strategies and cognitive style of FI/FD. To some extent, there is a relationship between cognitive style of FI/FD with learners' use of Support reading strategies, but it is not statistically

significant as compared to the relationship between Global Strategies and FI/FD cognitive styles.

5.3 Implications of the Study

As the data showed, cognitive styles and metacognitive strategies are very important variables related to reading comprehension. It is believed that teachers and learners should be more aware of the effects which cognitive style has on language teaching and learning. Teachers and students should raise their understanding of the advantages and disadvantages of having a different cognitive style. Additionally, teachers are encouraged to improve the performance of students with various metacognitive reading strategies through appropriate training programs.

5.3.1 Raising Awareness of FI/FD Cognitive Styles in Learning and Teaching

As the present study indicated, FI/FD participants have certain differences in using reading strategies due to their different ways of processing and decoding information, and this directly influences the learning strategies they choose and indirectly affects their learning performance. Therefore, students' individual differences must be taken into consideration in Second language learning and teaching.

Previous researches suggested that it would be helpful that students realize the existence of cognitive style and know their own field dependency and then make good use of it

(Kahtz and Kling, 1999; Pithers, 2002). Students should be aware of their own cognitive style, learn about the features and know the advantages and disadvantages of each style so that they can take advantage of its favorable traits. Then, they may know what reading activities their cognitive style is suitable for and what problems are caused by it. In this way, students can use the advantages of their cognitive style to make better learning progress and select appropriate reading strategies to overcome the difficulties.

Cohen (2000) suggests that teachers should be more aware of learners' difference such as the difference in their cognitive style. The findings of this study provide teachers with pedagogical insights in monitoring and understanding how cognitive learning style affects the students' learning. By knowing the FI/FD cognitive styles of students, teachers could adjust the teaching method and activities which they have in class to be more suitable for each student. As shown in the present study, FI participants were found to be less skillful in getting main ideas from a reading text compared to FD participants. Then, teachers who realized this feature could teach FI students how to make a summary and use contextual clues to generate the main idea. They could organize more practice on writing main ideas or picking the key information for FI students to help them develop their summarizing ability. Moreover, FI students are found to be more personal in the learning process, therefore, teachers should advise them to actively participate in group discussions and cooperate more with classmates so that they can learn from others, look at things from different perspectives and be more open-minded to different views.

With regard to FD students, teachers can help them to enhance their analyzing competency. They are found to be good at finding the general idea, but less efficient in dealing with detailed information or task which involves a lot of analysis. Therefore, teachers should design more activities that involve skimming and scanning to strengthen these students' analytical ability. Teachers should also encourage their FD students to develop their problem-solving ability by doing task individually. In this way, students will have more self-confidence and strength on decision making.

It is worth noting that not only students have different FI/FD cognitive styles, but the teachers also have different field dependence degree where their field dependence/independence will have influenced on their performance in language teaching classrooms. Relevant literature shows that field dependent teachers prefer to have classroom discussion, and they have the tendency of making students the center of the English class and let students assume the responsibility of arranging class (Saracho and Spodek, 1981; Brodzinski, 1982; Saracho, 1991). Conversely, field independent teachers tend to deliver knowledge by preaching, and they tend to position themselves as the center of class instead of letting students take control of classroom learning (Saracho and Spodek, 1981; Brodzinski, 1982; Saracho, 1991). In addition, according to Adegoke (2011), students who have the same FI/FD cognitive styles with their teachers receive higher marks and perform better in class. This illustrates that teachers' different cognitive styles might influence or even determine students' language learning. This might be the reason why teachers should be more flexible about their field dependency and try to modify it to the degree of freely changing their cognitive styles according to

different teaching requirements.

5.3.2 Raising Awareness of Metacognition and Metacognitive Strategy Training

Reading is the most needed skill in the pursuit of higher academic studies (Flowerdew and Peacock, 2001). Metacognitive strategies have proven to be essential in improving reading comprehension. Therefore, this study aims to raise the L2 readers' awareness in using their metacognition and metacognitive strategies while reading. From the analysis of the present study, it is found that some learners are still not familiar with the strategies. Therefore, a reading strategy training program is strongly recommended to ESL learners in Malaysia. Teachers and class coordinators should realize the importance of metacognition and offer more opportunities to students to help them build their metacognition in learning. Ellis and Sinclair (1989) mentioned that teachers need to explain how to use learning strategies more effectively such as when the strategies need to be employed and why the learning strategies should be used in a certain learning situation. Furthermore, training of metacognitive strategies will promote learner autonomy and learner self-direction by allowing them to choose the most appropriate strategies spontaneously. Carrell (1998) also states that the training of metacognitive reading strategies would be beneficial in assisting students to evaluate their own strengths and weaknesses, and helps them become independent and self-regulated L2 readers. Through strategy training, students are expected to know the different types of reading strategies, to use them appropriately in various contexts, and to evaluate how these strategies work in order to improve their reading comprehension.

The metacognitive strategy training involves four stages. Firstly, teachers will explain the concept of metacognition, teach students the metacognitive strategies in the classroom and explain how and when to use them, and why they have to use these strategies. Secondly, the teachers will ask the students to do several practices regarding metacognitive strategies to help them gradually build the awareness of this concept. Thirdly, the teachers will guide the students to make plans before reading, monitor while reading and evaluate after reading in order to help them become self-regulated learners. Fourthly, the teachers will spend some time to arrange sessions where students can share their reading experience, methods or skills so that they can learn from one another.

According to Wenden (2002), one of the leading educational goals of the research on learner strategies is an autonomous language learner. The abilities to choose and use appropriate learning strategies according to individual's cognitive style are techniques which learners adapt to become independent. It is intended that this research will guide learners to know more about their own cognitive style, have more knowledge about how FI/FD cognitive styles influence their learning process and have more awareness of their metacognition and use of metacognitive strategies in improving learning. Therefore, learners become more efficient in using various learning strategies and also more capable of self-directing. Teachers will benefit from the research findings by obtaining more understanding of their students as well. They are also provided with evidence to design their teaching activities and choose the most suitable teaching methods. Teachers may play the role of instructors and facilitators to encourage students to read and learn

on their own in the new language learning classroom which is essential in a learner-centered language learning environment.

5.4 Recommendations for the Future Studies

Based on the results of this study, four recommendations for future research are put forward. Firstly, the present study only involved 6 participants in qualitative study since the condition for participants to join the interview was not suitable. The small number of interviewees has made the qualitative data less reliable. Therefore, future research that employs qualitative research design is required to use a bigger sample size of respondents to present a more reliable data. Also, it would also enable researchers to use more advanced statistical tests for a qualitative study.

Secondly, this present study adapted a single instrument to examine students' reading strategies, which might be less accurate and incomplete since there might be other reading strategies which are not covered by this instrument. Thus, it is recommended to use multi-instruments to identify the strategies such as the think-aloud protocol. This protocol will ask students to speak out the strategies they think they use when reading a real text, and this would help researchers to get a more comprehensive and complete picture of the students' metacognitive reading strategies.

Thirdly, the present study assumed that most of the participants have Band 3 to Band 4 English level based on their MUET result and they are all first year bachelors following

the similar University entrance requirements. Therefore, this present study did not investigate the participants' Language Proficiency level. However, previous researches showed that different language proficiency level results in different learning strategies and outcomes (Magogwe, 2013). Thus, it is suggested for future studies to take language proficiency into consideration and investigate or compare students' metacognitive reading strategies in the same language proficiency level or between different proficiency levels.

Fourthly, this study found out that students' FI/FD cognitive styles affect their use of metacognitive reading strategies. Hence, more studies in this direction are recommended to be conducted. However, this study did not involve any teaching or training for students, and it is believed that strategy training program will benefit students significantly. Therefore, studies on metacognitive strategy training with the consideration of learners' cognitive style are needed and necessary in developing a successful reader and self-regulated learner.

5.5 Conclusion

In conclusion, this study aimed to investigate the metacognitive strategies used by ESL undergraduate students while reading English texts. In addition to that, this study examined the relationship between student's different FI/FD cognitive styles and the metacognitive strategies they use in reading.

The findings of the research showed that: firstly, students' metacognitive reading strategies stand in a high-frequency level in which they prefer Problem Solving strategies the most and Support Strategies the least; and secondly, FI students in general used more metacognitive strategies than their FD counterparts and there existed a statistically significant difference between these two groups of students in terms of the use of Global Strategies and Support Strategies. The findings from the interviews confirmed that students in general employ various metacognitive strategies; FI students seem to use more reading strategies than FD students and they reported different preference in selecting metacognitive strategies in reading. Therefore, students' cognitive styles of FI/FD do have certain influences on their selection of reading strategies.

Additionally, this study would be useful in Malaysia as there are very few previous works that look into the relationship between ESL learners' cognitive style and their selection of metacognitive strategies in reading. Thus, it is hoped that this study could help learners and teachers to better understand cognitive styles and how they could affect learning, and also to raise their awareness of the importance of metacognition and use of metacognitive strategies.

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APPENDIX A



**UNIVERSITY
OF MALAYA**

UM.T/606/01(b)

25 November 2014

Mera Sheera Kaur
UNIT BAHASA
FAKULTI BAHASA DAN LINGUISTIK
UNIVERSITI MALAYA
50603 KUALA LUMPUR

TO WHOM IT MAY CONCERN

Dear Sir/ Madam,

RESEARCH FOR MASTER'S STUDENT

This is to confirm that WANG LU, Passport No. G 42816389 and Matric No. TGB 120037 is a registered student for the programme of Master of English as a Second Language at the Faculty of Languages and Linguistics, University of Malaya. She has been registered since semester I, 2012/2013 academic session.

She is required to write a dissertation to fulfill the requirements of the degree. We would appreciate it very much if she is allowed to carry out a questionnaire survey, conduct interviews and collect data at your place as part of her research work.

We thank you for your cooperation.

Yours faithfully

ASSOC. PROF. DR. STEFANIE PILLAI
Deputy Dean (Postgraduate Studies)
Faculty of Languages and Linguistics

ESA/nhy.

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APPENDIX B



Subjects Information Sheet

Research Title

Metacognitive Reading Strategies of ESL Learners with Field Dependent/Field Independent Cognitive Style

Purpose of the Study

This study examines the students' use of metacognitive strategies in reading and their correlation with cognitive style of Field dependence/Field Independence. The aim is to help ESL learners to improve their English reading comprehension by knowing their metacognitive reading strategies and understanding their cognitive styles.

Participation and Confidentiality

- (1) Your participation in this study is entirely voluntary.
- (2) You may refuse to take part in the study or you may withdraw yourself from participation in the study anytime without penalty.
- (3) Your answer and information will be kept confidential by the investigator(s) and will not be made public unless disclosure is required by law.
- (4) By signing this consent form, you will authorize the review of records, analysis and use of the data arising from this study.

Items in this Survey

- (1) Subjects Information Sheet
- (2) Consent Form
- (3) Cognitive Style Figure Test (CSFT)
- (4) Survey of Reading Strategies (SORS)

There is also a following interview section will be conducted after the score of CSFT and SORS are calculated. If you are interested to join the interview and know the correct answer of your cognitive style test and the reading strategies you employed, you can leave you email here: _____

If you have any questions about the study, please contact me at: lunawang1130@gmail.com

Thank you for your participation in advance.

WANG LU

The Department of English Language, Faculty of Languages and Linguistics

APPENDIX C



Consent Form

To become a subject in the research, you are advised to sign this Consent Form.

I will herewith confirm that I have met the requirement of age and am capable of acting on behalf of myself as follows:

1. I understand the nature and scope of the research being undertaken.
2. All my questions relating to this research and my participation therein have been answered to my satisfaction.
3. I voluntarily agree to take part in this research, to follow the study procedures and to provide all necessary information to the investigator as requested.
4. I may at any time choose to withdraw from this research without giving reasons.
5. I have received a copy of the Subjects Information Sheet and Consent Form.
6. I have read and understood all the terms and conditions of my participation in the research.

**I have read the statements above, understand the same, and
voluntarily sign this form.**

Dated: _____ day _____ month _____ year

Signature:

Name and Researcher's Signature:

Subjects' Profile

Name: _____

Age: _____

Gender: _____

Academic major: _____

Email address : _____

APPENDIX D

COGNITIVE STYLE FIGURE TEST (CSFT)

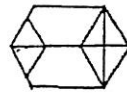
Cognitive Style Figure Test

Instruction:

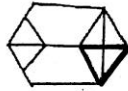
This is a simple test which aims to test your ability to find a simple figure when it is hidden within a complex pattern. Here is, a simple X on the left below, and a complex pattern in the middle, please find the hidden figure X in the complex pattern and trace it in pencil directly over the lines of the complex pattern. (See the result on the right)



X



Complex Pattern



Answer

Note that the top right-hand triangle is the correct one; the top left-hand triangle is similar but face in the opposite direction and is therefore not correct. The same, the down left-hand small triangle is similar to the simple figure and with same direction but the size is smaller than the simple figure and is therefore not correct.

In the following pages, each one you will see is a complex pattern and under it will be a letter corresponding to the simple figure which is hidden in it. You are requested to find the simple figures by tracing it in pencil over the lines of the complex pattern as fast as you can.

Notice:

- (1) Look back at the simple figure as often as your needed.
- (2) Trace only one simple figure in each problems. You may see more than one, but just trace one of them.
- (3) The simple figure is always present in the complex pattern in the same size, the same proportions and facing the same direction as it appears on the back cover of this test.
- (4) Erase all the mistakes.

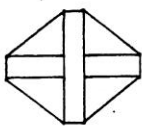
First Section



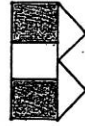
(1) Find the simple figure 7



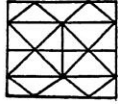
(2) Find the simple figure 1



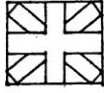
(3) Find the simple figure 4



(4) Find the simple figure 5

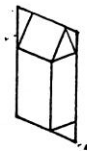


(5) Find the simple figure 6



(6) Find the simple figure 9

3



(7) Find the simple figure 2



(8) Find the simple figure 3



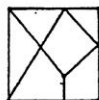
(9) Find the simple figure 8

4

Second Section



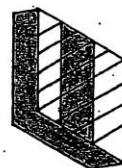
(1) Find the simple figure 6



(2) Find the simple figure 5



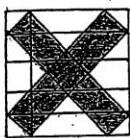
(3) Find the simple figure 9



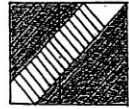
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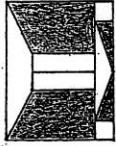
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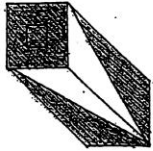
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(7) Find the simple figure 8

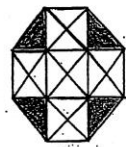


(8) Find the simple figure 4



(9) Find the simple figure 1

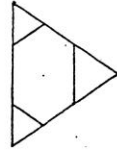
7



(10) Find the simple figure 7

8

Third Section



(1) Find the simple figure 6

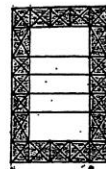


(2) Find the simple figure 1

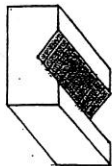


(3) Find the simple figure 9

9



(4) Find the simple figure 4



(5) Find the simple figure 8

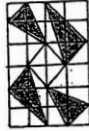


(6) Find the simple figure 2

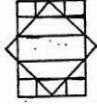
10



(7) Find the simple figure 7

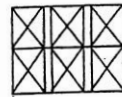


(8) Find the simple figure 3



(9) Find the simple figure 5

11



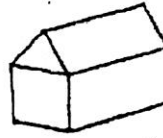
(10) Find the simple figure 7

12

Simple Figure (9)



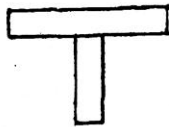
Simple Figure 1



Simple Figure 2



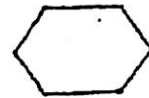
Simple Figure 3



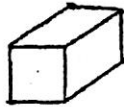
Simple Figure 4



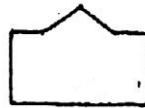
Simple Figure 5



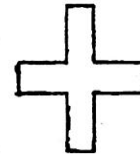
Simple Figure 6



Simple Figure 7



Simple Figure 8



Simple Figure 9

APPENDIX E

SURVEY OF READING STRATEGIES (SORS)

The purpose of this survey is to collect information about the various techniques you use when you read **academic materials in English** (e.g., reading textbooks for homework or examinations, reading journal articles, etc.).

All the items below refer to your reading of **college-related academic materials** (such as textbooks, *not* newspapers or magazines). Each statement is followed by five numbers, 1, 2, 3, 4, and 5, and each number means the following:

- 1 means that "I never or almost never do this."
- 2 means that "I do this only occasionally."
- 3 means that "I sometimes do this" (about 50 % of the time)
- 4 means that "I usually do this."
- 5 means that "I always or almost always do this."

After reading each statement, *circle the number* (1, 2, 3, 4, or 5) which applies to you.

Note that there are **no right or wrong responses** to any of the items on this survey.

Category	Statement	Never	Always
GLOB	1. I have a purpose in mind when I read.	1	2 3 4 5
SUP	2. I take notes while reading to help me understand what I read.	1	2 3 4 5
GLOB	3. I think about what I know to help me understand what I read.	1	2 3 4 5

GLOB	4. I take an overall view of the text to see what it is about before reading it.	1	2 3 4 5
SUP	5. When text becomes difficult, I read aloud to help me understand what I read.	1	2 3 4 5
GLOB	6. I think about whether the content of the text fits my reading purpose.	1	2 3 4 5
PROB	7. I read slowly and carefully to make sure I understand what I am reading.	1	2 3 4 5
GLOB	8. I review the text first by noting its characteristics like length and organization.	1	2 3 4 5
PROB	9. I try to get back on track when I lose concentration.	1	2 3 4 5
SUP	10. I underline or circle information in the text to help me remember it.	1	2 3 4 5
PROB	11. I adjust my reading speed according to what I am reading.	1	2 3 4 5
GLOB	12. When reading, I decide what to read closely and what to ignore.	1	2 3 4 5
SUP	13. I use reference materials (e.g., a dictionary) to help me understand what I read.	1	2 3 4 5
PROB	14. When text becomes difficult, I pay closer attention to what I am reading.	1	2 3 4 5
GLOB	15. I use tables, figures, and pictures in text to increase my understanding.	1	2 3 4 5

- PROB 16. I stop from time to time and think about what I am reading. 1 2 3 4 5
- GLOB 17. I use context clues to help me better understand what I am reading. 1 2 3 4 5
- SUP 18. I paraphrase (restate ideas in my own words) to better understand what I read. 1 2 3 4 5
- PROB 19. I try to picture or visualize information to help remember what I read. 1 2 3 4 5
- GLOB 20. I use typographical features like boldface and italics to identify key information. 1 2 3 4 5
- GLOB 21. I critically analyze and evaluate the information presented in the text. 1 2 3 4 5
- SUP 22. I go back and forth in the text to find relationships among ideas in it. 1 2 3 4 5
- GLOB 23. I check my understanding when I come across new information. 1 2 3 4 5
- GLOB 24. I try to guess what the content of the text is about when I read. 1 2 3 4 5
- PROB 25. When text becomes difficult, I re-read it to increase my understanding. 1 2 3 4 5
- SUP 26. I ask myself questions I like to have answered in the text. 1 2 3 4 5

- GLOB 27. I check to see if my guesses about the text are right or wrong. 1 2 3 4 5
- PROB 28. When I read, I guess the meaning of unknown words or phrases. 1 2 3 4 5
- SUP 29. When reading, I translate from English into my native language. 1 2 3 4 5
- SUP 30. When reading, I think about information in both English and my mother tongue. 1 2 3 4 5

Mokhtari, K., & Sheorey, R. (2002). Measuring ESL students' awareness of reading strategies. *Journal of Developmental Education, 25*(3), 2-8. Reprinted with Permission.

APPENDIX F

Interview Guideline

Thanks for join this interview, this interview is conducted to provide an in-depth understanding of how students use their metacognitive strategies in reading English text and what are the differences between FI and FD this two groups of students. The information you provide here will be highly confidential and you are encouraged to answer the questions honestly and relaxed.

Participant information: could you tell me your name? How old are you? What is you academic major? What is your mother tongue? How many year you have been studying English? What is the language you use most in your daily life?

✓ **Warming up: the reading text is academic reading.**

- (1) Do you read anything in English? (Newspaper, academic paper, books)
- (2) How often you read the materials in English?
- (4) What is you purpose of reading those materials?
- (5) Do you read them differently, use different approaches regarding different type of text? What you want to get from them?
- (6) Do you use strategies when you are reading, can you list some of them?(ask some more)

✓ **Regarding Global Strategies (category)**

- Do you make plans before reading, what plans you will make? (such as how long you gonna take, are you familiar with the content? read it closely or skip some part, read some part first ?)
--

- Do you think about what you have already learned before when you are reading a new text? (GLOB2). (Such as you read some topic before, now the new reading text is also about the topic.)
--

- Do you preview the reading text before you read it?

- What are the things you will look at when you preview the reading text? (title, how many chapter,long or short, content....)
--

- Do you think it's important to look at the organization, the structure and length of the reading text before or while reading? If yes, why? (GLOB5)

- Are you good at searching for detailed information in reading text? Do you know why?
--

- Are you good at getting general ideas or doing summary for the reading text? During reading, which one you prefer?
--

- Do you choose what to read and what to ignore, when and why do you do this?
- Do you like to look at the tables, figures or pictures in reading text? Why or why not?(GLOB7, GLOB 9)why?
- Do you notice the typographical features if there is in the reading text? (like boldface or italics)
- Do you criticize or evaluate the reading text after you read it?
- What about the reading text you would like to evaluate or analyze? What's the reason ?
- Do you like to check with yourself whether you understand the reading text or not? GLOB11, GLOB10) how do you usually check with yourself?

✓ **Regarding Problem Solving Strategies**

- What are the difficulties and problems you might face during reading? List some of them. (ask them some more)
- When there are unknown words or phrases in text, what did you do? (PROB 8, GLOB12) (guess meaning, ignore directly, check dictionary, discuss with others)
- When reading text becomes difficult, what will you do? For example. Will you read it again? (PROB 7, PROB4,PROB 3, SUP2) (re-reading, slow down the reading speed, pay more attention)
- If you lost your concentration since the reading text becomes difficult, what would you do? (PROB 2) (relaxing a little bit, looking at the previous content, getting back to focus.)

✓ **Regarding supporting strategies**

- Do you like to check dictionary? When you do this and why?
- Do you take notes while reading? What type of notes you are taking. (highlighting, circling, underling, mind mapping, write key point on paper)
- Do you highlight or circle information during reading?
- Do you like to paraphrase the reading information to your own words for better understanding ?
- Do you translate the textual information to your mother tongue to increase understanding? (SUP5,SUP8)

APPENDIX G

Interview Transcription

No.1 pilot study

The interviewee Lee Sock Yin, who is a first year undergraduate students now pursuing her degree in Pharmacy as her academic major. She is 19 years old and mandarin is her mother tongue and she usually speak mandarin in her daily life. She has started learning English since 4 years old so she has around 15 years of English exposure but she mentioned that her English is not so good since she usually speaks mandarin at home and she is not very often to read academic materials in English expect the references related to her study.

	Hello, I am the interviewer today. My name is luna wang. Now I have one of my participants here, and I am going to interview she.
R	Could you tell me your name?
S	My name is Lee Sock Yin.
R	How old are you?
S	I am 19 years old.
R	What is your academic major.
S	I am now, currently studying Pharmacy course.
R	Are you first year students?
S	Yeah, I am first year students.
R	What is you mother tongue?
S	My mother tongue is en, Chinese, mandarin.
R	So, you usually speak mandarin at home or you speak English?
S	I usually speak mandarin.
R	Okay, now this interview is to provide an in-depth understanding of how the students use metacognitvie strategies in their academic reading. I will ask you three groups of questions regarding the three categories of metacognitive strategies which is global strategies, support strategies and problem solving strategies. Let's have some warming up first.
R	Do you read anything in English?
S	Yeah, sometimes.
R	What are those reading material you read?
S	Mostly newspapers.
R	Okay, newspapers. How about English books related to your major.
S	Yeah, references book.
R	How often you read it?
S	For reference book, i read it every time i revise my study. But i usually read newspapers
R	So you like to read newspapers?
S	Sometimes, yeah. When i am in good mood.
R	Do you think any differences when you read newspaper and when you read reference books related to you study?
S	Yeah, because for newspapers we just read for our own information. But if you study, or read the reference book, I will have a more scientific term to remember.
R	Is that means you will read it more closely?
S	Yeah

R	Did you notice that you will use some strategies when you read scientific books?do you use any strategies?
S	Yeah. ,maybe i will take notes, and then maybe highlight it.
R	Okay, so there are the strategies you noticed. Alright. Now I m going to ask you first group of questions related to global reading strategies.
R	Before you read the scientific text, did you make any plan of the reading? Like how long you gonna take to read? Or what is the ideas you wanna get from the text? Do you have any plans or objective before reading?
S	Yeah, i will have the objectives, i will have to think what i will get from the end of this reading.
R	Do you think about the knowledge you have already learned when you are reading new information? Such as you read some topic before, and now the new information is also about that topic, do you link the existing knowledge to the new one?
S	Yeah, I think so, I will think whether is read or whether i know this before, do i familiar with the topic or not.
R	Do you preview the reading text?
S	En, based on my mood. If there is enough time for it i will preview the text. If time is not enough, i will not have the preview.
R	What are the things you will look at if you want to preview the reading text?
S	For my Pharmacy course right now, if i study about reference book, i will mostly look at the big title first, and will see through it and know what should i know.
R	Any other things you will look at?
S	I will also consider how long the text is.
R	Do you think its important to look at the structure, organization or length of the reading text? And why you think so?
S	For me, its really important, because of if you don't know it e, if i am not see through it before i read,then i will feel lost on my half way. when i read it. I don't know what am i reading.
R	Do you means you prefer to have a general idea first?
S	Yes.
R	When you are reading, you like to search for those detailed information or you like the summarize the general information?
S	For my course, yea, i will like to look at the detailed information. I m not very good at summarizing.
R	So what are the reason?
S	Because exams require us to look it carefully.
R	Okay, so if no exam, just normally reading, do you still like to look at the details?
S	I guess so, I'd like to know everything.
R	When you are reading, do you choose which part to read more and which part to ignore?
S	If there is not enough time then i will choose some part to ignore, but if there is enough time for me, i will read through all.
R	Any other reasons if you choose to ignore some part of reading?
S	Em. Yeah, some times if i read through it and it is really unrelated, then i will ignore it.
R	You will see some tables, figures and pictures when you are reading, do you read them?

S	Yes, i like to read those things. Because the pictures are really attract my attention, but then for the table maybe i need to know what it is about. But the tables is only like figures, maybe it not very attract me.
R	After reading, did you evaluate or criticize the text you read?
S	Yes, i will think by what i read and i will try to have my own idea on it.
R	Will you ask yourself questions whether i understand the text you were reading just now?
S	Yes,sometime when i read until half then i will also question, made myself's question and i answer my own. If i got some ideas.
R	Okay, the next part is about the problem solving strategies. Is to look at how you solve the problem during reading?
R	The first question is what are the problems and difficulties you may face during reading?
S	The first problem for me is the words, the words i never learned before. Because i usually doesn't really read a lot in my daily life. Especially in English book, so there are many words that i can not recognize them.
R	So what you gonna do with them, how you gonna deal with the unknown words?
S	Ha, the dictionary. I usually check on dictionary.
R	So which means you often check dictionary.
S	yeah.
R	Next, when the text becomes difficult, what will you do? For example, when you find the text is really difficult, will you read it again and again or will you discuss with others? What will you do.?
S	First of all, then i will check the dictionary first for the words and then if i still cannot understand it , i will read through again and again, and read it words by words if really cannot, until i memorize the sentence but i still cannot, i will go find my friends. .
R	Is that means you prefer to solve it by yourself first?
S	Yes.
R	If you lost your concentration during reading, what will you do?
S	I will try to read again. See whether i can continue my concentration, if i really cannot concentrate at all , then i will maybe listen to music or relax a while. And then go back to my reading.
R	The last part is about the support strategies, which means you use other resources to support your understanding.
S	As you said, you like to check the meaning from dictionary when new words come in. Expect this, what else will you do if new words occurs?
R	Sometimes, i will also guess the meaning of it from my understanding.
S	I like to take notes during reading also, such as highlighting, underlining the important words.. And sometime i will also copy out in a small piece of paper.
R	I also want to know do you paraphrase the sentence you are reading to another form which you could understand?
S	I usually don't do paraphrase because my English grammar is not so good, i cannot make it into another form or structure.
R	Do you translate the reading sentence to your own language?
S	Yes, i will translate to my mother tongue. I will try to change it to Chinese to understand.then i understand in Chinese then i will get the meaning.

R	Okay, that all. That's all the questions i want to ask you. Thank you very much. And finally, would you have something you want to share in your reading experience?
S	First of all, i would like to say i am not the one that really like to read, because i maybe scared of reading. But then because for academic purpose, so i will push myself to read. And then for the reading materials, i will read again and again so then i remember, sometimes, if i cannot i will talk it out, and i memories it using mouth or something. And if is there is friends or roommate or what, i will ask them to like question me, so that i answer them orally, and then another way for me to memories so.

Interview No.FI1

The interviewee Chew Soo Yun, who is now studying Applied Chemistry. She is twenty years old and now in her first year second semester. She have been learning English since primary school 7 years old, so her has 13 years of English exposure. She reported that her mother tongue is Chinese and she usually speaks Mandarin with her family and friends, speaking English is only for academic reason. During the interview section, she sounds really relax and answered the questions very wisely and she mentioned that she likes to think and analyze things happened around her. Based on her talking, her oral English is fluent and she is confident in speaking in English.

	Hello, my name is Wang lu. I am the researcher. Today, I am going to interview a student whose name is Chew Soo Yun. The interview will ask couple of questions related to the use of your metacognitive strategies while reading academic text. Let I will as you about you basic information.
R	Could you tell me your name?
S	My name is Chew Soo Yun.
R	And how old are you?
S	I am twenty years old.
R	And could you tell me your academic major?
S	Now i am studying at University of Malaya, and my study major is applied chemistry.
R	What is your mother tongue?
S	My mother tongue is Chinese.
R	So how many years you have studied English?
S	Start for primary school, i think. Its about 7 years old, so around 13 years
R	So what is the language you used most in your daily life?
S	Mandarin.
R	So now, this interview is going to ask you three part of questions, they are global strategies related, support strategies related and support strategies related. Let's start with a short warming up.
R	Do you read anything in English? What are they?
S	Usually is newspapers and magazines and some online articles.
R	Do you read some academic works? Academic journal, references books.
S	Not really.
R	Sure? what about the academic materials related to you study and your major.
S	Usually is about reference books ,because our library has a lot of reference books.
R	When you are reading reference books, do you have any purposes of reading?

S	I read reference, is more i need to more understand what i am studying is about. Because when the lecturer notes are too short and cannot really understand what's their explaining is about, i just want to know more and understand about my studies.
R	Do you find any differences when you are reading academic text or when you are reading newspapers or magazines?
S	Usually for reading about the reference book i will write down the notes and highlight it, but usually for newspaper i will just read through like this because all the things is about daily life, even you don't read the newspaper you can online know about what's happening today like that.
R	Do you mean that you read reference books different with reading other materials, you will be more carefully?
S	yes
R	So how often you read the academic text?
S	Once a week i think, or when i need it i will read. It depend on the studies.
R	Did you notice you are using some types of strategies when read? Do you remember/
S	I think yes, note taking, doing the exercises and reading loudly, yeah, its more easier for me to memories or understand.
R	Now we are going to have the questions related to global strategies.
R	The first question, do you plan before reading?
S	Yep, because usually we will have the learning outcome. So i will look through about the learning outcome and i focus more on that.
R	Is learning outcome a type of exercises after reading?
S	No, it tells you what is the thing you should learn and understand after you read this text.
R	Which means this is like a guild line of this reading.
S	Yes, it will tells you what you need to focus on. Then i will follow it.
R	Do you think about your knowledge you learned before when you are reading now text?
S	Yeah, i will think what i have known before. Like i have learned something before, and the new reading text added my knowledge.
R	Next question, do you usually preview the reading text? And what are the things you will look at if when want to preview the text?
S	First of all, i preview it to make the link about what i have studied before, i will take off what;s this questions need to answer, what's the answer and do a point form on the text parer and after that i will write on the assay form.
R	Will you pay attention to the content page, the title and the length of the reading text?
S	Content yes, because content can give you a general idea of what is this reading text going to say, and besides of the outcomes you are following, we can also get extra knowledge not only just follow about the outlines we learn about. For articles you have a lot f information you can get about , if just to get what we need, i think its a kind of waste.
R	Do you think its' important to look at the structure, organization and length of the reading text.
S	I think structure, 50%. It depends.
R	Could you explain?
S	First of all, if the reading text has structure, it means its more easy for us to understand. Because they are just straight forwards. Then we already understand what we are talking

	about. Its straight away take the information .
R	When you are reading, are you good at searching for details information.
S	Its depend also. Depend on how the question is asking. Some of the questions is very direct forward, you can straight away to find the answer but maybe some questions are implied, so that maybe for person not good at vocabulary ,they are hard to find the information which very detailed and implied in the articles.
R	So, in generally, are you good at searching for detailed information.
S	I think so, compare to some of my friends, i can find some implied information easier.
R	Next, are you good at doing summary?
S	Yeah, i can. I think doing a summary is a easier way for you to look back because you summaries all the main point, so maybe after two month, after one week you wan to look back at the article, you just straight away look at the summary without reading through the whole articles. Save time.
R	Next, when you are reading. Do you choose which part of information to focus and which part of information to ignore?
S	Yes, usually i ignore the first paragraph and last paragraph.
R	why
S	Because, usually for the main information, it will start from the second paragraph, and usually is one paragraph one main point and elaboration. And examples.
R	Do you look at the tables, figure and picture when you are reading?
S	Yes, usually they provide direct information, for table and features.
R	After reading, do you usually criticism of evaluate the reading text?
S	No, i usually don't do that, i don't have that habits.
R	Do you check with yourself whether you understand the reading text or not?
S	Yes, i will check. Usually its during reading by asking myself questions.
R	Okay, now is the second part related to the problem solving strategies.
R	Do you have any problems and difficulties during reading process?
S	My problem is more about the vocabulary. Because my mother tongue is mandarin, i use English in daily life is only about my studies. Or maybe mix around with Malay or Indian i only use English, but if with Chinese friends or classmates, usually i will use mandarin to communicate with them.
R	Then what did you do to deal with those unknown words?
S	Usually i will straight ignore them, so go through the second sentence, and from second sentence i will know about what they want to talk about. What they want to give the information about. Maybe i highlight first and think about it later.
R	Do you usually guess the meaning if you don't understand the words?
S	I will. If really don't understand, i will make it a guess.
R	Some of the student they will check on dictionary.
S	Yeah, because in the text i usually don't have dictionary, but if for practice, i will check the meaning if i really cannot understand it.
R	When reading text becomes difficult, what are you going to solve it?
S	I will read it again to see, and maybe i will ask friends to see what's are their understanding of this paragraph.
R	If you lost your concentration, what will you do to go back to read?

S	Usually, i will let myself relax for a little bit. Then continue reading, if cannot maybe go walk around.
R	Do you prefer to solve the reading problems independently by yourself or you would like to discuss with others to check others opinion?
S	I will prefer to discuss with others , because maybe what i get from the reading information and what my friends know from the articles is different, if they are reasonable, is it logic and they can convince me, i will take their information, as my extra information..
R	The last part is the support strategies.
R	What type of notes you like to take during reading?
S	Mind map.
R	Anything else
S	Or short noted in a piece of paper , the key points or something like that.
R	Do you like to paraphrase the sentence to your own words to better understanding?
S	No, i don't do that
R	How about translation? Do you translate to your mother tongue ?
S	Yes, i will do that. Quite often. Because i can link out it to my mother tongue, then i understand better.
R	Last one, do you have any reading experience you would like to share?
S	I actually don't like to read all words form the text, i more prefer some features, the reading materials is short and directly, more colorful, if only black and white i fell its very boring. I not really like the long paragraph, or long thesis.

Interview No, FI2

Interviewee is a Malay girl who is now studying dentistry in University of Malaya. She is 20 years old and this is her first year and second semester in UM. She started learning English since kindergarten around 5 years old, so until now, she has at least 15 years of English learning experience. Her mother tongue is Bahasa Malayue, and English is her second language. She mentioned that for her, the most frequently used language in her daily life is her mother tongue which means Malaya and she only use English for studying. She is a bit of shy and nervous so the researcher asked her to relax and to be herself. Based on the observation, her English proficiency is only is not very impressive but it's enough for daily communication.

R	This is Luna wang, today I am going to interview a respondent. This interview will ask some questions about the metacognitive reading strategies they use when read academic text.
R	Thanks for join this interview. Could you tell me your name?
S	My name is Nur Sariyah Binti Muhamad Rosli
R	Could you tell me how old are you?
S	I am twenty years old
R	What is you academic major?
S	Dentistry
R	What is you mother tongue, you native language?
S	Malay
R	Is English you second language?

S	yes.
R	Also i want to know how many years you have been studying English?
S	Since kindergarten, so around 5 years until now.
R	What is the language you use most in you daily life?
S	Malay,
R	When you speak English?
S	Doing the presentation, in study time.
R	Now, we are going to have a warming up. The first question is do you read anything in English? Like newspaper, books, online website....
S	Yeah, books.mostly books, story books.
R	Wow, you like to read story books. Do you find its difficult to understand the story books?
S	Quite high, but i always use the dictionary.
R	Do you read academic materials, like article, reference books, journal.
S	Academic books.
R	How often you read it?
S	Almost everyday for study.
R	Do you notice yourself using some reading strategies when you read these materials?
S	First, i look at the title, and then i use the highlighter to highlight the main or key words.
R	Do you find any difference when you read newspaper and when you read academic materials?
S	Maybe, because when i read the newspaper i only read the story, and interesting for me only but for academic text, i need to read all.
R	The first part is related to global strategies. I will have couple of questions regarding this strategy
R	The first is, do you make any plans before reading?
S	I have plans for how long i want to spend on reading, just like the coming exam, i have four papers, i plan to read all of one subject in two days, and i am not finish it i will read it at the rest of days.
R	Will you think about whether i m familiar with the text or not, do i know something about the information?
S	Usually when the lecturer give quits, usually after class we will revise back the reading again.
R	Okay, next question. Do you think about what you have learned before when you are reading a new text?
S	Yes, sometimes i read the topic and sometime i read some words, i think i saw them before.
R	Do you think this old or prior knowledge will help you in your new reading text?
S	Its good then we will be more understand.
R	Do you preview the reading text?
S	Yeah, for every quits if the reading text has, i will look at how many questions, how long, what topic and so on.
R	Do you think its important to look at the length or the structure of the reading text.
S	I think its good to look at it, just i don't usually do this.
R	Do you look at the tables, pictures or figures in the reading text?
S	I think so, because for the figure, we can come out for the information you want, figure

	helps me, like graph,
R	Are you good at searching for detailed information in the reading text?
S	I think so. I pay more attention to this
R	Are you good at getting an general idea of the reading text?
S	Not easy for me,because sometimes if there are some words i don't understand i will confuse about what i am reading, i will forget the general idea of the text.. But i can get small small information and then come up with the big one.
R	Do you choose what to read and what to ignore.
S	Sometimes i will skip some sentence and paragraph, because i will read the question first, then if the sentence don't have the answer, i will just ignore it.
R	Do you mean that you will look at the question you should answer and then look the sentence whether it contains the answer you want. If no, just ignore.
S	Yes, i will do this.
R	Do you notice sometimes they are some typographical features like the boldface or italic, do you pay attention to this?
S	Yeah, i will look at this, its helps me to answer the question more directly
R	After reading, do you usually do criticize or will you evaluate the reading text
S	Sometime, depends on whether i understand or not.
R	The last one in this group is do you check with yourself whether you really understand this text?
S	Yes, exactly.
R	What are the ways you check with yourself?
S	Maybe i ask my friends how the question was answered by them, discuss with them to check.
R	Will you ask yourself questions also?
S	Sometimes but not really.
R	The next group is problem solving strategies
R	The first question is what are those difficulties and problem you are facing during reading?
S	Maybe the words, the vocabulary?
R	Anything else?
S	Mostly the vocabulary/
R	So is there are some unknown words you never seen before, what you gonna do with them.
S	Maybe, i will continue reading and see what the meaning within sentence.
R	Do you mean that you will continue reading and to see whether you can understand it by the relations.
S	Yes.
R	Do you guess meaning if you don't know?
S	I make a guess, but i know i am not very confident on the guessing
R	Would you check dictionary.
S	Of course, if allowed.
R	Next one, when the reading text becomes difficult, maybe you can not really follow , what you gonna do ?
S	I will continue reading, trying to answer the question also. Or just put it there first, and go on with other questions.

R	During reading, sometimes you will get lost, if this happened, what will you do?
S	I will read the previous the sentence and continue reading, to focus again.
R	Last one, do you prefer to solve reading problems independently or you prefer to solve it in discussion or with your friends?
S	Em, first, i will try by my own to solve it. If really cannot i will ask friends.
R	If the opinion from your friends and from yourself are totally different, what will you do?
S	I will check again, if they are more reasonable, better then me then i will follow their ideas.
R	Okay, the next group is about support strategies?
R	You said you like to check dictionary, how often did you check.
S	Quite often, because there are many words i don't know.
R	Do you take note while reading? What type of notes you usually take?
S	For the academic, i will take notes about the new words getting the meaning, i will write the meaning.
R	So for vocabulary you will write down the meaning.
S	Yes, i do.
R	I remember you said you will highlight also?
S	Yes, i will highlight the key words
R	Do you make summary the general information to a small paper.
S	Depends. but i will just do the mind map for the process. Because sometimes one process is related to another process, in reading there is no relation, so i take the mind map to relate them .
R	Do you paraphrase the sentence or paragraph to your own way to understand?
	Yes, i usually do this to make it easier. Its very helpful
	Do you translate information to your native language
	Just sometimes, because in exam we need to writ in English also.
	The last one, could you share your reading experience with us?
	Some of my friends i notice that they can scan the reading then they can get an general idea, but for me i need time and need to read it all. Can not scan. I will pay attention to words and words.

Interview No. 4 FI3 students

The name of this respondent is Eriquer Phang, he is currently a first year student who studying in Law faculty. He is 21 years old and started learning English since kindergarten at 5 years old, so he has at least 15 years of English exposure. Different with other interviewees, his mother tongue is Cantonese but he usually speaks English and Bahasa Malayue in his daily life. During interview, he is the only respondent who will confirm the meaning of the questions be asked by the researcher and he answered the all the questions in a well organized way.

R	This is Luna Wang. Now, i am having a respondent who is going to be interviewed. The purpose of this interview is to confirm the metacognitive reading strategies you reported in questionnaire survey and examine the difference of choosing reading strategies between FD and FI students. This interview will provide in-depth understanding of the research questions and add triangulation to this research topic.
R	Okay, firstly, let's introduce our respondent, could you tell me your name?
S	My name is Eriqie Phang,
R	And how old are you?
S	I am 21 this year.
R	Could you tell me your academic major?
S	law.
R	What is your mother tongue?
S	Cantonese, English and Malay.
R	What is the language you normally speak in your daily life?
S	English
R	Then how many years you have been studying English?
S	Ever since kindergarten,when i was 4 years old, so about 17 years of English experience.
R	Do you read anything in English?
S	Read English newspapers, reading English economist as well, and English articles in those global magazines.
R	When you are reading these different type of materials, do you find yourself using different strategies or methods?
S	Sometimes, when i don't understand certain phrases, of course i will look at dictionary and help me understanding, i also practice speed reading.because for law faculty you cannot read every words, you dont have time to read words for words. So i practice speed reading.
R	Could you list some strategies you like to use in reading?
S	Yeah, especially those very difficult articles i will re read it through time to get the ideas of the article, otherwise if i just read one time i wouldn't really understand it.
R	Okay, now is the questions related to global strategies. The first question, do you make any plans before reading?
S	Yes. I ask myself certain questions which i want to find answer within the article i am suppose or read through, i don't just read widely, so i think first and then i know, okay this article is talking about that, is not just one short reading.
R	Will you look at the articles to see whether i am familiar with the topic or its a new area for me?
S	Yes, of course, usually in certain field i don't have interest in it, like economics .usually i will just read one time is enough. Because it will not help much in what i am going to do.
R	Do you think about what you have already learned when you are reading the new information?
S	Yeah, of course, because people call me "a walking dictionary" or something like this. So usually i have a certain graph of knowledge, so i usually make the link when i read something, so when i read something, i know what is this going about. But if i don't have many knowledge like medicine, then that one nothing can be done.

R	Do you link previous knowledge with the new reading knowledge.
S	Of course, if the previous knowledge i am not sure about it, when i read something new thing, i will see there is a probably link with i read last time, and i understand it better.
R	Do you preview the reading text then?
S	Yes, i will preview something. The preview one is basically for time, for the time management, for the English text, then i will see how many questions were asked, and how many marks are located to each question, then you will divide your time before you read the article.
R	Do you think its important to look at the organization and the structure of the reading text?
S	Yes, i think is very important, because if it's a formal structure, then we need a deeper understanding for it, and also if it's not a formal language, then you can take it casually.
R	Could you think with yourself, are you good at searching for detailed information?
S	I think i have quite good skills in it. For example, in the law faculty itself, we have to prepare case notes and case memories. I got 9.5 out of 10 point. So we have to look into the certain detailed information and cases.so that's why we have to look sharp to the certain cases and certain things as well.
R	Do you like to do summaries, are you good at summary the general information?
S	Yeah, it's also important to summarize when you want to use it another time, when you have to go and re-read the whole thing again, it's helps you get back to the general idea easily.
R	Another question is about you reading mode, which type of reading mode you think you are using.
S	When i answer the question, i will think first what is the reading text talk about. Of course, generally i will know what the reading text is going to talk, what i will do is i will have a general idea very briefly la, okay, i will pick up all the small points and summarize back to it.
R	When you read, do you choose what to read and what to ignore?
S	First time reading, you cannot do that. Because first time reading you probably wont know what is important so you cannot do it.second time reading, you can choose which part to read. Sometimes it's the opinion of the writer, sometimes it's facts. So the opinion of writer, definitely you will not interpret is again, but the actual information that have been cited you should pay more attention.
R	So if you decided to ignore some parts of the reading text, what will you ignore?
S	The parts i will ignore is like let see in the study of law, which you can ignore is called the orbiter, which means what the judge say in passing. It is their own private opinion. It doesn't affect the what happened and what has been decided in the case. So that you can ignore.
R	After reading, do you usually go back and evaluate or criticize the reading text?
S	Yes, i do that, because i fell its important. You know when you have read it. Sometimes you want to form your own opinion, you want to think this articles has some point but you may disagree in certain extent, so you can form your personal thinking at the end when you evaluate the reading text again.
R	Do you like to check with yourself whether you understand the reading text fully?
S	I will seek the answer form myself first. Think about about. I will also seek for external

	materials like dictionary or journal to solve it, if i really not sure, i will discuss with my friends and lecturers.
R	The next part is problem solving strategies. Do you have any problems and difficulties in during reading process?
S	Language problems sometimes, although we have been speaking English for so many years, there are certain level of English like financial terms or something, you even don't understand whole long sentence. So i find it's quite a big problem.
R	What do you usually do to solve this problems?
S	I will make the sentence in my own way, which means once i identify the point that has complex sentence, i will reword it or maybe i have a paper with me i will write back the sentence in my own understanding. And of course, i will ask someone that do you think what i saying about this sentence make sense.
R	How about those unknown words?
S	Dictionaries are the best, or nowadays, Google.
R	But if there is no facilitates?
S	For law, usually there are lot of new words we wont know, If dictionary is not available.then you have to ask someone, or i will read that word in context , in paragraph itself, because certain times, we can justify and identify what the words is meaning form the paragraph and from the whole text. Something like the relation between them.
R	Will you guess the meaning?
S	I don't try to guess but i try to understand first, because its' very dangerous to guess in law. So actually external materials are very important.
R	When you fond the reading text is very difficult, when will you do?
S	There are certain times, when you read one time you don't understand, when you read second or third time you also don't understand. So what i do is you don't continue reading any more, you just put aside first, wait for sometime, then pick the article up and you reread it, usually it helps.
R	What if you lost your concentration during reading, what will you do?
S	When i read sometimes, i get offtrack, then i will ask myself again what was the focus of the article, or what is the questions want you to find. Okay, then you think back again. Hopefully once you think back, the concentration will get back to you.
R	Do you prefer to solve the reading problem individually, or you prefer to solve it with discussion with friends and lectures?
S	If i have initial problem, i will solve it myself first. If i still cannot solve it myself which happened sometimes, then, of course i will discuss with my friends or ask lecturers.
R	The last is supporting strategies, you mentioned that you will take notes during reading?
S	Yes, i will take notes, it normally are short note which i can remember, when i read articles you may want to keep certain points or keys for yourself. I will write where the source came from, and i felt it important. Notes is very important in the law faculty.
R	Do you highlighting, circling or underlining the sentence or key points.
S	I do underlining, but i don't like to highlight the text because it will spoil the back page. I like to use page marks.
R	Usually do you paraphrase the textual information?
S	Yes, i do paraphrase. Let's see when you are doing assignment, if you don't paraphrase you

	might just copy it directly without understanding. So the best way to help you understand is to paraphrase to your own way based on my own understanding, paraphrase is important for me.
R	Will you do translation the English text to you mother tongue.
S	I normally don't do that, i will also think the information in English directly.
R	The last, could you share your experience of you reading, is there any difference you find in choosing strategies or methods when you compare to the peers?
S	Mind mapping. Because i am encouraged by my parents last time to use coloring pencils or whatever tool to present the point in a more understandable way. Then i will do the short note and i will link back to my own thinking, so you will draw your mind mapping out, then you will see the full picture of it.because if it's just in your head the notes you may have forgotten, so it's better to have something can see first. So you can look at it whenever you want to.
R	Alright, that's all the questions.

Interview No.FD1 students

The fifth respondent is a Malay Indian student who are in his first year of sport science faculty. His name is Iskandar Bin Kamal Bacha. He is 21 years old and he started learning English since kindergarten. He also has at least 15 years of English experience, and he mentioned that he like to learn language, he knows Malay, Timo, Hindu, and English, four types of language, and he is planning to learn more language also. This respondent is quite open minded and like to talk and share his idea, he likes to meet with different people, talk to them and enjoy the social communication.

R	This is Luna Wang. Now, i am having a respondent who is going to be interviewed. The purpose of this interview is to confirm the metacognitive reading strategies you reported in questionnaire survey and examine the difference of choosing reading strategies between FD and FI students. This interview will provide in-depth understanding of the research questions and add triangulation to this research topic.
R	Firstly, could you tell me your name?
S	Okay, My name is Iskandar, Iskandar Kamal Bacha, I m studying currently doing sport science.
R	Are you first year students?
S	Yes, I am.
R	How old are you?
S	I am 21 years old.
R	Could you tell me what is your mother tongue?
S	My mother tongue is Timo, Timo language.
R	How long you have been studying English/

S	Since my kindergarten, since 4 years old.
R	What is the language you use most in your daily life?
S	Daily life more English and Timo.
R	Now is the warming up. First question, do you read anything in English?
S	Yeah sometimes i read newspapers, articles, blog on internet.
R	Do you read academic reading material in English like reference books?
S	Yes, because we use in sport science for assignment, we use English. You have to get reference books form library. So we have to go through this journals, articles.
R	When you are reading journal, or articles or newspapers, do you read it differently/
S	Sometimes, i fell that, when comes to journal, article this official reading materials, the style of language is quite different. Its different with reading newspaper, magazines. I use certain type of strategies, certain paragraph if i don't understand, i try to revise it. Go back each sentence and to look it carefully. Depends on what materials i am reading, i use different methods.
R	Do you notice what are the strategies you use most in your reading/
S	Nomarly, most i like to refers to it. I read about one paragraph i feel that lack of confidence then i revise it, normally i do this. If i feel that anything important, i like to mark, or i just highlight or click it in pencil. I will try to simplify and inter prate in my own way, sometimes the paragraph is too complicated,i will take the important information and i will filter it. I just take the important one , what i need.
R	Now, i will ask you questions related to global strategies. First one, do you make plans before reading?
S	Yeah, normally, i think first what are the type of things i want to get, i do the basic reading. What kind of article it is. What is it related, sport related, religion related to get the topic of the reading text. Then i can prepare myself. I feel when you just read without any idea, it quite like difficult, when you get the specific idea, so you can narrow down your mind and focus on that field.
R	Do you think about what you have learned before when you are reading the new information?
S	Yeah, sometimes when you go certain articles or journal it will be something you read before but in a different way, so its something same but a kind of new. So this kind of thing makes me more interesting. I will like to read something i had experienced before, if there are something new, i like to add my knowledge on it. Because some topics can be different ideas of this journals or articles. I compare what i already get with this new reading information.
R	So you like to compare the knowledge?
S	Yeah, because i like to compare, and i like to think on my own knowledge.
R	Do you preview the reading text though? Having over view.
S	Yeah, i used to do that.
R	What are the thing you will look at when you preview the reading text?
S	When i go through, normally, i just see how long it is, is like one page or half page or very long. The length of the message. And i try to get the main idea, let's see certain words may flash to my eyes, then i now what's the topic is about. If i know the content and topic, i will feel more interested or less interested.

R	Do you think it's important to look at the structure or the organization of the reading text?
S	I don't go so much detail, but roughly i go through the reading text to see what is about. just have a look, and have some ideas.
R	Are you good at searching for detailed information in the reading text?
S	Because i mentioned before, i like to filter, going through the process to take the important information fro the text, so from there, I am able to summarize the general ideas.
R	Do you like to do the summary of the reading text?
S	During our schooling time, we have this summary exercise or practices, it helps for me to do summary, because sometime when you just summarize in your mind, it may just forget it, but when you make it in writing, you will get a clear picture, so i like to do that. I will do some small notes or summary and later on just look back to my small notes.
R	Next question, do you choose what to read and what to ignore?
S	Yes, i used to do that. Depends on my time and situation also. Let's see, if i really busy with study, so i will just read the information which are important to my current situation. But generally i like to get different types of knowledge, if i have time, i will read and learn it all. So it depends on certain time.
R	Let's see if you decided to ignore some part of the information, what will be ignored?
S	Maybe i ignore certain unrelated topic for me something like ,maybe like too much details of economics and politics. Because i can not apply that knowledge very much. I will using more like sport, psychology, human behavior. And i like to learn form example and people's experience. So some types of information i may not very into it.
R	You know there are usually tables, figures and pictures in the reading text, do you like to look at this information?
S	Yes because if they put some table, pictures on the reading text, i believe it should be related. Sometimes i will have a look, and then when going to reading, it helps. Because there is the reason why they put it. Some people don't like figure and table, but i will look at it.
R	After reading, do you usually do the criticize or evaluate the reading text?
S	Yeah, of course, i do it.
R	What are the thing you will evaluate?
S	I will think the level or the language, certain reading materials they have the very high level of language. I am able to judge myself also. Am i able to read this level of language, then i can know where should i improve. Some articles you can feel that this guy is going to say this topic but he is going off the topic. So this is also the thing i will evaluate about a certain reading text. Is the message is clearly delivered to me, so those kind of things i will have a look.
R	The next part is related to the problem solving strategies. The first i want to ask you do you have any difficulties or problems during reading?
S	Problem is like, sometimes the paragraph, i have to use ruler or some pen to keep my eyes focus on certain line. Sometimes is too pack the message. Depends on how it looks. Some lines spacing is too narrow and too close.
R	Anything else?
S	Other things, maybe the language itself. Sometimes i don't know the use so i use the application like dictionary or i will Google it.

R	If dictionary or online check is not possible and available. What will you do?
S	Wow, let tough, i will just judging, it's like something like guess, i try to see the some other words, the sentence, maybe that one or two i don't understand, but it will not affect my understanding at the whole sentence. I will try to interpret it and try to get what it may be talking. To get at least closer to the particular words.
R	If you found the reading text is really difficult, what you will do?
S	Okay, i try to revise again, have a look again. If is seriously very high level, i just try to answer as much as i can, i will try to seek for help.
R	Do you find your self are good at communicating with lecturers or classmates, you like to learn form a more casual environment.
S	Yeah, i like to do that, because for my personal experience, i thins tat you just sit in a formal class, having slides, but sometimes you should have some different kinds of activities of learning. Maybe some casual talk maybe some funny thing happening around you recently, at the same time you are learning something, so i like to do that. Sometimes, i feel that my communication thing is quite easy for me, because i don't keep any limit for myself.
R	When you lost your concentration in reading, what will you do?
S	I will just stop and take a little break, refresh myself a little bit. Then i get back to it.
R	The next part is supporting strategies, you mentioned that sometimes you will also take notes.
S	Yes, do some small summaries.
R	What are the information you will take notes.
S	The important information and key points, and sometimes i will click the unrelated one to remind myself this part is not very important.
R	Do you like to paraphrase the sentence?
S	Yeah, i do this, but normally i will just look back at the sentence itself. Because some sentence when you change the structures or change some words, the meaning it different already. Changing the structure is quite seldom, because i scared that i changed the meaning or i miss some part of the original meaning.
R	Do you translate the textual information to your own mother tongue.
S	Sometimes, because some certain word i can find something same in my mother language, then i will get a idea from the native language. But generally i don't depend on other language, i just try to understand on it own language. Don't want to change the context, it may change the meaning. And because in Malaysia context, even many languages we are studying, our teachers from primary school always said to us don't compare to your own language, they don't want student to confuse and don't want students to misunderstand it. so maybe because of this, i don't do this mistake.let's say, if you don't understand this, just go for simple words, but don't words to words translate to you mother language. So i normally just interpret to the same language , but i don't translated to another language.
R	After reading, do you normally check your own understanding?
S	Sometimes i will check with my friends if my friends around me, sometimes they get more clear picture, but sometime by explaining to them, i become more clear myself, so i will not keep thing with myself, i like to know people's idea and opinion. I prefer to talk to others, to get different understanding and different opinions.

R	Last question is do you find yourself are using some special strategies different with other in reading you would like to share?
S	Yes, i think i used to share my ideas with others because most of my friend are from different background, some of them are foundation program, some are diploma studies, so they have their own interpretation and their own ideas, sometimes i just try to share my methods some people they just left their own idea because they think maybe mine is better. So i used to share with peoples.

Interview No.FD2 student

This respondent is a Malay girl who is now studying Islamic in her first year. She is 20 years old. She started learning English since primary school around 7 years old, so she has 13 years of English exposure. Even she said her mother tongue is Bahasa Malay, but she reported that her mother tongue is not very good and usually speak mix Malay and English in her daily communication. She said for Islamic study, they also have to learn Arabic, and they use English quite often in study, that why from the communication with researcher, the researcher found that her oral English is quite fluent compare to another Malay interviewee, and she admit that she learns language very fast and she is confident in language learning.

R	This is Luna Wang. Now, i am having a respondent who is going to be interviewed. The purpose of this interview is to confirm the metacognitive reading strategies you reported in questionnaire survey and examine the difference of choosing reading strategies between FD and FI students. This interview will provide in-depth understanding of the research questions and add triangulation to this research topic.
R	Firstly, could you tell me your name?
S	My name is Unaisah Adam.
R	Could you tell me how old are you/
S	I'm 21
R	Are you first year student?
S	Yes, I am first year student.
R	What is your academic major.
S	Academy in Islamic studies.
R	So your mother tongue is Malay?
S	Yes, Malay.
R	Is English your second language?
S	yes.
R	Did you learn any other languages?
S	Yes, Arabic.
R	Then how many years you have been studying English?
S	Since i was in primary one which is 7 years old, almost 14 years.
R	And what is the language you use most in your daily life?
S	En, Malay..
R	When you usually speak English?
S	When i communicate with my friends, sometimes i do communicate in English with my

	parents also. Because in Singapore, we didn't speak fluent Malay like Malaysia, we speak like so called "ruja" which is a mixture of Chinese, Malay and English and Tamil language. So i also speaks English in my daily life but my Malay is not very good.
R	Okay, now we are going to have a warming up. Firstly, do you read anything in English?
S	Yes, but usually i read magazines.
R	Do you read English articles, journal, or reference books related to our study?
S	Sometimes, but mostly i read newspapers, see if the news is really important and need.
R	Now, could you think about when you are reading newspaper and when you are reading academic materials, do you use different ways?
S	Actually, i just continue reading the text until i understand it.
R	What are those strategies you notice you use frequently in reading?
S	I found myself when the thing seems logical, then it is easier for me to understand it.
R	Anything else? Some students reported that they like to highlight with color, and some like to take notes, how about you?
S	Actually i don't like to use coloring and circle and drawing like that, i find myself hard to understand it. Sometimes it will makes me confuse. But some of my friends they did mind maps, a lot of them did mind maps.
R	Then did you also do mind mapping?
S	No, i just read the text and highlight the information i think is important. But only in one color.i cannot concentrate with a lot of colors. For me its a kind of messy.
R	Yeah,understand. So what are the things you will highlight in reading?
S	Usually the definition, a name of a person, places, dates. Other stuff i will just ignore it. Or i will read the paragraph and summarize it. And write is in another parer.
R	Are you good at summarizing?
S	Usually i do that, because for me that's easy.
R	Now is the questions referring global strategies, the first one is do you make any plans before reading?
S	Actually i dont think is very often, i just read the text and highlight the text.
R	This plans such as how long one is going to finish a reading text, what is the purpose of reading this specific reading. Do you have any plans like this?
S	Oh, actually i did planning, foe example, i read two text and did the summarizion you know, and i will think like to use 10 minutes to memories the text.
R	Before reading, will you think about what i want to get from this reading text?
S	Actually, before reading, i will look at the text and the questions are asked to know what actually i am about the read, so i will not that lost.
R	Do you think about the knowledge you have learned before when you read new text?
S	Yes, i always bring my knowledge to reading, to think what i know about the new reading text. When i summarize the text i use my understanding, and my previous knowledge.
R	What type of reading text you like? A totally new information or something you have experienced before?
S	Wow, i like to read something i know and add some more knowledge to it, but i am also like to read new things.
R	Do you preview the reading text?
S	Yes, i usually have a overview about the text, which means i scan the text .

R	And what are the things you will focus if you preview or scan the text?
S	I will actually, read the introduction, and i will just scan and go back to the last page and read it so i have a overview of what is this text talk about.
R	What do you mean by scan?
S	Mean to get some general ideas, and the basic information.
R	Next one, do you think its important to look at the structure and organization of the reading text?
S	I don't think its important to look at every paragraph, i think what is important is you just have to know what type of information you are reading. So you can gather some vocabulary inside your mind and get the related topic.
R	Which one you prefer to do, searching for the detailed information or getting general ideas?
S	I think, the thing is that, i did have some general information of the reading text, but then i will like to question “why” “which” “where” “who”, then i will related to that information.
R	When you are reading, do you choose which part of information to focus and which part to ignore?
S	Yes, i did choose. Like i said, i will only concentrate on the main and the important information. I will scan and i will understand what i scan la. Those unrelated point i will just ignore. Because some of it is just repeated, and some of it is just general knowledge.
R	Do you look at the table,figure and pictures in the reading text?
S	I do look at it, but it is hard for me to digest these kind of information. When it comes to especially numbering.
R	Sometimes you will also notice there are some bold words and Italics, do you pay attention to them?
S	I will pay attention to this, because they may carry some important information.
R	The next questions is after reading, do you go back and evaluate or analyze the reading text again?
S	Yes, i did that, i will actually underline and put a question mark like “why is it there” to remind myself to think again. Or this sentence doesn't really make sense. There must be something wrong with the sentence.
R	Did you actually check with yourself whether you understand the reading text fully?
S	Yes, because in Islamic study, you need to memorize a lot of stuff and you have to have a good memory. So in order to memorize the passage you have to fully understand the passage.
R	Which one you prefer, you prefer to solving problems within discussion with friends or you prefer to do it independently?
S	Actually i did both, firstly i will have my understanding of something, and then i will ask another person’s opinion, and i will compare it, and if it doesn't really make sense, i will ask lecturers or more people.
R	There are sometimes that your understanding is different with others, are you easily be influenced by people’s opinion?
S	Actually, when i communicate with somebody, i will actually observe them, if i find them like trustworthy and knowledgeable and i will follow, and easily influenced by them
R	The next part is related to problem solving strategies. The first question is what are those problems and difficulties you find yourself facing when reading?

S	When reading difficult text, i actually find myself difficult to understand terms, and i am not familiar with some terms.
R	How could you deal with this terms?
S	Sometimes i will search on dictionary but sometimes we need specific dictionary to actually know the words. So its kind of hard for me.
R	If there are some unknown words in reading text, what will you do?
S	If i dont know the vocabulary i will read it in the context again, maybe i understand the sentence meaning, so actually i will know the basic meaning of the words also.
R	Do you mean you will read the words in the context and see the relations?
S	Yes, i will look the the relations form the context.
R	When the text becomes very difficult, and you couldn't really catch the point, what will you do?
S	Actually, i will link the first sentence and last sentence and try to understand it generally, i just read what i understand.
R	Sometimes, when you are reading, you will lost your concentration, what will you do?
S	I just leave the text until i take my concentration back. And then get back to text.
R	Next part is supporting strategies, as you said you check dictionary, if there is no dictionary. What will you do?
S	I read read the text again and try to guess the meaning based on my own understanding, maybe, if my friend around, i will ask them la.
R	Do you take notes?
S	I just like to do summarizing. .
R	Its also note taking. Do you paraphrases the textual information to your own words?
S	Summarizing is a kind of paraphrasing, because you just form another way to say it for yourself to understand. But it is not in detail.
R	Because your mother tongue is Malay, do you translate the sentence to Malay language?
S	Actually, my Malay is not that fluent and good, so i will just reading and summarize in the same language. I think if you translate to another language, there might be something different.
R	Could you share some of your reading experience which you find are different from others reading strategies, do you use some special reading strategies?
S	Many of my friends use mind map, but i actually do summarizing and i what i did that my friend couldn't understand because, for example, the sentence “the cat is fat” then i will use the “d i f” which means the cat is fat. Like a short form, only one letter for a words. Then before exam, i will remember that short letter like “ g e f d” then my friend will like what you are memorizing. I find it better to just remember the whole thing.

Interview No FD3 student

The interviewee is a Malay girl, named Nur Afiah Aina Bi Zainuorh, she is now studying in dentistry first year undergraduate student. She is 20 years old. She also started English exposure since primary school, so she has 15 years of English learning experience. Her mother tongue is Bahasa Malay, but she usually speaks English and Malay in her daily life and she mentioned that for dentistry studies, English is quite important for them, that’s why they use English often. This student

is quite relax and enjoy talking and sharing her learning experience. We conducted this interview in her college open study area where she prefer to have it at a familiar place.

R	This is Luna Wang. Now, i am having a respondent who is going to be interviewed. The purpose of this interview is to confirm the metacognitive reading strategies you reported in questionnaire survey and examine the difference of choosing reading strategies between FD and FI students. This interview will provide in-depth understanding of the research questions and add triangulation to this research topic.
R	Firstly, could you tell me your name?
S	My name is Nur Afiqah Aina Bi Zainuorh
R	Could you tell me you age?
S	I am 20 years old now.
R	What is your academic major?
S	Dentistry.
R	What is you mother tongue, native language.
S	Malay
R	Is English you second language.
S	Yes.
R	How many years you have been studying English?
S	I think since primary school.about 15 years.
R	What is the language you use most in your daily life?
S	Both English and Malay.
R	Okay, now let's have some warming up. First question, do you read anything in English?
S	Yes, newspapers, articles from internet, and my text books are usually read.
R	Do you read academic books, articles journal something like this?
S	Yes, i read.
R	Do you find any difference when you read newspaper, magazines and when you read academic materials.
S	Because i think for newspaper, there are so many new things and so many words are harder than my text book, my text book they are straight forward that i can understand it.
R	Concerning this, do you use different strategies or methods to read them?
S	For newspaper, actually i really need to focus on it to translate it to my own understanding one by one words, but for text books, even though the words are sometimes hard for me to understand but actually i take the whole concept so i understand the text book.
R	So do you mean that for you actually the problem is newspaper is not very familiar, but text books you know something before.
S	Yes, exactly. For text book since they are mostly biology, and i have been study biology since high school so, i can take the whole concept to understand it.
R	Can you list some of the strategies you use very often in reading?
S	I think my strategies is, firstly i read it in a fast way, and after take the whole concept and understand it i will read it back and write down what i understand, so actually i summarize it. Then i will have a general idea.
R	Okay, next part is about global strategies, so do you make any plans before reading?
S	Yes, i make some plans, for if i read text books i will take a paper to translate it to get a

	general idea. I will prepare with my dictionary if i need to check the words.
R	Do you think about what you have already learned when you are reading a new text?
S	Yes, i will try to related it with my previous understanding. When i read the whole page, and then i will sort and try to check whether the new information related to the previous knowledge i know. So if it not related, i will classify to different group. Its automatically in my mind.
R	Which one you prefer, totally new information or something you have some knowledge about?
S	The one which has some relation with my knowledge. I find it easier to understand and easy to remember.
R	When you get a text, do you preview the reading text?
S	Yes, i will have a overview, mostly when i get a text, i will read through all the pages and take what is all about and then answer it. I will see what is the topic of the text.
R	Any other things you will look at?
S	When i read through, i will find out which information or question is the easiest one and i will do the easiest one first.
R	Do you think its important to look at the organization and the structure or length of a reading text?
S	Yes, actually i like to judge or summarize it what it is about, so i can understand better. So i can give deeper and better answer to the questions.
R	Are you good at searching for detailed information in a read text.
S	For answering the question, because the question will ask the detailed information, so we have to focus on detail.
R	Are you good at getting general idea?
S	If i just scan the paper, i think i can get the general idea already. Because i like the see through the page and guess what is it about.
R	When you read, do you choose what to read and what to ignore?
S	Usually, i will not do that, usually i will try my best to read all the information, because i am afraid the one i think is not important i can ignore, is the one the question asks me to answer. Especially for academic text.
R	Do you like to look at he table, figure and pictures in the reading text?
S	Usually i will focus more on the words, but if the question say "look at the figure" then for sure i will look at it, but if the question don't referring to any so i will not look at it.
R	Sometimes you will notice there are some boldface, Italics , will you pay attention to this?
S	Yes, i will focus on it more, because i just guess maybe it's very important.
R	After reading, will you go back to evaluate and criticize the reading text?
S	Sometimes, i will look at is the question is clear enough, when i look back i will criticize is the questions prepared for me is good enough to understand. So i will judge the people who made the questions.
R	After reading, will you check with yourself whether i understand the text fully?
S	Yes, i used to do that.
R	Actually, if i can understand it which means i can answer the questions, so i will filled my text book and check the correct answers to see whether i did it right or wrong.
R	Next group is problem solving strategies. What are the difficulties and problems you may

	face during reading?
S	Yes, i have problem to understand some words, vocabulary in academic text. Some lecturers have higher level of language, so they use difficult words for the question, but i cannot really understand the question because of the words.
R	How do you deal with the words you didn't know before?
S	So, i purpose to answer the question, even i cannot understand the words, i just take the key words that i can understand, i am going to force myself to understand each words, i just take a general idea of the content. Maybe look at in the sentence, and understand sentence meaning.
R	When the reading text becomes difficult, what you usually do?
S	I will try to read it again and try to understand it. Just do my best.
R	Will you adjust yourself?
S	For the long and hard articles, i will try to review it fast for the first time, and then second time or third time i will read it very carefully. I will sometimes look at the next sentence to see the relation, whether next sentence give me some ideas of the first one.
R	When you find yourself lost concentration during reading, what will you do?
S	I will try to look at the topic sentence or title to find what i am reading, which part of it. I will go back the the previous information to find what i am reading.
R	When problems happen in reading process, you prefer to solve the problems with discussion with classmate, friends lecturers, or you prefer to solve it independently?
S	I prefer to do the discussion or ask lecturer, because from discussion i also get motivation form others. It's better than i just figure it out by myself.i can add their understanding and relate it to mine.
R	Next one is supporting strategies.do you often check dictionary?
S	Sometimes, for the words i don't know.
R	Do you take notes while reading?
S	Yes, for the easy article i will just read it, i start to take note since i m in university, for the foundation study. Because i think it is difficult for me to just read it. I need to write down something.
R	What types of notes taking.
S	I will write down what i understand about the text, i try to convert to my mother Tongue, because my text book is in English, i try to translate to Malay, not the same words, but my own words, so i can understand better.
R	So do you mean you will not do the word to word translation, but you will write down your own understanding but in Malay language?
S	Yes, exactly. Jsut with another words i can understand better.
R	Then how about paraphrasing?
S	Actually, i think i do translating, i understand it in English and i translated it to Malay, seriously. And then i wrote down. But i will form the understanding in my mind.
R	Can you share your reading strategies which are different with others and something you find special?
S	Maybe, i find it since i am in dentistry, the difference is, my friends they try to read and they can directly understand it, i don't know how they did that, for me, when i read it, i try to imaging the pictures the thing, like i learn anatomy, i try to imagine where it is in the

	body, how does it work, even though i never saw the figure, but i try to draw the figure. Then i will understand better.
R	Okay,, that all the questions.