Taiwanese First Year University
EFL Learners’ Metacognitive Awareness and Use of Reading Strategies
in Learning to Read: Proficiency Levels and Text Types
Submitted by
Ping-Yu Liu
to the University of Exeter as a thesis for the degree of Doctor of Philosophy in
Education
November 2013
Taiwanese First Year University EFL Learners’
Metacognitive Awareness and Use of Reading Strategies in
Learning to Read: Proficiency Levels and Text Types

Submitted by

Ping-Yu, Liu

to the University of Exeter as a thesis for the degree of Doctor of Philosophy in
Education
November 2013

This thesis is available for library use on the understanding that it is copyright
material and that no quotation from the thesis may be published without proper
acknowledgement.

I certify that all material in this thesis which is not my own work has been
identified and that no material has previously been submitted and approved for
the award of a degree by this or any other university.

PING-YU, LIU
ABSTRACT

Although studies on L2 learning strategies are a major strand of second language research, recent research has shifted its focus onto language learners’ metacognitive awareness and use of strategies. Previous studies shed important light on the amelioration in L2 educational practices, but research on learners’ metacognition in the reading process in EFL contexts remains insufficient, especially at the university level in terms of the emic view of the participants studied in Taiwan. Based on an interpretive stance, this exploratory case study aimed at probing 12 Taiwanese first year university EFL learners’ metacognitive awareness and use of reading strategies during their strategic reading process, and the relationship with proficiency levels and texts of both the narrative and the expository type. This study relies on the think aloud and immediately retrospective protocols of 6 high proficient and 6 low proficient readers as the principal sources of data. The think aloud protocols and the immediately retrospective interviews were transcribed and subjected to content analysis by means of coding them. Taiwanese first year university EFL readers’ metacognitive awareness and use of reading strategies were then analysed and interpreted from a broad metacognitive perspective within the information processing model in terms of strategy application for reading comprehension problem-solving. The findings revealed that the participants demonstrated an awareness and control of their cognitive activities while reading. The strategies they employed were grouped into the categories of supporting reading strategies (SRSs), cognitive reading strategies (CRSs), and metacognitive reading strategies (MRSs). The study found that these learners’ metacognitive awareness and use of reading strategies in learning to read were closely related to L2 proficiency. The low proficient readers’ unfamiliarity with L2 is a hindrance to their reading comprehension which, in turn, disabled them from using the strategies appropriately and effectively. Furthermore, the high proficient readers outperformed
their low proficient counterparts in terms of both the quality and quantity of strategies used. Both groups did not use the same strategy types. The findings also revealed that certain types of reading strategy were used differently due to the texts of the narrative and the expository type across the different ability levels. The existing literature on metacognitive awareness and use of reading strategies in learning to read is discussed and pedagogical implications for teachers of L2 reading are offered. These implications include suggestions made for providing learners with explicit reading and strategy instruction and texts with different structure in relation to strategy use. Finally, the limitations of the current research study and recommendations for further research were stated.
ACKNOWLEDGEMENTS

The completion of this PhD thesis would have never been possible without the support, inspiration, assistance, and encouragement of several people involved throughout the entire process of my PhD studies. I am highly appreciated and grateful for their contribution during the time I spent on my research project.

First and foremost, thanks are due to Buddha, The Almighty, for bestowing me with perseverance, words of wisdom, blessing, mercy, and total commitment, which guided me throughout this long and painstaking journey.

My special thanks, deep appreciation, and gratitude go to my first supervisor, Dr. Li Li, who constantly provided me with academic and non-academic guidance and support. Her experience and knowledge throughout the entire process of my work on this thesis enabled me to complete it. Her patience and belief in my ability to complete my research meant a lot to me.

I also owe a debt of gratitude and thanks to my second supervisor, Dr. Shirley Larkin, who provided me with help related to my research field. Her valuable guidance, constructive suggestions, and profound insights into my research area throughout this long journey meant a lot to me. Likewise, I am also grateful to my uncle and aunt for their financial support and encouragement. Without their support and help, I would have been unable to complete my PhD studies and thesis.

My sincere thanks go to my mentor, Dr. Deborah Osberg, whom I consider a friend, for her caring, emotional support and encouragement throughout this long journey. Without her valuable insights into life, I would have been unable to continue working
on my PhD research project. Her words of wisdom meant a lot to me because they enriched my life and helped me to broaden my vision of the future.

I would like to say a special thank you to the academics and friends, Nikko, Stephie, Grace and Venus, who provided me with help, support, and encouragement. Without their willingness to be listeners and companions, I would not have had the outlet that enabled me to restore my spirits whenever I felt upset, frustrated, and stressed.

Last but not least, I would like to express my deep gratitude to my big family in Taiwan: my grandmother, father, sisters, brother, aunts, father-in-law, and mother-in-law, who endlessly supported me with their prayers and encouragement. I hope that I can repay them one day.

Likewise, my special and deep thanks go also to my wife, who suffered a lot during this journey because of my pressure. I owe her a deep debt of gratitude for her patience, company, and constant emotional strength. My special thanks go also to my child, Tzu-ning, who kept me company and played with me whenever I was upset and frustrated.

Finally, I would like to dedicate this doctoral thesis to my deceased mother, who motivated me to pursue my PhD studies. I wish that she were with me to see the completion of the project and could share the joy and happiness with me.
## TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Abstract</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acknowledgements</td>
<td>5</td>
</tr>
<tr>
<td>Table of Contents</td>
<td>7</td>
</tr>
<tr>
<td>List of Tables</td>
<td>12</td>
</tr>
<tr>
<td>List of Appendices</td>
<td>13</td>
</tr>
<tr>
<td>List of Abbreviations</td>
<td>15</td>
</tr>
</tbody>
</table>

### Chapter 1: Introduction

1.1 Introduction                  | 17|
1.2 The scope of the current study| 17|
1.3 The theoretical framework underpinning the study | 21|
1.4 The educational and social-cultural background of the study | 23|
1.5 The problem                   | 24|
1.6 Research aims and questions   | 25|
1.7 The rationale for the research design | 26|
1.8 The significance of the current study | 27|
1.9 Overview of and organization of the current study | 30|

### Chapter 2: Context of the study

2.1 Introduction                  | 34|
2.2 Role of English learning in Taiwan’s educational reform | 34|
2.3 Role of English reading in Taiwan’s educational reform | 36|
2.4 Problems of teaching the English reading course in Taiwan | 36|
2.5 The significance of metacognition in English reading in Taiwan EFL context | 39|
2.6 The profile of the university regarding the current research | 40|
2.7 The English curriculum of the university regarding the current study | 41|
2.7.1 The significance of reading comprehension as metacognition in the fundamental English reading and writing course | 42|
2.8 Conclusion                    | 43|

### Chapter 3 : Literature review

3.0 Introduction                  | 46|

#### Part 1

L2 learning and reading strategies in learning to read as cognitive processes

3.1.1 Reading process and SLA theories | 47|
3.1.1.1 Behaviouristic theory          | 48|
3.1.1.2 Cognitivism/ Cognitive theory  | 48|
3.1.1.3 Social cognitive perspective/Constructivism 49
3.1.1.4 The rationale for L2 learning and reading within the cognitive perspective 49
3.1.2 Learning to read as a problem-solving process 51
3.1.3 Clarifying the terminology related to L2 learning and reading 52
3.1.4 Definitions and importance of learning strategies in L2 reading 54
3.1.5 Classifying types of language learning strategies 55
3.1.6 Learning strategies in reading and cognitive theories 58
3.1.7 The reading process and reading strategies in L2 Learning 59
3.1.8 Summary 62

Part 2
Metacognition or metacognitive awareness in L2 learning and reading
3.2.1 The significance of metacognition in L2 learning and strategic reading 63
3.2.2 Metacognitive awareness in L2 learning and reading strategy 64
3.2.3 Summary 67
3.2.4 The link between executive control and metacognition in use of strategies in learning to read 67
3.2.5 Role of comprehension monitoring as metacognition in L2 learning and reading 71
3.2.6 The relationship between reading skills and reading strategies in metacognition 73
3.2.7 Metacognition among skilled and unskilled readers 74
3.2.8 Metacognitive or metacognitive awareness of reading strategies versus knowledge of reading strategies 75
3.2.9 Summary 76

Part 3
Text genres in relation to learning to read
3.3.1 Differences between narrative and expository texts 77
3.3.2 Summary 81

Part 4
Empirical studies on metacognitive awareness and use of reading strategies in learning to read with regard to reading proficiency levels and text types
3.4.1 Metacognitive awareness and reading strategy use of ESL learners 82
3.4.2 Metacognitive awareness and reading strategy use in EFL contexts 86
3.4.3 Comparing the metacognitive awareness and reading strategy use of L1 and L2 learners 90
3.4.4 Comparing the metacognitive awareness and reading strategy use 94
Chapter 4: Research methodology

4.1 Introduction
4.2 The research paradigm
  4.2.1 The positivistic research paradigm
  4.2.2 The interpretive research paradigm
  4.2.3 The critical research paradigm
4.3 The paradigm followed in this study
4.4 Determining the research design
4.5 Research questions revisited
4.6 Describing the current context
4.7 Selecting the placement test
4.8 Selecting the participants and the research context
4.9 Research methods and data collection procedures
  4.9.1 The pilot study
  4.9.2 The think-aloud method
  4.9.3 Training of the think-aloud task
  4.9.4 Conducting the think-aloud method
  4.9.5 The reading passages selected
  4.9.6 Interviews
  4.9.6.1 The immediately-retrospective interviews
4.10 The need for “triangulation”
4.11 Data analysis procedures
  4.11.1 The data analysis of think-aloud protocols and immediately-retrospectively interviews
4.12 Reliability checking
  4.12.1 Reliability checking of the think-aloud protocols and immediately retrospective interviews
  (a) The inter-coder reliability checking
  (b) The intra-coder reliability checking
4.13 Ethical considerations
4.14 Conclusion

Chapter 5: Findings and analyses of the current research

5.1 Introduction
5.2 Metacognitive awareness and use of reading strategies in learning to read in L2
  5.2.1 SRSs in learning to read
  5.2.2 MRSs in learning to read
5.2.3 CRSs in learning to read

5.3 Metacognitive awareness and use of reading strategies in learning to read in L2 and L2 proficiency
  5.3.1 SRs in learning to read and L2 proficiency
  5.3.2 MRSs in learning to read and L2 proficiency
  5.3.3 CRSs in learning to read and L2 proficiency

5.4 Metacognitive awareness and use of reading strategies in learning to read in L2, L2 proficiency and text type
  5.4.1 The interplay of SRs between L2 proficiency and text type
  5.4.2 The interplay of MRSs between L2 proficiency and text type
  5.4.3 The interplay of CRSs between L2 proficiency and text type

5.5 Conclusion

Chapter 6: Discussion and interpretation of the current research
6.1 Introduction
6.2 The key findings of the study
  6.2.1 Taiwanese first year EFL university learners’ metacognitive awareness and use of reading strategies in L2 learning
  6.2.2 Utility of strategic knowledge in L2 reading and learning
  6.2.3 Meta-strategic reading as comprehension monitoring
  6.2.4 Role of linguistic knowledge and background knowledge in L2 learning and reading
6.3 L2 proficiency and L2 meta-strategic reading and learning
  6.3.1 Role of linguistic knowledge and other knowledge in L2 strategic reading and learning
  6.3.2 Situations where meta-strategic actions took place
  6.3.3 Awareness and use of strategy knowledge in L2 learning and reading
  6.3.4 Mismatch between tasks and strategy knowledge and use in L2 learning and reading
6.4 The interplay of proficiency level and text type in L2 meta-strategic reading and learning
  6.4.1 The interplay of linguistic knowledge, utility of strategic knowledge, text type, and proficiency in L2 meta-strategic reading and learning
  6.4.2 The interplay of background knowledge, other knowledge, text type, and proficiency in L2 meta-strategic reading and learning
  6.4.3 The interplay of utility of strategic knowledge, text type, and proficiency in L2 meta-strategic reading and leaning

6.5 Conclusion
6.4.4 Differences between reading comprehension question types and text types

6.5 Conclusion

**Chapter 7: The conclusions, implications, and limitations of the current research**

7.1 Introduction

7.2 A summary of the main findings and implications

7.3 Limitations of the study

7.4 Pedagogical implications

7.5 Methodological implications

7.6 Suggestions for further research

7.7 Final conclusion to the study
List of Tables

<table>
<thead>
<tr>
<th>Table</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 3.1 Differences between narrative and expository texts</td>
<td>79</td>
</tr>
<tr>
<td>Table 4.1 Performance on the GEPT test</td>
<td>111</td>
</tr>
<tr>
<td>Table 4.2 Demographic information of high proficient readers</td>
<td>112</td>
</tr>
<tr>
<td>Table 4.3 Demographic information of low proficient readers</td>
<td>112</td>
</tr>
<tr>
<td>Table 4.4 Solutions to the problem associated with the think-aloud procedures</td>
<td>118</td>
</tr>
<tr>
<td>Table 4.5 Examples of the meaningful units and codes/labels</td>
<td>132</td>
</tr>
<tr>
<td>Table 4.6 Examples of the meaningful units, codes, subcategories and categories identified as reading strategies in learning to read</td>
<td>134</td>
</tr>
<tr>
<td>Table 5.1 Type and Frequency/percentage of overall SRSs by these learners</td>
<td>145</td>
</tr>
<tr>
<td>Table 5.2 Type and Frequency/percentage of overall MRSs by these learners</td>
<td>147</td>
</tr>
<tr>
<td>Table 5.3 Type and Frequency/percentage of overall CRSs by these learners</td>
<td>150</td>
</tr>
<tr>
<td>Table 5.4 Type and Frequency/percentage of overall SRSs by group</td>
<td>159</td>
</tr>
<tr>
<td>Table 5.5 Type and Frequency/percentage of overall MRSs by group</td>
<td>161</td>
</tr>
<tr>
<td>Table 5.6 Type and Frequency/percentage of overall CRSs by group</td>
<td>169</td>
</tr>
<tr>
<td>Table 5.7 Type and Frequency/percentage of overall SRSs by the HPRs and LPRs across text types</td>
<td>191</td>
</tr>
<tr>
<td>Table 5.8 Type and Frequency/percentage of overall MRSs by the LPRs and LPRs across text types</td>
<td>195</td>
</tr>
<tr>
<td>Table 5.9 Type and Frequency/percentage of overall CRSs by the HPRs and LPRs across text types</td>
<td>201</td>
</tr>
<tr>
<td>Appendix</td>
<td>Description</td>
</tr>
<tr>
<td>----------</td>
<td>-------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Appendix A</td>
<td>Taxonomies of learning strategies</td>
</tr>
<tr>
<td>Appendix B</td>
<td>An example of the student background questionnaire</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Symbols used in transcribing the think-aloud protocols</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Symbols used in transcribing the immediately retrospective interviews</td>
</tr>
<tr>
<td>Appendix E</td>
<td>An excerpt of the transcript of the pilot study from a male high proficient learner reading the narrative text</td>
</tr>
<tr>
<td>Appendix F</td>
<td>An excerpt of the transcript of the pilot study from a male high proficient learner reading the expository text</td>
</tr>
<tr>
<td>Appendix G</td>
<td>An excerpt of the transcript of the pilot study from a male low proficient learner reading the expository text</td>
</tr>
<tr>
<td>Appendix H</td>
<td>An excerpt of the transcript of the pilot study from a male low proficient learner reading the narrative text</td>
</tr>
<tr>
<td>Appendix I</td>
<td>An example of the reading text used for think-aloud training sessions</td>
</tr>
<tr>
<td>Appendix J</td>
<td>The directions for the think-aloud method</td>
</tr>
<tr>
<td>Appendix K</td>
<td>The narrative text used for collecting the think-aloud protocols and the immediately retrospective interviews</td>
</tr>
<tr>
<td>Appendix L</td>
<td>The expository text used for collecting the think-aloud protocols and the immediately retrospective interviews</td>
</tr>
<tr>
<td>Appendix M</td>
<td>The directions for immediately retrospective interviews</td>
</tr>
<tr>
<td>Appendix N</td>
<td>An inventory of the metacognitive awareness and use of reading strategies in learning to read identified from participants’ verbal reports in the think-aloud (TA) and immediately retrospective interview (IRI) sessions across the two text types</td>
</tr>
<tr>
<td>Appendix O</td>
<td>An excerpt of the transcript of the think-aloud protocols and immediately retrospective interviews of a female high proficiency learner reading the narrative text</td>
</tr>
<tr>
<td>Appendix P</td>
<td>An excerpt of the transcript of the think-aloud protocols and immediately retrospective interviews of a female high proficiency learner reading the expository text</td>
</tr>
<tr>
<td>Appendix Q</td>
<td>An excerpt of the transcript of the think-aloud protocols and immediately retrospective interviews of a female low proficiency learner reading the narrative text</td>
</tr>
<tr>
<td>Appendix R</td>
<td>An excerpt of the transcript of the think-aloud protocols</td>
</tr>
</tbody>
</table>
and immediately retrospective interviews of a female low proficiency learner reading the expository text

| Appendix S | An Example of the reliability checking | 340 |
| Appendix T | An excerpt of the total frequencies of strategy use included in the transcript of the think aloud protocols and immediately retrospective interviews | 344 |
| Appendix U | An excerpt of the frequencies of strategy use included in the transcript of the think aloud protocols and immediately retrospective interviews | 347 |
| Appendix V | Certificate of ethical research approval | 350 |
| Appendix W | Consent form | 357 |
| Appendix X | Frequencies of strategy use in learning to read by the high proficient and the low proficient readers with narrative and expository texts | 358 |
### List of Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EFL</td>
<td>English as a Foreign Language</td>
</tr>
<tr>
<td>ESL</td>
<td>English as a Second Language</td>
</tr>
<tr>
<td>SLA</td>
<td>Second Language Acquisition</td>
</tr>
<tr>
<td>LLSs</td>
<td>Language Learning Strategies</td>
</tr>
<tr>
<td>LSs</td>
<td>Learning Strategies</td>
</tr>
<tr>
<td>ELT</td>
<td>English Language Teaching</td>
</tr>
<tr>
<td>MOE</td>
<td>Ministry of Education</td>
</tr>
<tr>
<td>GTM</td>
<td>Grammar Translation Method</td>
</tr>
<tr>
<td>LTM</td>
<td>Long Term Memory</td>
</tr>
<tr>
<td>STM</td>
<td>Short Term Memory</td>
</tr>
<tr>
<td>ILC</td>
<td>International Language Centre</td>
</tr>
<tr>
<td>HPRs</td>
<td>High Proficiency Readers</td>
</tr>
<tr>
<td>LPRs</td>
<td>Low Proficient Readers</td>
</tr>
<tr>
<td>L1</td>
<td>First Language</td>
</tr>
<tr>
<td>L2</td>
<td>Second Language</td>
</tr>
<tr>
<td>LTTC</td>
<td>Language Teaching and Testing Centre</td>
</tr>
<tr>
<td>GEPT</td>
<td>General English Proficiency Test</td>
</tr>
<tr>
<td>SRSs</td>
<td>Supporting Reading Strategies</td>
</tr>
<tr>
<td>MRSs</td>
<td>Metacognitive Reading Strategies</td>
</tr>
<tr>
<td>CRSs</td>
<td>Cognitive Reading Strategies</td>
</tr>
</tbody>
</table>
CHAPTER 1
Chapter 1 Introduction

1.1 Introduction

This chapter aims to provide a general overview of the current study. It will address the following issues: (1) the scope of the current study; (2) the theoretical framework underpinning the study; (3) the educational and sociocultural background of the study; (4) the problem; (5) research aims and questions; (6) the significance of the current study; (7) the rationale for the research design; (8) an overview of the organization of the current study.

1.2 The scope of the current study

It is reassuring to see that the research into language learning strategies (LLSs) has produced fruitful results on the learning processes of L2 learners. A plethora of studies on the wide range of strategies used by L2 learners have, therefore, been conducted by talking to or asking them to report or self-reflect on what they do during or after the learning process (Naiman, Frohlich, Stern, & Todesco., 1978; Tudor, 1996; Oxford, 1990; O’Malley & Chamot, 1990). From these studies, a variety of strategies employed by learners have been identified, particularly regarding the four traditionally-defined skills—listening, speaking, reading, and writing. The findings show differences and similarities in their use of strategies. All the studies are designed to understand how learners learn a second language (L2). However, this trend gives rise to issues of inconsistency in how to define the terminologies used by different researchers to describe which methods or techniques learners use. This issue requires clarification. The same is the case regarding the taxonomies developed by LLS researchers to investigate learners’ use of strategies, due to their miscellany.

Recently, the interest in LLS research, in the field of second language acquisition (SLA), has focused on learners’ metacognitive knowledge of their use of strategies (Zhang, 2001). Tseng, Dornyei, and Schmitt (2006, p.81) also indicate a need to have a
shift in research, from a focus on “the product—the actual techniques employed—to the self-regulatory process itself and the specific learner capacity underlying it”. This is echoed by Gao (2007), who urges that the specific capacity underlying the self-control process that learners have is as important as the knowledge they have about their cognitive processes known as meta-cognition. This highlights an important role of metacognition, thought of as comprising knowledge and control, in language learning because metacognition can not only reflect learners’ own cognition but also may demonstrate how they consciously control or regulate their own cognitive activities related to any problem-solving (Wenden, 1998). Applied to the context of learning to read in an L2, metacognition (knowledge and control) has the same function and this ability enables learners to plan, monitor, and evaluate their reading for effective comprehension to occur while they are coping with a reading task, since the reading process itself is a cognitive problem-solving task irrespective of L1 or L2 situations (Zhang, Gu, & Hu, 2008). In other words, this process itself is considered “a sequence of internal states successively transformed by a series of information processes” (Ericsson & Simon, 1984, p.10). These internal states represent what metacognitive knowledge about learning to read learners have and how they can deploy effective strategies while controlling or regulating their reading comprehension processes; that is to say, these processes not only reveal how strategic readers consciously construct the meaning out of the texts read, but also reflect how strategically they themselves plan, monitor, and regulate their learning to read (Wenden, 1998). Therefore, Zhang (2001) and Pressley (2000) called for particular attention to be paid to reading regarding L2 readers’ metacognition about how they conceptualise reading processes for meaning-making.

In keeping with this major strand, research into either L1 or L2 reading has been pursued by using think aloud protocols, interviews or questionnaires to elicit or solicit
the readers’ real time thoughts and actions. This is principally to gain a better understanding of how metacognition regarding the comprehension monitoring process between the task and the reader is formed and conceptualized in order to make effective and successful reading comprehension available, either during or after the processes (Zhang, 2001; Jimenez, Garcia & Pearson, 1996). The findings from these studies reveal a variety of metacognitive reading strategies in learning to read either dependent on or independent of reading tasks. Some were related to Flavell’s (1979 & 1987) model—person, task, and strategy knowledge (Zhang, 2001). Others were within the categories of text-initiated, interactive, reader-initiated strategies (Jimenez et al., 1996) and the categories of metacognitive, cognitive, supporting strategies (Mokhtari, Sheorey, 2001). This shift in the domain of L2 reading research has been considered the best means of unveiling the particular and unique ways through which language learners manage their learning, and what mental processes, resources and efforts they make available to become successful, competent and fluent in reading (Zhang, 2001).

However, reading comprehension is defined as a complex process, in which many skills are used (Cain, Oakhill, & Bryant, 2004). Researchers (Palincsar & Brown, 1984; Samuels, 1983) report that there are many factors affecting this process. These factors are related to the text and the reader, among other things (Snow, 2002). The text factors encompass the genre, structure, and content of the reading material (ibid). For example, texts of both the narrative and expository types are regarded as the most commonly used reading materials in the classroom setting and the text structures of both are believed to be interrelated with strategy use and reading comprehension (Wu, 2003). Meanwhile, the reader factors are thought to include prior knowledge, linguistic skills, and metacognitive awareness (Yildirim, Yildiz, & Ates, 2010) because the comprehension process is not just about understanding words, sentences, or even texts, but involves a complex integration of the reader’s prior knowledge, language proficiency, and
metacognitive strategies (Hammadou, 1991). Hence, based upon the statements above, the great importance of metacognition should be attached to strategic reading and learning in order for better reading comprehension to occur. Meanwhile, its relationship with language proficiency levels and narrative and expository texts deserves particular consideration and needs to be re-examined for the following various reasons:

- Firstly, what learners know about their learning can directly influence the process and even the outcome of their learning (Palmer & Goetz, 1988, as cited in Goh, 1997).
- Secondly, the learners’ perceptions of learning strategies will have an influence upon the kinds of strategy they choose or deploy (Nisbet & Shuckmith, 1986, as cited in Goh, 1997).
- In the context of learning to read, metacognition considered by most educators to be a necessary element for effective comprehension involves metacognitive knowledge or awareness and control because readers who have some knowledge about their cognitive processes are able to regulate and control their learning to read in order to deploy efficient strategies for reading problem-solving for the purpose of better comprehension (Koda, 2005).
- Learning to read is “not merely a passive process of extracting meaning from the printed page, but rather an active and interactive process in which the reader uses knowledge of the language to predict and create meaning based on the text” (McLeod & McLaughlin, 1986, p. 114).
- As Wenden (1987) indicated, by taking their awareness and perceptions into account, a better picture of the cognitive complexities that differentiate how learners learn an L2 either successfully or unsuccessfully can be obtained.
- If reading comprehension involves not just understanding words, sentences, or even texts, but also a complex integration of the reader’s language proficiency
and meta-cognitive strategies, as suggested by Hammadou (1991), then this neglected area needs to be addressed in order for L2 readers’ effective learning strategies to be elicited and imparted to less effective readers in terms of enhancing reading comprehension concerning learning and teaching.

- If strategies are understood as the learners’ conscious effort towards language improvement or comprehension (McLeod & McLaughlin, 1986; Oxford, 1996), and different texts of the narrative and the expository type are believed to be often related to reading comprehension during the strategic process (Wu, 2003), this area needs to be addressed in order for the strategies that L2 learners use with different text types to be revealed for the purpose of successful reading comprehension regarding learning and teaching.

- Singhal (2001) highlights the paucity of empirical investigation into the reading strategies used by successful and unsuccessful L2 learners. Only a few studies have examined learners’ metacognitive awareness of reading strategy use, and reading proficiency. This area needs further investigation.

- Learning strategies and comprehension monitoring are the terms most commonly associated with metacognition because both areas involve cognitive and metacognitive processes considered related to any cognitive problem-solving tasks involving strategy application (Afflerbach, Veenman, & Hout-Wolters, 2006).

- Compared with other language skills, there are fewer insights into the process of reading and the way it is detected in EFL contexts regarding reading comprehension and meta-cognition (Zhang, 2001), especially at university level, from the emic view of the participants (Li & Munby, 1996).

1.3 The theoretical framework underpinning the study

As we have seen, metacognition is an ability often related to effective learning
and competent performance in any area of problem-solving (Block, 1992). As far as EFL/ESL learners are concerned, learning to read is regarded as a problem-solving process (Gagne, 1985). EFL/ESL learners usually use reading strategies to cope with difficulties in comprehending the text (Anderson, 1991). These methods include how to conceive a task, which textual cues they attend to, how readers make sense of what they read and what they do when they do not understand (Block, 1986). The reading process also gives rise to the issue of reading strategies. EFL/ESL learners usually employ a number of LLSs during their reading process for the purpose of comprehending, remembering and learning the language of the content read (Baker & Boonkit, 2004). These strategies are special ways or mental thoughts of cognitive activities related to information processing that enhance language learning and comprehension, which involves an executive control mechanism most associated with the information-processing model to oversee, plan, and evaluate the utilization of strategies to achieve a reading comprehension goal (O’Malley & Chamot, 1990).

Garner (1987) postulates that the executive control within the information processing model is believed to coincide with metacognitive control, especially for strategy application in relation to reading comprehension and metacognition. This postulation is based on the fact that both elements of knowledge and control are regarded as equally important for both areas because the active monitoring and controlling of knowledge about one’s cognitive processes entails the effective use of strategies in order for reading comprehension to occur during the strategic process of learning to read when cognitive success and failure in reading comprehension are perceived and detected. With this in mind, I therefore base my research on the broad concept of metacognition within the information processing model from the cognitive perspective particularly related to strategy application regarding learning to read if metacognition refers to how individuals are carefully engaged in the active monitoring
and regulation of knowledge about their cognitive processes, which entails the execution of the effective use of strategies in order for reading comprehension to occur during the strategic processes of learning to read like cognitive activities.

1.4 The educational and sociocultural-background of the study

In the process of international globalization, in Taiwan, learning English is considered a prerequisite for keeping up with this trend. The four traditionally defined English skill areas, listening, speaking, reading, and writing, are now very important. The English language has been incorporated into the national curriculum, ranging from primary school pupils to university students, and has become a mandatory course within both formal and informal institutes. Accordingly, it has been suggested that English should be designated as the medium of instruction in all educational establishments, and its paramount importance has never been neglected by either Taiwanese parents or society at large (Tsai, 2005).

Although there is variability in the amount of English language input and in the use of English in Taiwan society, the success in career and academic development, such as promotion, job hunting, and college applications, is attributed to English proficiency (Hsieh, 2011). Of significance to this trend is the fact that the government in Taiwan has urged the importance of learning English as a second language (ESL) rather than a foreign language (EFL) due to the societal functions. The former (ESL) is concerned with learning English in countries where English is formally spoken and used a tool for communication, while the latter (EFL) is concerned with learning English in non-English speaking countries (Iwai, 2011). Accordingly, in response to this call, the majority of the universities in Taiwan have required students to pass the GEPT test (General English Proficiency Test) administered by the LTTC (Language Training and Testing Centre), authorized in Taiwan as the threshold for either university admission or graduation (LTTC, 2013). It is therefore clear that English language learning has
become a prominent issue in the society of Taiwan and the fluency in English proficiency is undeniably tremendous in terms of defining academic and social life.

1.5 The problem

It is expected that the general population of university students in Taiwan ought to be relatively proficient in English since that they have been learning it for at least seven years (from junior high school to university); however, it appears that the majority of them are unsuccessful readers (Tsai, 2005). In Taiwan, it is not a normal practice in reading classrooms to teach strategies to learners, and classroom practice does not prepare learners to utilize their skills and strategies to predict, infer, analyze, and evaluate by interacting with the reading comprehension passages (Tsai, 2008). This is reflected in the fact that English language teaching in Taiwan has traditionally focused on English skills training (Tsai, 1995; Wu, 1994).

In relation to such claims, Tsai (2008) states that most reading courses aim to train students to decode the language and practice the language skills or rules they have learnt in order to deal with reading tasks given in an artificial context, or else to pass their exams. The focus of the reading course has been mainly on how to teach learners to identify the meaning and grammatical categories of words in order to decode and interpret the encoded passages syntactically and semantically (the bottom-up model), rather than on how to teach the learners to activate their knowledge of the world, past experiences, expectations and intuition to enable them not only to predict or guess the text, but also to use the data in the text to confirm or change their predictions or guesses (the top-down model). It can be inferred that, on this basis, instruction might have a bearing on learners’ metacognition with regard to learning to read since the process for them involves simply processing the information in the text rather than meaning-based comprehension, to some extent. This way of teaching reading obviously fails to augment any meaningful engagement between the text and the
learner because he or she is regarded as the passive recipient of the instruction rather than the active participant in their own performance in order for them to be able to influence the process and outcome of their own learning to read, as postulated by Durkin (1987).

Perhaps inspired by this phenomenon, Chen (2003) vehemently urges that, in the context of Taiwan, more attention should have been directly paid to how learners perceive themselves as readers, what knowledge they have acquired and how strategically they cope with breakdown of comprehension during the process of learning to read even though research on this area with EFL learners in Taiwan started to flourish in 2000. Furthermore, what is equally noticeable, though, is that few studies have focused on the metacognition among university learners especially regarding learning to read, according to empirical studies reviewed by Tsai (2005). In the meantime, scant attention has been paid to the students’ prior knowledge, cognitive strategies or metacognitive awareness and use of this in reading instruction (Tsai, 2008). More importantly, Zhang (2001) stated that, recently, research has focused on language learners’ metacognitive knowledge or awareness of strategies, and he also adds that “although strategy knowledge is an important component of meta-cognitive knowledge, few studies have given it specific in-depth attention” (2006, p. 201).

In, thus, focusing attention on this, an endeavour of this kind is viable for reading if metacognition involves strategy awareness and use, reasoning, conscious thought processes, the text read and the understanding of it (Davis, 1995); a lack of knowledge about reading strategies, their application to reading tasks, and how learners perceive themselves as readers are likely to be the main causes of their failure to understand reading passages in a meaningful way (Zhang, 2001).

1. 6 Research questions and aims

The major objective driving this study, as noted above, comes from the
researcher’s perception of the great importance of exploring this neglected area, particularly the gap related to metacognition and learning to read (knowledge and control) that Taiwanese university EFL learners possess with regard to the strategic process of learning to read. The study aimed to gain insights into the strategic processes that Taiwanese first year university EFL learners follow and to explore the relationship of such processes with metacognition, different reading proficiency levels and texts of different types: narrative and expository texts. This is to identify their metacognitive awareness and use of strategies and the relationship with proficiency levels and text types. The identification of such is to highlight the important role that metacognition plays in the strategic reading comprehension process and the relationship of such with different proficiency levels, and texts of different types for the instructors of reading to observe, and the English language learning curricula planners and designers to take into account in an EFL context like Taiwan, particularly related to the research site and other similar EFL contexts. The research questions posed for the current study are as follows:

- What reading strategies in learning to read did Taiwanese first year university EFL learners perceive and use to read English texts? And how did they use them?
- What reading strategies in learning to read did Taiwanese first university EFL learners of different proficiency levels perceive and use to read English texts? And how did they use them?
- What reading strategies in learning to read did Taiwanese first year university EFL learners of different proficiency levels perceive and use with narrative and expository texts? And how did they use them?

1.7 The rationale for the research design

There has been little qualitative research into Taiwanese EFL reading, based on the empirical studies reviewed by Chern (2006). In doing so, the research uses an
exploratory case study design within an interpretive paradigm because I do agree with Burner (1996) that the knowledge that learners themselves possess must be detected and explored in a more situated context, in which the strategies they themselves have internalized and used can be identified. In addition, multiple data collection methods such as think-aloud protocols and immediately retrospective interviews were used. The use of multiple-data collection methods contributes to the trustworthiness of the data and this practice is commonly called “triangulation” (Glesne & Peshkin, 1992, p.24). Rossman and Wilson (1985)’s viewpoint is that data from different sources can be used to corroborate, elaborate or illuminate the research question. The analysis involved a careful examination of the verbal reports, as well as numbers (the frequency counts and percentages of the strategy use, as included in the verbal reports), to give a complementary and comprehensive idea of how prevalent the thematic responses (metacognitive awareness and use of reading strategies in learning to read in relation to proficiency levels and text types) are by this group of participants (Taiwanese first year university EFL learners). The purpose of using numbers is therefore to generate meanings within this particular group of participants because numbers are amenable to qualitative research, just as meaning depends, in part, on them (Dey, 1993), especially for the recognition of patterns in a group of participants, even though it is the view of Scadelowski (2001) that numbers occupy a less prominent place in qualitative research.

1.8 The significance of the current study

First of all, metacognition can be shared among individuals because it explains the change in an individual’s approach to language learning activities and reflects a sense of being in control of one’s own learning (Bruner, 1996). Such a change in the development of an individual’s approach to language learning activities helps learners to stand back and observe themselves to see what they have learnt (metacognition), and
provides a base for the negotiation of meaning in the many different types of social interaction situated in a learning environment (Lehtonen, 2000). This interactional dimension helps learners to shape their regulatory learning activities in terms of metacognition (Gillette, 1994, as cited in Wenden, 1998). Thus, the pedagogic implications of metacognition in self-regulation are considerable if these learners are to be encouraged to develop autonomy, as they turn the classroom into a ‘strategic’ learning environment in which the teacher is responsible for awareness-raising activities related to learning to read in English so as to support the learners on their individual learning journeys and facilitate a programme of self-managed language learning activities regarding learning to read in English among them to be developed outside the classroom as well.

Secondly, the data collected will be used to analyze the differences between the metacognitive reading strategies used by these EFL learners of different reading proficiency levels. It is expected that, when their metacognitive awareness and uses of reading strategies for learning to read in English are uncovered or identified, the English reading teachers at the research site could have a growing awareness of the impact of this factor on how these strategies were used, and thus incorporate this element into their reading courses in order to diversify their techniques. Alternatively, the English reading teachers at the research site will be encouraged to teach EFL learners, regardless of their proficiency level, the metacognitive reading strategies identified. This is to improve their reading efficiency and assist them in developing their strategic reading processes of learning to read in English if they are to be independent, effective learners, which is based on the view expressed by Block (1986) that an awareness of what the readers were doing and what they understood allowed some of them to teach themselves.

Moreover, structurally regarded, the texts of the narrative and expository types are
believed to be closely related to reading comprehension because learners have been observed to employ different strategies while reading these texts to facilitate comprehension (Wu, 2003). In this case, how the two genres, narrative and expository texts, affect learners’ metacognitive awareness and use of reading strategies is worth examining if metacognition involves readers’ monitoring of whether the reading texts are successfully comprehended or coupled with active reading strategies that enhance comprehension (Dhanapala, 2010). Also, a study of this nature could inspire English reading teachers to think more of the strategies employed by English learners while reading the two genres, and the salient roles of the teachers cannot be underestimated. In particular, their understanding of what strategies learners of different reading proficient levels perceive to use and how they use them with these texts could bring significant changes as to how they approach the teaching of reading comprehension because the teacher must also, as a supplementary approach, plan and create “appropriate situations and activities in language classes so that learners use these rather neglected strategies” (Abdolmehdi & Mohammad, 2005, p.123).

Furthermore, the research into metacognition in L2 reading contexts still remains insufficient, especially for university level learners (Li and Munby, 1996). The broad picture could be filled out to some extent with the current research on L2 reading strategy and metacognition related to the context of Taiwan in order to make a contribution to the growing body of the relevant knowledge.

Finally, it is hoped that the results of the study will provide not only the university reading teachers in Taiwan but also other reading teachers in similar contexts, especially the first year undergraduate English teachers in the research setting, with a concrete picture of the metacognitive strategies utilized for learning to read that could guide and help learners to become competent, self-directed readers through a consideration of the relationship between the reading process and different proficiency
levels and text types. What is equally important, though, is that the results will be used as a source for cross-cultural examination as well, since “presently, the importance of the culture and context is becoming a significant feature of research in the field of learning strategies” (Baker & Boonkit, 2004, p.299).

1.9 An overview and organization of the current study

In this chapter, I have presented the scope of the study, the problem of the study, research questions and aims, the theoretical framework, and the rationale for conducting the research, including the associated assumptions. In addition, the purposes of the study and its expected significance have been introduced.

Chapter 2 details the context of the study including the educational system in Taiwan in general, the nature and philosophy of English language teaching and learning in relation to learning to read, and the context of teaching methods of English reading and the learning of English reading in a particular Taiwanese context. The intention of this is to describe the context and culture in which the learning of English reading and teaching methods of it are developed in order to further argue for the need for the promotion of the role of metacognition in reading strategy use in a particular EFL context like Taiwan, especially in the context of the current research.

Chapter 3 presents the theoretical background of the study. It is divided into four parts. Part 1 discusses the relevance of the cognitive perspective underpinning the current study and includes the basic constructs and concepts. This part of the review places emphasis on L2 learning and reading. It starts with the importance of learning to read as a problem-solving process within the cognitive perspective and emphasizes its relationship with learning strategies. It indicates that reading processes are similar to the processes of learning to read because these processes are believed to be cognitive and involve the application of strategies. Part 2 combines the ideas presented in part 1 and links them to the field of metacognition and reading comprehension in terms of the
strategies that learners use for learning to read from the broad concept of metacognition within the information processing model. This is further used to argue that the link between metacognition and the information-processing model can be made in terms of strategy application for learning to read. Part 3 explains the different factors believed to affect learners’ metacognitive awareness and use of reading strategies. Special emphasis has been placed on reading proficiency levels and a discussion of the text structures of the narrative and the expository type. Finally, in part 4, the review focuses on the strategy studies related to metacognition and reading comprehension with particular reference to different reading proficiency levels and text types. This is further to not only argue for the need for the current study but also shape its methodology.

Chapter 4 outlines the research methodology. This includes a description of the main modes of the inquiry and the rationale for adopting the interpretive paradigm in the current study. In turn, this is followed by an illustration of the design of the methods of the current exploratory case study. It is concerned with what, why, and how the data were collected and analyzed. This is with a view to answering the research questions posed for the study.

Chapter 5 presents a detailed analysis of the qualitative data obtained through the administration of the think-aloud methods and the immediately retrospective interviews served as the principal sources of data. The analysis involved the frequency counts and percentages of the strategy use, as included in the verbal protocols, as well as a careful inspection of the context in which the strategies were used to reveal how and why they were used in order to compare the differences and similarities between the strategies that learners of different reading proficiency levels used metacognitively with the texts of the narrative and expository types from the emic view. This was intended to give an idea of how common, prevalent, or unusual the thematic responses
(students’ metacognitive awareness and use of reading strategies in learning to read) are in a group of participants because numbers are integral to qualitative research, just as meaning depends, in part on numbers (Scadelowski, 200; Dey, 1993).

Chapter 6 connects and synthesizes the results derived from the descriptive quantitative analysis and qualitative analysis of the learners’ verbal reports in the think-aloud protocols and the immediately retrospective interviews to build up and reveal the learners’ metacognitive awareness and use of reading strategies in learning to read and their relationship with different proficiency levels and text types. The chapter also discusses the emerging themes with specific reference to the context of the study and in the light of the literature, providing comprehensive answers to the research questions posed for the current exploratory study.

Chapter 7 presents the implications of the findings of the study for the field of learning to read and metacognition within educational research in general and reading curriculum planning and design in particular. More specifically, the implications are particularly related to metacognitive awareness and use of reading strategies in learning to read with a consideration of the factors of different proficiency levels and text types in an EFL context like Taiwan at university level, with particular reference to the research site, and possibly for reading teachers in similar EFL contexts at university level both within and beyond Taiwan. This is followed by presenting the limitations of the study and suggestions for further research.
CHAPTER 2
Chapter 2  Research context

2.1 Introduction

This chapter is to provide relevant information about the context of the current study from the macro-level to the micro-level. The former refers to the cultural-specific educational system whereas the latter is concerned with the setting with particular reference to the context of the institute under research (Belz & Muller-Hartmann, 2003). Theoretically regarded, the interpretation of learning strategy is shaped and constructed by the context and culture in which language learning and teaching take place and develop, since the teaching methods and learning context can have a significant influence upon the strategies adopted (Scarcella & Oxford, 1992). Thereby, in order to understand the context of teaching methods and the learning of reading in a particular Taiwanese context, it is worth describing the context and culture where this is developed in order to argue for the need to promote the role of metacognition in reading strategy use in an EFL context like Taiwan, especially in the context of the current research. Finally, the English curriculum and other details about the university where the current research was conducted will be provided as well.

2.2 Role of English learning in Taiwan’s educational reform

In accordance with the trend of using English as a global language, there has been an expansion of learning and teaching EFL in non-English-speaking countries (Tarnopolsky, 2000), especially in North-East Asia. Taiwan, like many other Asian countries, is not immune to ‘English fever’ (Krashen, 2003). For example, English proficiency is considered as a reference for promotion, job hunting, and college applications. Taiwanese parents, who sense the important role of English in both Taiwan and the rest of the world, are inclined to believe that starting to learn English earlier will be beneficial to their children’s future English performance and career development (Hsieh, 2011)
At the school level, due to the importance of English, in 2001, the educational reform was introduced by the Ministry of Education (MOE) of the Republic of China in Taiwan in order to prepare the next generation for the challenges of the 21st century and enhance the English proficiency of nationals (Huang, 2009). The MOE announced that the teaching of English as a foreign language would be officially implemented from fifth grade on, starting from 2001; that is to say, from 2001 onwards, students have been required to start English learning in the fifth grade. Since then, English has become the most important foreign language taught in the educational system in Taiwan: a 6-3-3 tier system consisting of six years at primary school, three years at lower secondary school and three years at upper secondary school. Indeed, more than 80% of parents actually indicated the need for earlier English instruction for kindergarten-age children (Child Welfare League Foundation, 2002). At least half of the students currently enrolled in the primary schools in Taiwan have already been exposed to English instruction in kindergarten (Kung, Chen, Wang, & Chao, 2000).

At university level, according to Sommers (2011) in Taiwan Today, the educational reform in Taiwan increasingly shifted the focus towards the improvement of English language skills and, in 2002, English was given official status. English instruction was compulsory for university students and all first and second year university students have to take it an obligatory subject. In addition, universities in Taiwan use the General English Proficiency Test (GEPT) commissioned by the MOE, which meets the international standards of language testing, as a requirement for university graduation in order to demonstrate their English proficiency because of the importance of the role of English learning and its ladder to future success and career. The same is the case to university admission. The university where the current study was conducted was not immune to this trend and all first year students have to take the test before entering their second year at university.
2.3 Role of English reading in Taiwan’s educational reform

In 2001, a change in the traditional English education began and the emphasis changed to a focus on communicative ability. Although the focus was on the cultivation of students’ communicative competence by fostering the four skills, listening, speaking, reading, and writing, the significance of reading has still been acknowledged as the most important and has received attention in the educational reform (Huang, 2009).

Regarding the aspect of reading, in 2001, the MOE started the educational reform and hosted many events and programmes to cultivate the ability to read in English. The educational policies and reforms in Taiwan reflected scholarly and expert attention to reading ability cultivation. Teachers or language practitioners have to therefore be a ‘good reading model’ for their students. Examples include cultivating teachers’ competence and promoting all kinds of plans and events to boost the English reading ability of students (Ibid). In many ways, teachers and learners are now required to read and practise more in order to develop insights into their understanding of how to approach a literary text. On this basis, it can be inferred that, if teachers and students have to do so, this may heighten teachers’ awareness of the importance of the triangular relationship that exists between the text, the learner, and the teacher. Thus, knowing how students actually learn to read would be of great help in making teaching more effective.

2.4 Problems of teaching the English reading and learning course in Taiwan

The teaching method is, of course, an important factor that leads to success or failure. Teaching with poor quality techniques can have a detrimental effect on the students’ ability to read (Dechant, 1970). In Taiwan, many research studies have been carried out with Taiwanese students to assess how they process the printed pages to provide English language practitioners with the necessary knowledge about their
strategic process of reading in response to the traditional ways of teaching reading (Tsai, 2005; Tsai, 2008; Tsai, 2012; Li, Cheng & Chern, 2012; Yang, 2002; Yang, 2006). Nevertheless, in Taiwan, the English course still emphasizes the reading of literature and this is the Grammar-Translation Method (GTM), which uses rote memorization to master grammatical structures (Chia, Johnson, Chia, & Olive, 1999). It is, therefore, an inevitable result that most teachers still employ the traditional English language teaching approach when teaching a reading course (Chang & Wu, 2003). One reason for the attractiveness of this method in Taiwan is that it continues the neo-Confucian tradition which emphasizes reciting and memorizing and was developed in response to the manner in which Chinese speakers master their own language (Lin, 1995). This is reflected in the observation made by Ku (1995 as cited in Chang, 2004), who indicates that EFL learners in Taiwan are cast in a passive, productive role. Learners always practise the patterns provided by their teachers because they always closely follow the course book. Learners spend a lot of time copying and reproducing sentences written by others. For example, according to Chen (2012), at high school level, the most common EFL textbooks are from three major publishers—the Far East Book Company, San-Ming Co., LTD and Lung-Teng Cultural Co., LTD. The textbooks are reading-oriented. Students acquire reading comprehension through the articles in the textbooks and they learn vocabulary and sentence patterns as instructed because the content of these textbooks primarily consists of articles with exercises to extend knowledge of vocabulary and sentence patterns.

To be specific, reading lessons in Taiwan have generally been based on the system of translating each sentence, word by word, into Chinese rather than trying to read it as an English sentence, thinking about its meaning and evaluating its relationship with other sentences (Chang, 2004). The teachers inevitably regard teaching English reading as either a linear procedure or a routinized activity (Tsai, 2005). The former is
concerned with vocabulary teaching, grammar drills, and sentence-pattern practice. The latter refers to the students’ performance in reading tests and tasks. The importance of meaningful reading has been, thus, neglected. This phenomenon might be due to the fact that “it is not popular that teachers in Taiwan provide reading strategy instruction” and they seldom provide explicit instruction to learners on how to use comprehension strategies while reading (Tsai, 2008 as cited in Huang, 2009, p11). Unfortunately, the situation of such raises the main concern of Mohamed, Chew, and Kablian (2006) that this way of teaching results in students’ lack of metacognitive awareness of reading strategies and it obviously does not augment any meaningful engagement between the text and the learner, the learner and the teacher, or the text and the teacher. In other words, students’ lack of the knowledge of how they perceive themselves as readers, what reading strategies they can apply to assist their reading comprehension, and how they can be used, is believed to be the result of this (Tsai, 2008). In such case, Tsai (2005) has indicated that the Taiwanese students are inclined to regard reading passages as involving understanding every word and sentence written on the texts and that they cannot engage meaningfully in the semantic understanding or overall comprehension of them in order to use strategies such as their prior or background knowledge for successful reading comprehension because their teachers’ instruction might have a bearing on their metacognition.

Thus, in focusing attention on this, Tsai (2008) urges that the importance of metacognitive awareness of reading strategies should be recognized as an indispensable part of EFL reading, especially in the context of Taiwan because this construct in relation to reading comprehension deserves sufficient attention to be paid if metacognitive awareness of the strategic reading process refers to the knowledge and control students themselves possess and bring to plan how to read for their meaningful comprehension to occur.
2.5 The significance of metacognition in English reading in Taiwan EFL Context

Chen (2010) claims that reading is an important and effective tool for language learning, particularly in an English-as-a-foreign-language (EFL) context like Taiwan, when it comes to the concept of metacognition in reading. He thinks that this knowledge that EFL learners have can help them with the active selection of strategies related to reading, such as what strategies to use, why to use them, and how to use them. As a result of this, lots of reading studies that examined the decisive role of metacognition in EFL reading have been conducted (Wu, 2012; Chen, 2010; Hong, 2008; Tseng, 2008; Liang 2002; Yu, 2002; Chen, 2003; Hu, 2011).

At high school level, Wu (2012) investigated the effects of metacognitive awareness of reading strategy training (MRST) on junior-high-school students’ EFL reading. Her results revealed that MRST helped the students to perceive the importance of the higher-level processing skills in reading, monitor and regulate their reading processes, and enhance their awareness of effective reading strategies before, during, and after the reading process. All of the subjects in this study showed a positive attitude toward the effectiveness of MRST and expressed a willingness to apply the learnt metacognitive strategies in their future English reading. She suggests that the EFL language practitioners or teachers should avoid over-emphasizing word-decoding and translation instructions which are commonly-used methods in the reading classroom in Taiwan. They can guide students to utilize various strategies to enhance their learning of reading comprehension so they can monitor their own comprehension by selecting and organizing information and using the strategies of which they are aware. The concept of metacognition in learning to read among them can, therefore, be promoted to facilitate their own reading comprehension and guide them to become better and more effective readers.

At university level, Chen (2010) also acknowledges the importance of
metacognition in reading. He believes that, in an EFL context like Taiwan, university learners can either enhance or improve their reading comprehension if they use strategies actively. Based on the results, the Japanese foreign language (JFL) learners were more aware of reading strategies and used more of them than English foreign language (EFL) learners because the JFL teachers paid more attention to strategy instruction and taught how to use reading strategies meta-cognitively to promote effective reading comprehension. Thus, it is strongly suggested that teachers play a decisive role in metacognitive reading strategy instruction.

In summary, the above studies reveal that experts have paid attention to the field of metacognition in EFL reading in the context of Taiwan and that English reading teachers play a decisive role in the reading process and should be responsible for their students’ awareness of reading strategy utilization, not only at high school level but also at university level within the EFL context of Taiwan.

2.6 The profile of the university related to the current research

The research setting where the current study was conducted is located in central Taiwan. It is one of the private universities in Taiwan. It was founded in March 1990 because of the new phase of Taiwan’s economic development, based on the model of German industrial universities. The educational philosophy of this university rests on the initiatives of equal emphasis on theory and practicality, humanity and technology. Apprenticeship and collaboration between academia and industry are the two means to accomplish the goal of cultivating professionals with creativity and quality. This university started recruiting students through the Joint College Entrance Examination in 1990. Currently, there are nearly 10,000 students studying at the six colleges: the College of Engineering, the College of Design and Arts, the College of Management, the College of Foreign Languages, the College of Biotechnology and Bio-resources, and the College of Tourism and Hospitality.
2.7 The English curriculum of the university related to the current study

As noted above, the educational reform in Taiwan increasingly focused on the improvement of English language skills. Encouraged by this growing trend, most universities in Taiwan have aligned themselves with the MOE by using demonstrable English proficiency as a requirement for graduation. Like many other universities in Taiwan, the university where the current research was conducted is hardly immune from this trend. Hence, the university incorporated the graduation threshold into the English curriculum. In other words, passing the intermediate level of the preliminary GEPT is a graduation requirement, and the International Language Center (ILC) was commissioned by the university to take charge of this policy, which came into effect in 2000. Therefore, the intermediate level of the preliminary GEPT published by LTTC in Taiwan was used as the placement test. Immediately after the placement test, all freshmen were allocated into four different levels (the elementary level, intermediate level, high-intermediate level, and advanced level), based on their raw scores, and were then enrolled on the foundation course on English reading and writing based on their level. The students are exposed to a two-hour compulsory English Reading and Writing course, on either a Tuesday or Thursday, totaling 36 hours per term and 72 hours per school year. The course is test-oriented, as it is designed to fulfill the university policy.

In the academic year of 2011, the officially-selected course book for compulsory English was *English Connection* comprised of 20 units (Ward, Provencal, & Wilds, 2011), with each of the two semesters covering ten units. Also, the class system is rigid because the teachers are given a predefined syllabus to follow, based on the English curriculum. They have to teach one unit per week and finish teaching all of the units assigned to them within the required time to prepare the first year university EFL learners of all majors (except English) to learn English reading and writing effectively in order to pass the preliminary GEPT as the graduation requirement.
2.7.1 The significance of reading comprehension as metacognition in the fundamental English reading and writing course

As noted above, the course is test-oriented and the textbook is officially selected, so the content of the latter is reading-oriented. Because of this, each unit primarily consists of a topic-specific article with the reading comprehension questions related to the article designated and the exercises to extend vocabulary and sentence patterns. Students acquire reading comprehension through the articles in the textbooks taught in class and they learn vocabulary and sentence patterns, partly because it is important that all of the students can comprehend the articles, due to the course description, and partly because the questions in the mid-term and final exams are all taken from the textbook, based on the course description. Hence, based upon my observations, an example of how the reading class is taught in the context where the current research was conducted is as follows.

The teacher reads a passage aloud, sentence by sentence, and translates it into Chinese because English is used as a foreign language in Taiwan and it is widely used neither for communication nor as the medium of instruction in the educational setting (Chang, 2004). While listening to the teacher translating the text into Chinese, the students might note down the meanings of the difficult parts in Chinese or the Chinese meanings of the English words unfamiliar or unknown to them. The process continues until the end of the text. If there are any grammatical points or vocabulary that the teacher considers important or new to the students, the teacher always explains these in Chinese and gives an antonym or synonym of the vocabulary for them to extend their vocabulary knowledge. Afterwards, the focus shifts onto the reading comprehension questions and fill-in-the-blank vocabulary exercises.

Based upon the statements above, it is obvious that this approach associated with the GTM is developed in response to the manner in which Chinese speakers master
their own language because it emphasizes reciting, rote memorization, repetition, drills and reinforcement, to master grammatical structures (Lin, 1995). The result of this is reflected in the observation that the teacher, most of the time, in the current research context, puts the focus on grammar instruction, literary text and linguistic structure analysis to fulfill the course objective (a test-oriented course). They might overlook the fact that reading comprehension involves not only simply understanding words and sentences but also the complex integration of the readers’ prior knowledge with their metacognitive awareness and use of reading strategies (Li & Munby, 1996). On this basis, it can be therefore inferred that, in this learning context, students might have gradually internalized the concept that the reading process is simply information processing rather than meaning-based comprehension because they have been regarded as the passive recipients of instruction rather than the active participants in their own performance, if their learning is shaped and developed in the context to which the learners are exposed (Scarcella & Oxford, 1992). With this aforesaid problem in mind, Mohamed, Chew, and Kablia (2006, p. 23) state the following:

“A study of this nature might heighten teachers’ awareness of the importance of the triangular relationship that exists between the text, the learners, and the teacher, thus promoting them to pay more attention to meta-cognitive awareness and use of reading strategies to support learner’s comprehension of reading texts”.

Thus, the teachers’ knowledge of how students perform strategic reading and what strategies they use to process reading texts would be of great help in making instruction more effective and so support individuals in reading comprehension in a meaningful way, for metacognitive awareness and control helps students to think about the process (Zhang, 2001).

2.8 Conclusion

This chapter has attempted to provide the reader with a general picture of how the current research was shaped and motivated. The chapter deals with the context in
which this study is connected and elucidates why the nature of this study (metacognition in relation to learning to read) is important for teaching English reading and learning in an EFL context like Taiwan with particular reference to the research setting. Moreover, the chapter has also documented the changes and circumstances in relation to teaching the English reading and learning course in Taiwan in general and in particular in the research setting. These changes and circumstances highlighted the importance of promoting the role of metacognition in English reading and learning courses both within Taiwan in general and the research setting in particular. In the meantime, the following chapter is mainly devoted to reviewing the literature related to the present study. In this review, the cognitive perspective of learning to read in relation to learning strategies, reading processes and reading strategies in L2 learning are explained and analysed so as further to link this area with metacognition. Also, considerations will be given to the factors of proficiency level and texts of different types, and other literature and empirical studies pertinent to this study. This is for the considerations made for their relevance to the study aims to be drawn in order further to underpin the area of the research and this will be clarified in detail in chapter 3 below.
CHAPTER 3
Chapter 3  Literature review

3.0 Introduction

The current chapter is divided into four parts. Part one begins by discussing the different theories of L2 acquisition in order to argue that a cognitive perspective is the most relevant one for the current study in terms of the construct of L2 learning and reading, especially the information processing model. However, it should be noted that, although the primary orientation is a cognitive perspective, this is not to diminish the merits of other perspectives. This is followed by a section consisting of learning to read as a problem-solving process, clarifying the terminology used in L2 learning and reading, highlighting the importance and definitions of learning strategies in reading, classifying types of language learning strategies (LLSs), and justifying learning strategies in reading as a cognitive process within the context of cognitive psychology. This section ends by outlining reading strategies and the reading process in L2 learning because the reading process gives rise to the issue of reading strategies; EFL/ESL learners might use a number of learning strategies during their reading process (Baker & Boonkit, 2004).

Part two combines the ideas presented in part one and links them to the area of metacognition; specifically, how metacognition relates to the reading process and reading comprehension in L2 learning with particular reference to the link between metacognition and executive control within the information processing model in terms of the strategies used for learning to read. The rest of the review deals primarily with these aspects related to the features of metacognition and it includes the significance of metacognition in L2 learning and reading, metacognitive awareness in reading strategy and L2 learning, the role of comprehension monitoring as metacognition in L2 learning and reading, the relationship between reading skills and reading strategies in metacognition, metacognition among skilled and unskilled readers, and knowledge of
reading strategies versus metacognitive or metacognitive awareness of reading strategies.

Part three of this review highlights the importance of text structures or genres of narrative and the expository types and their relation to reading comprehension and metacognition regarding learning to read. The factor of reading proficiency level in relation to comprehension and metacognition in terms of learning to read will be furthermore stated.

Finally, part four of this review focuses on the empirical studies related to the current project with particular reference to not only the strategy studies on reading comprehension and metacognition related to learning to read but also the interplay between proficiency levels and text types in order to demonstrate the need for the current research.

3.1 L2 learning and reading strategies in learning to read as cognitive processes

3.1.1 Reading process and SLA theories

According to Long (1993), there are 40 to 60 theories within the scope of second language acquisition (SLA) and these are as diverse as they are numerous because of the terms used freely in much of the literature; that is to say, the word “theory” has different connotations used to symbolize its construct. The list includes theories, hypotheses, models, metaphors, frameworks, and theoretical perspectives. However, these can be grouped into the following three basic types: behaviourism, cognitivism, and constructivism. They differ in their perspectives and sources, drawing upon work in the fields of linguistics, sociolinguistics, psychology, psycholinguistics etc. They also differ in scope due to the range of data they attempt to explain: some explain naturalistic or instructed SLA; some explain a specific cognitive capacity, like knowledge about the cognitive processes (metacognition); some explain specific psychological process like transfer, restructuring or implicit learning; some explain a specific linguistic system,
like phonology, or lexicon; and some explain a specific sub-system, for example, word order, speech act, behaviour or interrogative structures. Therefore, this section will mainly discuss these three basic theories of L2 acquisition with the emphasis on the process of learning to read, with which the current study is primarily concerned.

3.1.1.1 Behaviouristic theory

From the 1960s and 1970s, influenced by the findings of L1 acquisition derived from the research conducted on the basis of behaviouristic theory, most associated with Skinner (1935), the learning process of L2 acquisition has been assumed to involve the same construct, consisting of “rote practice, habit formation, shaping, over-learning, reinforcement, conditioning, association, stimulus, and response” (Brown, 2000, p. 51). In other words, this construct views learning as the result of an event (the stimulus), the reaction to that event (the response), and the consequence of that response (Burton, Moore, & Magliaro, 2004). Through this process, learners modify their behaviour to obtain a favourable outcome. Based on this concept, thus, in language learning and teaching, learning is seen as being determined by external stimuli; correct learning behaviour is reinforced through the immediate correction of errors and praise of success (Roberts, 1998).

3.1.1.2 Cognitivism/ Cognitive theory

In contrast to the viewpoints outlined above, the cognitive perspective is associated with Piaget (1952). It was popularized as a response to behaviourism. Cognitivists criticised behaviourism for a difficulty in accounting for the higher order thinking skills and a lack of focus on the mind of learning (Ertmer & Newby, 1993). It is often associated with the information processing theory, which is concerned with the recall, storage, and retrieval of the information processed (O’Malley & Chamot, 1990). Although cognitive theorists also emphasize the importance of reinforcement in providing feedback about the correctness of responses, they view learning as involving
the acquisition or re-organisation of the cognitive structure through which humans process and store information (Good & Brophy, 1990).

3.1.1.3. Social cognitive perspective/ Constructivism

Another insightful view into human learning is the social cognitive perspective (constructivism), which is most associated with Vygotsky (1987). It argues for the importance of culture and context in forming understanding then constructing knowledge based upon this understanding; namely, what we learn and how we make sense of that knowledge depend on where and when we are learning. Learning is viewed as a result of a social process through which the learners themselves gain experience, knowledge, and beliefs concerning ‘learning how to learn’. For him, the focus is away from the teaching towards the learning situated in the environment since the goal of education lies in the facilitation of change and learning. Based on his theory of the Zone of Proximal Development (ZPD), a learner will be able to perform at a level beyond the limit of his or her potential with the scaffolding of a teacher or a more capable peer. With such scaffolding, the individuals become increasingly equipped with what they take to be independent, autonomous learners, so the scaffolding should be gradually dismantled (Yang & Wilson, 2006). Learning, to be effective, does not only take place within an individual, nor is it a passive development of behaviour shaped by external forces (McMahon, 1997). In other words, learning involves interpreting and understanding reality in a different way as well as comprehending the world by re-interpreting knowledge (Vygotsky, 1987).

3.1.1.4 The rationale for L2 learning and reading within the cognitive perspective

In order to set the current research within the relevant theoretical framework, the cognitive perspective (information processing model) seems to be the most relevant in terms of the construct of learning to read even though there is no doubt that behaviouristic and social cognitive learning theories have had a lasting impact upon our
understanding of the human learning process (Brown, 2000). The choice of this perspective was made for the following reasons. Firstly, compared to behaviorism, it puts emphasis upon the importance of the higher level human capacity involved in the act and process of knowing rather than a change in behaviour approached as an outcome, habit formation (Gagne, 1985). Secondly, cognitive variation in the act and process of knowing is emphasized much more than the social cognitive perspective because the latter has been criticised due to its strong emphasis on the social and interactive nature of learning. Due to the focus on the teacher and student interaction, thereby, other factors in the process of learning may be overlooked. Fox (2001, p. 30) criticises the concept of shared learning and states that:

“To focus on teaching as the shared construction of knowledge ignores the extent to which learning depends on independent practice and problem-solving and learning as the formation, or revision, of skills…as well as sharing knowledge, we have to make knowledge our own.”

With these statements above in mind, it appears that placing too much emphasis on the more capable learners or the teacher might deny the cognitive variations in learning to read across individuals. Also, although there can be no universal schema that explains the interaction between the internal and external aspects within individual language learners, cognitive theory (information processing theory) is arguably the most appropriate for the current study because learning to read can be regarded mainly as a series of cognitive processes (Anderson, 2005), and problem-solving activities through which learners themselves actively monitor and regulate their cognitive activities while reading and employ strategies for better comprehension when a breakdown in comprehending the text is detected (Garner, 1984). In other words, these activities involve metacognitive executive processes related to the information processing model (executive control) with particular reference to strategy applications within the concept of meta-cognition (Garner, 1987). Finally, and more importantly, according to Cobb
(1994), individuals and the social aspects of learning can interact over time to reinforce and strengthen each other in a reciprocal way; namely, the cognitive and social dimensions overlap and can work in tandem. Thus, from this point of view, it is arguable that, if these two perspectives can interact with each other, it might be better to examine the cognitive variations within individuals first during the act and process of learning to read because the knowledge accumulated from the learning process itself is received and actively built up by the learners themselves when they are receptive and adaptive to the organization of the experiential world during the learning process (Ernest, 1994). The uncovering of the cognitive variations within individual learners in the process of learning to read can therefore be postulated to enable learners and practitioners in the context to gain entry to a discourse of joint activities, and further, to turn the classroom into an environment where learning to read is a result of the social process between the teacher and peers via the reciprocal and spiral relationship among them if the reading process in L2 learning is internalized (Koda, 2005); the contribution of this process to the cognitive domain of human learning is of key importance in the acquisition of L1 or L2 reading (Zhang et. al, 2008).

3.1.2 Learning to read as a problem-solving process

The theoretical perspective of this study, as stated above, is the cognitive perspective in the process of learning to read. Such an assumption highlights the importance of the functions of cognition and those processes involved in the process of learning to read. Indeed, these special thoughts ‘within’ individuals, defined as cognitive activities, in which learners are engaged, are referred to as mental processes and their importance has been long recognized in relation to the L2 reading process (Gagne, 1985), as the process of learning to read is said to involve the interaction between the mental process activated by the reader while reading and the information extracted from the text read (Aebersol & Field, 1997). This concept implies that
learning to read is a problem-solving process because it involves learners utilizing strategies to tackle or solve the reading problems they encounter in particular contexts (Zhang et al., 2008). However, the various definitions and terms used by different researchers to describe the methods used by learners cause controversy in the field of L2 learning and this issue needs to be clarified further since that “the same term used in one study might have different connotations in another” (Zhang, 2003, p. 287).

3.1.3 Clarifying the terminology related to L2 learning and reading

Although the studies of language learning strategies (LLSs) have helped us understand language learners tremendously regarding the actions or behaviour used to manage an L2, the research literature shows considerable inconsistency in use of the terminology and a lack of the agreement on the definitions of the terminology is reflected in these definitions (Cohen, 1998). Therefore, this section aims to clarify the terminologies regarding the strategies, skills, tactics, techniques, and moves in relation to the field of L2 learning and reading.

Wade, Trathen, and Schraw (1990) investigated the spontaneous study strategies (metacognitive strategies) that L2 learners employed when studying a lengthy expository text. They defined the methods or behaviour of these readers in approaching this task as tactics rather than strategies. “Strategies”, defined as a general approach, consist of a collection of mental tactics employed consciously by students to facilitate the acquisition of information in a reading task. In contrast, the term “tactics” refers to specific study techniques employed by individuals to aid comprehension and they are thought to manifest the differences between the techniques used by individuals more effectively than “strategies”. For example, note-taking tactics consist of outlining, underlining, and circling key words or phrases, paraphrasing, and diagramming, but they are all categorized under spontaneous study strategies (metacognitive strategies). Stern (1983) uses both terms of “strategies” and “techniques” to depict the methods or
behaviour that language learners use for learning to read. However, a distinction between a strategy and a technique is made. The former refers to the general tendency of the approach, while the latter refers to the habits or detailed procedures regarding a specific aspect of language learning, such as looking up words in a dictionary, which illustrates a learning technique in reading. Carrell, Gadusek, and Wise (1998) distinguish a reading skill from a reading strategy. A “skill”, an acquired ability, has been automatised and is operated without direct consciousness, while a “strategy” is thought to be the action taken by a reader deliberately, to select and manage the activities in order to accomplish the desired objectives or particular goals of the learning process. Examples of reading skills include recognizing grapheme-phoneme correspondence or summarizing a story. In contrast, examples of reading strategies encompass skimming, scanning, re-reading, guessing from context, skipping unknown words, making predictions, etc.

Furthermore, in the study related to problem-solving tasks during the process of learning to read conducted by Sarig (1987 as cited in McDonough, 1995, p. 54), the term “strategic move” is used to symbolize the behaviour or techniques that readers utilize to assist them in approaching a comprehensive reading task during information processing. Examples of strategic moves are “identifying the propositions in the text, identifying the main ideas, and synthesizing the actual message” (ibid, p.54). Nonetheless, Cohen (1998), Schmeck (1988), and McDonough (1995) draw a distinction between these aforesaid terms in a broad sense. According to Schmeck (1988), the terms of “strategy” and “tactics” merely differ in terms of their definitions (p. 171). He argues that what language learners use in the learning process might be differentiated via a spectrum—from generality to specificity—due to the differences between individuals’ methods or behaviour. Namely, the term “tactics” is concerned with the specific activities in which the learners are engaged, and the learners
themselves make specific choices. Still, the term “strategy” is viewed as what the learners themselves tend to do in general during a problem-solving task. For example, “the strategy of conceptualizing consists of tactics—categorizing, comparing and contrasting categories, hierarchically organizing in networks, and abstracting” (p, 174). Likewise, a strategy can be referred to as a cluster of skills or techniques; namely, the disparities between strategies, skills, and techniques have been made in accordance with the hierarchy (McDonough, 1995).

In order to solve the controversy in relation to terminological inconsistency, Cohen comments that the solution to this “would be to refer to all of these simply as strategies, while still acknowledging that there is a continuum from the broad categories to the most specific or low-level” concerning L2 or foreign language learning strategies (LLS), regardless of the factor of either consciousness or sub-consciousness (1998, pp.10-11). Although I think this concept makes the problem of the definition easier to handle, the term “strategy” is used as the construct to specifically refer to the behaviour consciously employed by learners while learning to read to ensure the consistency in the terminology throughout this study, because strategic behaviour is usually meant to be conscious (Williams & Burden, 1997).

3.1.4 Definitions and importance of learning strategies in L2 reading

Either in the field of educational psychology or second language acquisition (SLA), learning strategies (LSs) play an important role and have been highlighted by numerous researchers (Cohen, 1998; Ellis, 1994). LSs have been defined as the operations or steps utilized by learners not only to make the acquisition, storage, retrieval, or use of information easy and successful during the learning process (O’Malley, Chamot, Stewner-Manzanares, Kupper, & Russo, 1985) but also to “make learning easier, faster, more enjoyable, more self-directed, more effective and more transferable to new situations” (Oxford, 1990, p. 8). They are also believed to be
applicable to learning to read (Baker & Boonkit, 2004). In reading situations, they are the procedures utilized by L2 readers to facilitate a reading task and make learning to read more effective in order to enhance reading comprehension and overcome reading failure (Singha, 2001). They constitute the mental process and personal preferences involved in the process of learning to read (Chamot, 2005) and are mainly about processing information in an effective way in order to achieve successful outcomes for language comprehension (O’Malley & Chamot, 1990). However, over the last twenty years, there has been a growing amount of research focusing on language learning strategies (LLSs). This work has been primarily concerned with investigating how learners go about the task of learning something and attempting to discover which of the strategies that learners use are the most effective for particular types of learning involved (Williams & Burden, 1997). It is, therefore, before embarking on the theoretical framework underpinning this current study (the broad concept of metacognition within the information processing model), imperative to discuss the taxonomies of strategies well-documented in the literature due to the different concepts and criteria used by different researchers to classify and group language learning strategies (LLSs).

3.1.5 Classifying types of language learning strategies

One of the earliest researchers in the field of strategies in English language teaching (ELT), Rubin (1975, p 43 as cited in Griffiths, 2004) provided a very broad definition as “the techniques or devices which a learner may use to acquire knowledge”. Rubin (1981, 1987 in O’Malley, Chamot, Stewner-Manzanares, Kupper, and Russo 1985) also identified a classification scheme These can be classified as either direct—for example, inductive inferencing, practice, and memorization—or indirect—for example, creating opportunities for practice and utilizing tricks for production. However, Wenden (1983a in O’Malley et al., 1985) suggests that these
two approaches may be synthesized and both taken into account to facilitate learning. Rubin’s (1981) classification scheme is balanced if the framework of meta-cognitive strategies provided by Wenden (1983a and 1983b) is added to it, because the strategies delineated by Rubin (1981) deal with the direct manipulations of the learning materials (cognitive strategies) rather than reflections on the process of learning or strategy applications (meta-cognitive strategies). In 1987, Rubin further developed and classified three types of strategies used by learners that contribute to language learning directly or indirectly. These include learning, communication, and social strategies. However, under production tricks, she included communication strategies, a controversial inclusion, since learning strategies and communication strategies are seen by some as two quite separate manifestation of language learner behaviour.

Somewhat later, O’Malley, Chamot, Stewner-Manzanares, Kupper, and Russo (1985) developed a distinctive taxonomy identifying 26 strategies divided into three main categories: metacognitive, cognitive and social. The metacognitive and cognitive correspond approximately with Rubin’s direct and indirect learning strategies. However, the addition of the social mediation category was an important step in the direction of acknowledging the importance of interactional strategies in language learning. According to them, the metacognitive strategies refer to executive processes used in planning for learning; monitoring one’s comprehension and production; and evaluating how well one has achieved a learning object. The cognitive strategies mainly deal with manipulating the material to be learned manually (as in making images; inferring meaning; or elaborating on previous knowledge) or physically (as in grouping items to be learned together, or taking notes). The social-affective strategies are primarily concerned with either interacting with another one to assist learning, as in cooperative learning or asking questions for clarification, or using affective control to assist in learning tasks.
Influenced by early research conducted on language learning strategies, Oxford (1990) synthesizes language learning strategies in general and groups these learning strategies into six categories related to the four language skills. The classification system includes the categories of meta-cognitive, affective, social, memory, cognitive and compensation strategies used by language learners. For example, they may manage their own learning processes through metacognitive strategies, such as paying attention, self-evaluating, and self-monitoring. They take control of their attitude by means of affective strategies, such as anxiety reduction and self-encouragement. They cooperate, work, and discuss with their peers, teachers, and others to learn the language through employing social strategies; for example, by asking questions with a view to becoming more culturally aware. They utilize memory strategies, such as grouping, imagery, and structured reviewing, to get information into their memories and recall it if and when needed. They put the new language into practice directly through cognitive strategies; for example, practicing in a natural way, having the language analyzed contrastively, and summarizing. They conquer knowledge limitations via compensation strategies, like guessing the meaning from the context intelligently and using synonyms or production tricks when the precise meaning and expression is unknown to them.

Although this taxonomy is considered the most comprehensive one in classifying language learning strategies (Ellis, 1994), the categories do overlap (Oxford, 1990). For example, the metacognitive strategy “planning” might also be considered as a cognitive strategy as it requires reasoning. In addition, the compensation strategy ‘looking for synonym’ is a learning strategy or may be a communication strategy. Even compensation strategies themselves have been discussed earlier to be similar to communication strategies mentioned by Rubin (1975). Moreover, some behaviour might indicate more than one strategy which makes assessing them difficult. In other words, according to Grenfell and Macaro (2007), “classification continues to be
miscellaneous and ad hoc” (p. 25). However, Oxford’s classification is still the base for all studies on learning strategies. Some add or modify it, but use it as the focus of the studies. Finally, the definitions and examples of the strategy types of the aforesaid taxonomies are included in appendix A to further illuminate their distinction.

3.1.6 Learning strategies in reading and cognitive theories

As mentioned earlier, learning strategies are about processing information effectively to achieve successful outcomes for language learning and there is a link between LLSs/LSs and information processing theory in cognitive science. As O’Malley and Chamot suggested in their work on LSs and SLA, “The role of learning strategies in the acquisition of information can be generally understood by references to the information processing framework for learning, (1990, p.17). Based on this framework, new information is stored in the short-term memory (STM) at the instant when it is acquired, i.e., the working memory which provides and holds a limited amount of information for only a short period. On the other hand, the long-term memory (LTM) has an unlimited capacity pertaining to how much and how long the information can reside there (Brown, 2000). Furthermore, Anderson (1983) indicated that most information is stored in the LTM as either procedural knowledge or declarative knowledge. The former is concerned with what we know about how to do something, such as driving a car, and is considered to be stored in the memory as production systems consisting of a series of steps that include a condition and an action. The latter refers to what we know or can declare, such as facts about people or places. Declarative knowledge is learnt more effectively by activating the prior knowledge and schemata stored in the memory’s structure. Procedural knowledge is most effectively learnt by practising a complex procedure that is both meaning-based and goal-oriented. Based upon this aforesaid concept, O’Malley and Chamot (1990) argue that LSs are the thoughts encapsulated in the cognitive processes that learners use to help to process
the information in print for better comprehension. Simply stated, learners tap into schemata related to the topic and call upon that information to aid them in their comprehension of that language through accessing the “declarative knowledge”, which is, in turn, used as the information to search for the most meaningful interpretation of the text via using inferencing or other skills (procedural knowledge) to fill in the information needed for the meaning construction in reading (ibid). Accordingly, these processes are believed to involve readers as learners forming meaning through the interaction of a variety of mental processes to work the text read at different levels in their processing the print for meaning comprehension in terms of the cognitive perspective via the application of strategies (Baker & Boonkit, 2004). Thus, the next section regards the reading strategies and reading process involved in L2 learning.

3.1.7 The reading process and reading strategies in L2 Learning

The research into L2 reading suggests that L2 learners tend to employ a variety of strategies to assist them with the acquisition, storage, and retrieval of the text information for reading comprehension (Rigney, 1978). According to Goodman (1996), reading can be regarded as a process whereby the primacy of decoding is emphasized or the centrality of meaning is axiomatic. These two views explain that reading comprehension is the product of two variables: decoding and comprehension (Zhang et al., 2008). The former is known as a bottom-up process, and the latter a top-down process. Decoding refers to the ability to apply letter sound correspondence rules when reading words; comprehension presents the process through which the components of language are understood; for example, words, sentences, and discourse, and decoding and comprehension do not develop in parallel (ibid). However, researchers (Eskey, 1988; Stanovich, 2000 as cited in Zhang et al., 2008) regard the decoding of the language of the text (bottom-up process) as playing a significant role in L2 reading comprehension although the top-down process is also necessary. Inspired by this, Stanovich added that
the reason why poor readers guess less accurately than skilled ones is that the latter in general have an accurate, automatic perceptual ability of word recognition so that they are not often compelled to make guesses, whereas poor readers have no choices but to guess, and their guesses are frequently short-circuited by their limited linguistic proficiency. In other words, there is a short-circuit effect for learners whose linguistic proficiency is too low to make efficient reading possible. The strategies include, for example, the accurate, rapid identification of lexical and grammatical forms, automatic word recognition, and the automatic recognition of sentence connectors, linking words, clause markers, and parts of speech to identify text details (Nation, 2001; Mackay, Barkman, & Jordan, 1979).

In contrast to this viewpoint, the ascendancy of the bottom-up model in reading has not been without drawbacks. Goodman (1996) posits that reading is more reader-drive than text-driven, arguing that the top-down process is essential for successful reading and that, in many instances, reading is a psychological guessing game between the text and the reader. Readers are, therefore, thought to evoke their existing schematic knowledge sources, such as word knowledge, past experiences, expectations and intuitions, so that they can predict and guess the text or use the data in the text to confirm or change their predictions or guesses so as further to comprehend or arrive at a meaning of the printed page (McDonough & Shaw, 1993; Weir & Urquhart, 1998). In response to this, researchers (Carrell & Eisternhold, 1983; Johnson, 1982) indicate that, to understand categories of words, sentence structures, and the entire text in detail on the printed page involves more than just relying on one’s linguistic knowledge because prior cultural experiences or background knowledge can prepare the reader for the comprehension of a text that is related to a familiar or unfamiliar topic. Also, the readers themselves can compensate for the deficiency in the size and range of vocabulary to strengthen their comprehension of the content of a text.
because the knowledge structure of a text (content schemata) becomes activated and is used for particular events and information when the “placeholders’ or “slots” are instantiated with particular information, which is either knowledge-related or literal-related (Kitao, 1989). The strategies involved are: note-taking, underlining keywords, skimming, scanning the information, making predictions, guesses, and inferences of the meaning and summarizing the text partly by means of context clues or a certain kind of background knowledge linked to the topic activated by the reader and partly by means of the pictures and illustrations linked to the topic, according to Aebersold and Field (1997). However, Eskey argues that it is vital for L2 readers to employ both kinds of strategy in order to become successful readers, since the reading process involves not only the decoding but also the non-decoding factors that contribute to reading success (1998, as cited in McDonough, 1995).

Finally, Anderson (2005) regards the reading comprehension process itself as a process of information processing. This processing consists of three stages: perceptual processing, parsing, and utilization. Perceptual processing functions as a screen through which the visual input from the printed page is attended to, which then directs the information to verbal information. This mechanism begins to process the text. The strategies involved in this process are, for example, decoding, fixation, and repetition. Real meaning-making happens at the parsing stage when the information being attended to is encoded for meaningful representation. More specifically, at this stage, readers use contextual information in order to build expectations about what they will read. During the parsing phase, readers use words and phrases to construct meaningful representations. They re-organize the information into a meaningful unit that can be stored in the STM. The input of the printed page that readers retain depends on several factors, including knowledge of the language, knowledge of the topic, and quality of the input upon which they impose. The strategies include predicting, inferencing,
translation, contextualization, and imagery. In the final stage of utilization, the readers draw upon their existing knowledge in their LTM to enhance the meaning and to store it for later use. In other words, readers probe their LTM to connect what they read with what they already know. Stored information is in the form of schemata and scripts, or interrelated concepts. Readers activate their knowledge of scripts to help them to anticipate what they will read. In much extended discourse, readers cannot clarify the intent of the message; they must therefore rely on the quality of their background knowledge. The strategies include relating to personal experience, summarizing, and re-construction. These three stages are interrelated or recursive and flow into each other in a dynamic, complex manner during any reading event.

3.1.8 Summary

In brief, the literature review above indicates that the reading process, similar to the process of learning to read, is believed to be a cognitive process and involve the application of strategies. “The reading process gives rise to the issue of reading strategies” and “EFL/ESL learners usually use a number of language learning strategies during their reading process,” as noted by Baker and Boonkit (2004, p. 303). The reading process involves learners as readers to assist them with the acquisition, storage, and retrieval of the text information processed to be comprehended by means of activating the materials, resources, efforts, and strategies available to decode or encode the printed page (Zhang et al., 2008). The reader forms the meaning of the text through the interaction of a variety of their mental processes to work at different levels to identify the meaning and grammatical category of words, sentence syntax, and text details (Aebersold & Field, 1997). Readers draw meaning out of the text based on their existing linguistic and schematic knowledge as well as the input from the text (Birch, 2002). These strategies used by L2 readers are believed to be cognitive processes because they involve readers accessing “declarative knowledge” to make sense of the
information related to the text, and in turn activate their “procedural knowledge” in order to construct a meaningful interpretation of the printed page while encountering difficulties in text comprehension via the execution of the strategies of which they are aware (O’Malley & Chamot, 1990). This therefore demonstrates that learners as readers have both knowledge and a self-control mechanism about their learning because they perceive themselves as readers, they know what types of strategies they execute, and how and why they use them in the reading comprehension process (ibid).

With this in mind, the research on the strategies used for improving learning to read in L2 has recognized the importance of the knowledge and control (metacognition) that individuals bring to their process of learning to read because the knowledge of such enables learners to transform their outward strategic actions which cannot be made available into observable ones (Zhang, 2001); namely, the learners themselves conceptualize, perceive and know what particular strategies they are, as well as when and where to use them for learning or problem-solving to promote self-control over the activity of either language learning or reading comprehension (Wenden, 1998). Thus, the following part deals with metacognition or metacognitive awareness in L2 learning and reading.

3.2 Metacognition or metacognitive awareness in L2 learning and reading

3.2.1 The significance of metacognition in L2 learning and strategic reading

Several studies have suggested that language learners have a definite knowledge about the ways of learning a language (Murray & Cotterall, 2009). This knowledge or awareness enables learners not only to ‘stand back’ but also to observe themselves in order to ameliorate effective learning and competent performance in any area of problem-solving (Block, 1992). This awareness, or metacognition, first coined by Flavell (1976), refers to “knowledge concerning ones’ own cognitive processes and products or anything related to them” and includes “the active monitoring and consequent regulation and orchestration of these processes in relation to the cognitive
objects or data on which they bear, usually in the service of some concrete goal or objective” (p.232). Simply stated, the concept of metacognition includes two basic components—knowledge and control. The former refers to one’s knowledge of cognitive resources and the latter refers to their regulation.

In the context of L2 learning and reading, O’Malley and Chamot (1990) also address issues inherent in these two capabilities involving knowledge about learning to read and the control or regulation of it (metacognition). The controlling of learning, as distinguished from the knowledge about learning, entails the use of learning strategies in reading. This knowledge, according to Koda (2005), also reveals how learners as readers understand and self-regulate their own thinking and reading processes to deploy the appropriate strategies self-consciously and thus achieve their reading comprehension goals because such knowledge mainly refers to readers’ ‘online decision making’ in regulating their reading actions and can reflect the readers’ cognition about reading and the self-control mechanisms they exercise when monitoring, regulating, and controlling text comprehension via the strategies selected and used. These are, as indicated by Singhal (2001), strategies that improve comprehension, which “indicate how learners conceive of a task, how they make sense of what they read, and what they do when they don’t understand…(This) is to enhance reading comprehension and overcome comprehension failures” (p. 1-2). Thereby, the next section deals with metacognitive awareness in L2 learning and reading strategy.

3.2.2 Metacognitive awareness in L2 learning and reading strategy

Metacognitive knowledge is classified into the following three characteristics: (1) person knowledge refers to the learners’ perception of themselves; (2) task knowledge demands knowledge about the purpose and task; (3) strategy knowledge is concerned with learners’ knowledge about strategies, what they are, when and how they are used, and why they are useful. Applied to the context of L2 learning and reading, the concept
has been successful because the process of reading task analysis is related to metacognition: the typology of person, task, and strategy knowledge in a reading situation, as noted by Wenden (1998), especially to detect how learners perceive themselves as readers, what types of strategies they use, and how and why they are used in terms of the concept of knowledge and control most often associated with metacognition. For example, learners’ knowledge (person knowledge) is the basis of their realization whether or not they are familiar with the topic of the text; in turn, task knowledge leads them to gain an understanding of how difficult the reading task demands are and then they can decide which strategies (knowledge of strategies) to choose in order to deal with the difficulty of the reading task through planning, monitoring, evaluating, checking and self-regulation (ibid).

McNeil (1987) added to the literature three processes related to the metacognitive awareness of the tasks at hand: (1) self-knowledge concerns learners’ perceptions and feelings about themselves as readers that affect their performance; (2) task knowledge refers to the understanding of when to use which strategies; and (3) self-monitoring conceptualizes the awareness of comprehension breakdown and the knowledge of how to deal with it. The learners’ own metacognitive knowledge about themselves as learners may include knowledge about how they perform certain types of tasks or their proficiency level. Knowledge about tasks may include task difficulty levels. For example, applied to reading, clearly, texts that are familiar are easier to comprehend than unfamiliar ones, and explicit sentences provide readers with clear, specific clues to which they can refer in order to reduce the text and so extract its gist and main ideas. Finally, self-monitoring in metacognitive awareness is concerned with the awareness of whether the comprehension is short-circuited, breaking down or absent in order to mediate the monitoring process by means of applying one or more strategy to correct the comprehension arrived at a conscious level.
Paris, Lipson, and Wixson (1983) also classified the processes related to metacognition into the following two aspects: knowledge about cognition and the executive or regulatory function (regulation of cognition). The first aspect consists of three components: declarative, procedural, and conditional knowledge. First of all, declarative knowledge is propositional knowledge, which means “knowing what”. A learner may know what a given reading strategy is; for instance, she or he may know what summarization and summaries are. Secondly, procedural knowledge is concerned with “knowing how” to take various actions and perform them. For example, Winograd and Hare (1988) stated that “knowing how” refers to “how to study, how to deal with analogies, or how to write summaries” (p.134). Finally, conditional knowledge is about “knowing why”. It is an indication of how learners perceive themselves as readers and understand the value and rationale of using a strategy and when to use it appropriately and effectively (ibid). Thus, conditional knowledge necessitates a reader judging whether or not a certain strategy is appropriate and working effectively.

In addition to knowledge of cognition, the executive or regulatory function which denotes a set of activities that assist learners in either controlling or mediating their own learning refers to the time when a “higher order process orchestrates and directs other cognitive skills” (Paris, Cross & Lipson, 1984, p. 1241). This notion of an executive skill is believed to be based upon the information processing model of human cognition (Brown, Bransford, Ferrara, & Campione, 1982 as cited in Carrell, Gajdusek, & Wise, 1998). In L2 learning, these processes are of specific relevance to both elements of knowledge and control in metacognition (Wenden, 1998). In reading, these skills are closely related to the planning, monitoring, testing, revising, and evaluation of the strategies utilized during reading (Brown &Baker, 1984). For example, Carrell (1987) asserts that the metacognitive awareness or knowledge of the actions related to self-regulation used in reading are designed to: (a) clarify the purpose of reading; that is,
to understand both the explicit and implicit task demands; (b) identify the important aspects of a message; (c) focus attention on the major content rather than trivia; (d) monitor the ongoing activities to determine whether a breakdown in comprehension is occurring or not; (e) engage in the comments of self-questioning in order to determine if the goals set are being achieved, and (f) take corrective action when a failure in comprehension is detected.

3.2.3 Summary

In brief, the literature review has indicated that metacognition involves both elements of knowledge and control from learners because it emphasizes the knowledge that they actively bring to their learning to read and how that knowledge enables them to activate their self-control mechanism so as further to plan, monitor, test, revise, and evaluate the strategies that they have deployed in a reading situation (Baker & Brown, 1984). These accounts are believed to be similar to those of the information processing model that emphasizes declarative knowledge and procedural knowledge as fundamental components of cognitive skills, for metacognition is linked with knowledge of cognition as well as its active monitoring and regulation (Resnick, 1983). In the context of L2 strategic reading and learning, the executive control within the information processing model shares a conceptual overlap with metacognition because it also emphasizes how learners are in charge of their cognitive resources (metacognitive knowledge) and the regulation or control related to them (metacognitive control) when they are given a goal-oriented reading task, especially for the execution of the strategic actions for better reading comprehension to occur (Garner, 1978). Thereby, the theoretical framework of the current study will be presented below, especially related to strategy use in reading to read.

3.2.4 The link between executive control and metacognition in use of strategy in learning to read

Metacognition is closely related to executive control because it is linked with the
active monitoring and regulation of cognitive processes in order to produce voluntary actions, such as strategy selection to achieve a particular goal, and represents the executive control system that many cognitive theorists have included in their theories, for example, the information processing model and metacognitive model (Fernandez-Duque, Baird, & Posner, 2000). Hence, the link between executive control and metacognition will now be clarified by means of a discussion on different metacognitive models comprised of several components sharing conceptual overlap with the information processing model in terms of strategies used for learning to read.

Based on Anderson’s (1985) cognitive learning theory, O’Malley and Chamot (1990) proposed that the strategies used by learners to learn a language are generally understood by reference to the information processing model. They are regarded as knowledge and stored in the LTM as either declarative knowledge or procedural knowledge. The former is concerned with knowing which strategies to use, while the latter is concerned with how, when and why to use the known strategies. In other words, strategies begin as declarative knowledge and operate as procedural knowledge with repeated practice because these perceived strategies are activated by a production system that involves the ability to monitor and control the cognitive information processing necessary to produce strategic actions. This production system consists of a series of steps that include a condition and an action, which involves an executive control mechanism to oversee the utilization of strategies to achieve a language learning comprehension goal. Strategy applications resemble production systems with a condition (IF) and one more action (THEN) clauses, as in the following example:

IF the goal is to comprehend a concept in a written text, and I know the concept is not at the beginning, THEN I will scan through the text to locate the concept (O’Malley & Chamot, 1990, p. 52).

It is therefore clear that if metacognition is closely related to executive control, as suggested by Fernandez-Duque, Baird, and Posner (2000), these aforesaid processes are
similar to the metacognitive executive process because strategy applications involve learners actively monitoring and regulating their cognitive process (metacognitive control) in order to use their strategies. In this case, if metacognition includes the executive control involving the active monitoring and regulation of cognitive processes, as discussed by Flavell (1992), readers are engaged in metacognition during the strategic process. That is because strategies that enhance comprehension or meaning-making are regarded as special ways of processing information and stored in the LTM as either declarative knowledge or procedural knowledge and they will not become conscious actions and steps unless they are instantiated by the learners deliberately and consciously to achieve a goal (O’Malley & Chamot, 1990).

Besides, metacognition includes knowledge and control and it refers to a broad spectrum of cognitive abilities, such as planning, estimating, and checking (Brown, 1978, as cited in Resnick, 1983), and knowledge about person, task, and strategy variables (Flavell, 1978, as cited in Resnick, 1983). Papaleontiou-Louca (2008) stated that most metacognitive knowledge actually concerns interactions between, or combinations of, two or three types of these variables. This, to illustrate a combination involving at least two variables of metacognitive knowledge about strategic use through metacognitive executive processes, can be exemplified as followed: if my goal is to memorize a new word, then I need to find out the meaning of it first (task knowledge: task characteristics that call for the use of the strategy); in order to meet the goal of memorizing a new word in the condition statement, I must find out the meaning of it by taking actions such as referring to a dictionary (strategy knowledge: when and why to use the strategy and which strategies are likely to succeed in achieving a specific cognitive goal). These accounts are again similar to the information processing theories that emphasize the declarative and procedural knowledge stored in the LTM as fundamental components of cognitive skills in order to achieve a goal-oriented task.
because of the following reasons: (1) the metacognition includes the executive function, in which a higher order process orchestrates and directs other cognitive skills (Resnick, 1983 as cited in Lipson, Paris, & Cross, 1984); (2) metacognitive knowledge does not differ fundamentally from other knowledge stored in the LTM, such as declarative knowledge and procedural knowledge (Papaleontiou-Louca, 2008); and (3) an effective strategy application may be activated as a result of a conscious, deliberate memory search (Flavell, 1979). With this in mind, the executive control system of Flavell’s (1979) metacognitive model resembles that of the information processing model because the task knowledge and strategy knowledge instantiated by learners are closely related to the production system of the information processing model, which prompts learners when to call for the use of a strategy and enables them to know why and how it is used via a condition or an action given for the execution of strategic actions. In other words, learners know when to use a strategy (knowledge about task) and why and how to use it (knowledge about strategies) rather than naming a list of the strategies because they are engaged in the active monitoring and control of their own cognitive process (David & Zohar, 2009).

Finally, another argument for a link between metacognition and executive control associated with the information process model can be made in terms of reading strategy use in learning to read for various reasons even though researchers in metacognition emphasize the knowledge that learners bring or fail to bring to learning situations and researchers working on the field of executive control emphasize the control that the learners bring or fail to bring; that is to say, their success or failure in orchestrating knowledge (Cavanaugh & Perlmutter 1982, as cited in Garner, 1987). This is because researchers on reading tend to discuss the interplay between knowledge and control (metacognition) in both areas, showing less concern for ancestry and greater concern for areas of interest (Garner, 1987). According to Garner (1987), these are as follows:
Both areas emphasize metacognitive knowledge because they stress the conscious accessing of cognitive resources;

Both areas stress strategies used by learners deliberately and conditionally;

Both areas involve the active monitoring and control of cognitive processes to achieve a goal.

In brief, both areas are concerned with how learners as readers actively monitor the reading process and regulate their cognitive resources when they detect a cognitive failure while learning to read even though metacognition emphasizes the knowledge that learners bring to the situation of learning to read for activating the self-control mechanism and executive control emphasizes the control that learners bring to orchestrate their knowledge (Cavanaugh & Perlmutter 1982, as cited in Garner 1987). Simply stated, both areas place emphasis upon the active monitoring and control of cognitive processes by learners as readers to achieve a goal by means of using strategies deliberately and conditionally (Garner, 1987). Thus, this current study adopts the broad concept of metacognition within the information processing model and applies it to the strategies used for learning to read.

3.2.5 Role of comprehension monitoring as metacognition in L2 learning and reading

As stated above, metacognition involved in the reading process includes readers’ regulation of what they know about their cognitive resources in order for them to detect contradictions in a text (Wise, Carrell & Gajdusek, 1991). This notion is related to comprehension monitoring (error detection) as metacognition because it involves the readers selecting specific strategies deliberately while processing and integrating the text to improve their comprehension in either their L1 or L2 (Yang, 2002). In L2 reading situations, in addition to fluency in word identification and decoding, competent reading requires ongoing monitoring and regulation in the form of strategic actions (Auerbach & Paxton, 1997; Carrell, Pharis, & Liberto, 1989; Wagoner, 1983).
Borkowski (1992) refers to this comprehension monitoring as self-regulation, arguing that the goal of self-regulation is to analyze tasks in order to select a problem-solving approach. Later, this self-regulation is used to monitor learning and adjust the strategy, if necessary. It involves periodically checking one’s comprehension before, during and after reading.

Yang (2002) describes comprehension monitoring as an individual’s ability to perceive the difference between the right and wrong text information while reading and to integrate new information with existing knowledge, for an individual’s “competence”, “control”, or “status” exists internally in their mind (p.19). She also draws an important distinction between comprehension monitoring as competency and the strategies used during comprehension monitoring processes, and warns against confusing the two. Competency in comprehension monitoring must exist within a person before she or he can in theory employ a specific comprehension metacognitive strategy. This competence is particularly crucial for enabling L2 readers to comprehend the texts being read effectively and efficiently, as they may have a more limited knowledge of vocabulary or grammar and need to decode the meaning of the text by adopting strategies. This competence equips them with a sense of whether the strategies have successfully overcome their reading problems or not (ibid). To illustrate this concept further, this competence helps to conceptualize and characterise readers as being either strategic or constructively-responsive, who either orchestrate or integrate their cognitive resources while reading (Pressely & Afflerbach, 1995). On this basis, the strategic process will not be activated unless the readers themselves are conscious and aware of their comprehension monitoring processes. This notion further shows an important relationship between skilled reading and strategic reading regarding comprehension monitoring as metacognition, for learners as readers must be able to be aware of their comprehension monitoring while reading before they can change from
skilled into strategic readers and vice versa (Carrell, Gajdusek & Wise, 1998). The next section deals with the relationship between reading skills and strategies in metacognition.

3.2.6 The relationship between reading skills and reading strategies in metacognition

Within the research domain of both L1 and L2 reading, the term “strategies” is used deliberately to refer to actions that the readers either select or deploy to achieve their desired goals or objectives (Johnston & Byrd, 1993; van Dijk & Kintsch, 1983), whereas the more traditional term “skills” may suggest the reader’s competence or passive ability, which are not necessarily activated (Carrell, Gajdusek, & Wise, 1998). Paris, Wasik and Turner (1991, p. 611) adopt a similar perspective on the relationship between “strategies” and “skills”. Skills refer to information processing techniques that are automatic, whether at the level of recognizing grapheme-phoneme correspondence or summarizing a story. Skills are applied to a text unconsciously for many reasons including expertise, repeated practice, compliance with directions, luck and naïve use. In contrast, strategies are actions selected deliberately to achieve particular goals. An emerging skill can become a strategy when it is used intentionally. This is echoed by Vygotsky (1978), who suggests that a strategy can “go underground” and become a skill. Indeed, strategies are more efficient and developmentally-advanced when they are generated and applied automatically as skills. Thus, there seems to a continuum between strategies and skills, for strategies are “skills under consideration” (Paris, Lipson, & Wixson, 1983).

Although there seems to be no clear agreement on the relationship between strategies and skills regarding reading, it is clear that learners themselves as readers must possess knowledge (awareness) about their cognitive activities, for example, reading tasks, so that the strategies used during their reading comprehension monitoring
process through the consciousness-raised and deliberative actions initiated by themselves can become automatized as skills and vice versa (Carrell et al., 1998). This argument makes it clear that readers’ awareness of their comprehension monitoring processes can manifest metacognitive knowledge about reading and reflect their own cognition regarding how they regulate their own cognitive activities related to any problem-solving tasks during the processes of learning to read via meta-strategic actions (Wenden, 1998). This is partly because Wenden (1986) argues that meta-cognition consists of a knowledge component and a strategic component, and partly because Mokhtari and Richard (2002, p. 249) state that “awareness and monitoring of one’s comprehension processes are critically important aspects of skilled reading”. They continue that such awareness and monitoring processes often referred to in the literature as meta-cognition can be thought of as the knowledge of readers’ cognition about reading and the self-control mechanisms they exercise when monitoring and regulating text comprehension (p.249). With the aforesaid in mind, it is therefore clear that the importance of awareness and monitoring processes as meta-cognition attaches to skilled reading deserves attention. The following section deals with metacognition among skilled and unskilled readers.

3.2.7 Metacognition among skilled and unskilled readers

Paris and Jacobs (1984, p. 2083) illustrated the differences between skilled and unskilled readers: “Skilled readers often engage in deliberate activities that require planful thinking, flexible strategies, and periodic self-monitoring. They think about topic, look forward and backward in the passage, and check their own understanding as they read. Beginning readers or poor readers do not recruit and use these skills. Indeed, novice readers often seem oblivious to these strategies and the need to use them”. This is in line with the view, expressed by Snow, Burns, and Griffin (1998), that skilled readers are deemed good comprehenders and they outperform unskilled readers in “their
use of general world knowledge to comprehension monitoring and repair strategies” (p.62). Simply stated, they approach a reading task with some general tendencies. For example, they are apt to be either conscious or aware of what they are reading; they seem to tend to know why they are reading; and they are able to handle and tackle the potential problems that arise while reading via the utilisation of tentative strategies in order to monitor their comprehension of textual information (Pressley & Afflerbach, 1995).

By contrast, unskilled readers are likely to be quite limited in their metacognitive knowledge of reading (Paris & Winograd, 1990). They monitor their memory, comprehension, and other cognitive tasks less often than skilled readers (Flavell, 1979; Markman, 1979). Researchers (Brown & Baker, 1984; Oded & Walters, 2001) also indicated that they are likely to focus on reading as a decoding process rather than a meaning-getting process, and generally process a reading text on the surface level. They are likely to be less aware of the contradictions and inconsistencies when understanding text (Snow et al., 1998) and they seem neither to notice nor realize that they themselves do not understand (Garner & Reis, 1981), and consequently fail to exercise self-regulation, monitoring, control and mediation during their reading comprehension process (Wagner & Sternberg, 1987).

3.2.8 Metacognitive or metacognitive awareness of reading strategies versus knowledge of reading strategies

Metacognitive awareness involves the awareness of whether comprehension is occurring, and the conscious utilization of one or more strategy to correct comprehension (Baumann, Jones, & Seifert-Kessel, 1993). For example, in the context of learning to read, metacognitive strategies are sequential processes that learners use to control cognitive activities; for example, quizzing oneself to evaluate whether one has understood a text, and ensuring that a cognitive goal has been met (Livingston, 1997).
These processes help to regulate and oversee learning to read, and consist of planning and monitoring the process as well as checking the outcomes of these activities (ibid). Therefore, simply possessing knowledge about one’s cognitive process of learning to read, especially related to strategies, without actively planning, applying, and revising the strategies aimed at the cognitive process, in order to do better at reading comprehension, would not be meta-cognitive. In other words, knowledge is considered metacognitive if it is used in a strategic manner after any cognitive failure in reading comprehension is detected by the reader in order to ensure that a reading goal is met (Danapala, 2010). Therefore, the terms ‘metacognitive awareness’ and ‘metacognitive strategies’ are used interchangeably here to refer to the same idea.

3.2.9 Summary

In summary, as noted above, readers as learners who have the knowledge and control (meta-cognition) about their process of learning to read are able to select and utilize appropriate strategies when reading. This strategic behavior assists their self-mechanism through which they have the capability to plan, monitor, control, regulate, and evaluate the end product of reading comprehension. This process of strategy section and utilization entails the continuum between engaging in a cognitive progress and regulating that cognitive process while monitoring comprehension. Perhaps inspired by this, the information from the related areas supports the idea that ESL/EFL learners are particularly able to reflect on the process of their cognitive and constructive response to reading comprehension and they read strategically and control actively by applying a variety of strategies for meaningful comprehension. Such information within the domain of reading comprehension has led to an increased emphasis on the role of metacognitive awareness of one’s cognitive process while reading (Alexander & Jetton, 2000). This is because the link between metacognition and reading for meaning-making is essentially an attempt to comprehend, and any
attempt to comprehend must involve the link between reading comprehension and monitoring process of such as metacognition for meaning-making (Brown & Baker, 1984). However, reading comprehension, defined as a complex process, is believed to involve the reader, the text, and the interaction between the reader and the text (Rumehart, 1977) and many factors are considered to affect it (Palincsar & Brown, 1984), including metacognitive awareness and the genre, structure, and content of the reading materials (Yildiz, Yildirim, & Ates, 2011). Thereby, the attention should be paid to ‘the text factor’ and reading comprehension if metacognition includes one’s understanding and control of one’s own cognitive process while reading, which in turn entails the use of reading strategies metacognitively to enhance the comprehension of the text (Carrell, 1998). The next part deals with texts of different genres.

3.3 Text genres in relation to learning to read

Text structure is generally defined as “ideas of a text interrelated to convey a message to the reader” (Meyer & Rice, 1984, p.319), relating to the order of the sentences, paragraphs and the passage as a whole and some ideas in the text that are more important than others. Generally speaking, texts are organized into two large categories: narrative and expository (Lipson & Cooper, 2002). In classroom settings, narrative and expository texts are the two genres commonly used (Wu, 2003). Taylor (1980) indicated how text structure influences reading comprehension. In fact, to understand how L2 learners comprehend texts, researchers have emphasized the need to study the differential contribution of text-based characteristics such as genre, text structure parameters, and textual markers (Geva, 1992; Camiciottoli, 2003; Carrel, 1985). Thus, two genres, narrative and expository, which are the most frequently used in classroom settings, are compared.

3. 3.1 Differences between narrative and expository texts

Narrative texts typically share a common set of features or structures called a story
grammar. Readers who understand how stories are organized can use this information to assist their understanding. When the features of narrative texts are “mapped”, readers often read and comprehend better and more easily. Following Lipson and Cooper (2002), all narrative texts have:

- A setting, either physical or psychological (time/place/mental state).
- Characters, the major players in the story.
- A problem or initiating event, something that gets the story started.
- Important events, related to the problem.
- An outcome or resolution, events or consequences that resolve the problem.

In short, Tonjes, Ray and Miles (1999) suggested that, generally speaking, narrative texts are based on life experiences and personal experiences, use dialogues and familiar language and are well-organized by using story grammar that includes a setting, theme, plot, and resolution to provide an aesthetic and familiar experiences.

In contrast, according to Tonjes et al. (1999), expository texts are organized differently than narratives because they are written for different purposes. We read expository texts to learn new information about a different point of view or to clarify confusion. They are written to inform, explain, describe, present information, persuade or compare, and particularly to engage readers with the inferential comprehension cognitively. Such a text is subject-oriented and contains facts and information, with little dialogue. Calfee and Curley (1984) describe how an expository text describes an event, person, or thing, presents a logical time sequence related to a factual event, or gives logical directions or steps, then to create persuasive arguments. Researchers have proposed various classifications of the logic relations in expository texts (Halliday & Hasan, 1976; Meyer, 1985). Among them, Meyer’s (1975) classification is considered the most comprehensive because she adds that an expository text has a hierarchical tree structure; namely, some ideas in the text are super-ordinate, while others are subordinate.
Her classification is based on the following five logical relationships within the expository text (Meyer, 1975):

- Collection illustrating common ideas or events tied together in a group.
- Causation showing the causal relationship (cause and effect) between ideas
- Response (problem and resolution) considered to be similar to causal relationships since a problem precedes a solution.
- Comparison pointing out the differences and similarities between topics.
- Description offering more information on a topic, such as attributes specifics, manners, or settings.

In brief, these five logical and rhetorical relationships lead readers to think about topics and thereby enhance reading comprehension of the expository text.

Kent (1984) and Graesser and Goodman (1985) also added to this and proposed the basic features that distinguish narrative from expository texts. According to Kent (1984), the four basic features include person reference, orientation, time, and linkage.

<table>
<thead>
<tr>
<th>Differences</th>
<th>Narrative texts</th>
<th>Expository Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person reference</td>
<td>First or third person</td>
<td>No necessary person</td>
</tr>
<tr>
<td>Orientation</td>
<td>Actor (agent)</td>
<td>Subject (matter)</td>
</tr>
<tr>
<td>Time</td>
<td>Accomplish in a time frame</td>
<td>No temporal focus</td>
</tr>
<tr>
<td>Linkage</td>
<td>Chronological links</td>
<td>Logical links</td>
</tr>
</tbody>
</table>


Based on his classification, a narrative text is about a story and usually has a third or first person who is referred to as the character, but expository texts are designed to communicate information on topics and need no personal reference. Besides, a
narrative text is agent-oriented and the character displays goals, motives, believes, traits, attitudes, and emotions; yet, expository texts are subject-matter-orientated and often in descriptive clauses. The third discrepancy between the two is the time frame. Time is not the focus in expository texts and authors use various tenses to explain, interpret, and present the subject matter. Narratives describe a story occurring in a particular period, using either past or present tense. Finally, narratives display the connections in chronological order: “Once there was…”, “one evening”, “first”, “then”, “finally”, and so on (p.235). Most expository texts are connected by logical links. For example, a topic sentence precedes the supporting sentences because they are used as the details to explain the topic discussed in order for the topic to be developed further.

In 1985, Graesser and Goodman also indicated the following eight differences between narrative and expository texts:

- **Suspension of Disbelief**
  
  Readers often assume that information in expository prose is true, judge it to be valid and hope to gain knowledge through reading. Conversely, they think that narratives are fictitious and do not constantly judge them to be valid.

- **Temporal and Spatial Referent**
  
  Narrative episodes take place at specific or fictitious times and places. In contrast, time and place in an expository text are generic.

- **Literate Prose versus Mother Tongue**
  
  Language usage in narrative texts is closer to conversation discourses and it is about personal experience. In contrast, an expository text uses language that is normally reserved for textbooks and other written documents.

- **Conceptual Structures**
  
  Episodes in narrative texts follow a chronological order, showing causal or goal-oriented relationships; however, the information in an expository text may not
allow any order and has more “descriptive conceptualization” (p.144).

- Number of Inferences

Readers make more inferences from narrative texts than expository texts “because more inferences are drawn from goal-oriented conceptualizations than cause-oriented and descriptive conceptualizations” (p.144).

- Communication Function of Prose

The primary drive of narratives is to entertain readers. In comparison, expository texts mainly aim to offer the truth.

- Rhetorical Features

In narrative texts, the writers adopt specific rhetorical devices such as suspense, surprise, and irony to entertain readers. The plot is considered to be preceded by a setting describing the time, place, and characters. In contrast, expository texts often provide the key information in the topic sentences with subordinate details supporting the main ideas to follow.

- Connectives, signaling devices, transitional words

In comparison with expository texts, chronological order is more important in narrative texts. Transitional phrases or words and signaling devices are essential for expository texts because they can help readers to keep track of the logical flow.

3.3.2 Summary

The section above is concerned with the different rhetorical structures between narrative and expository texts. The attention, therefore, should be paid to the link between readers’ metacognitive awareness and the reading strategies used with different text types for better comprehension to occur during the comprehension monitoring process if the text factors, including genre, structure, and content of the reading material, are believed to be closely related to reading comprehension (Yildiz, Yildirim, & Ates, 2011). Also, this process involves not just understanding words, sentences, or even
texts, but also a complex integration of readers’ prior knowledge, language proficiency and their metacognitive strategies (Hammadou, 1991). Hence, the next section focuses on the empirical studies related to metacognitive awareness and use of reading strategies in learning to read with reference to reading proficiency levels and text types.

3.4 Empirical studies on metacognitive awareness and use of reading strategies in learning to read with regard to reading proficiency levels and text types

The research on reading strategies and metacognitive awareness dates back to a classical study conducted by Hosenfeld (1977), who paved the way for most reading strategy research related to either participants’ L1 or L2 in SLA. Since then, researchers have started to focus on not only the product of reading comprehension but also the cognitive and metacognitive processes involved in the process of learning to read for a better understanding of the strategic reading comprehension process, which is undetectable through the traditional test among different readers. Thus, a review of the major studies related to metacognitive awareness and use of reading strategies in learning to read in EFL/ESL contexts (see Introduction chapter for the distinctive definitions of both terms) will now be presented below, with consideration of different reading proficiency levels and text types. This part of the review is to demonstrate the need for the current research study and to shape the methodology that follows.

3.4.1 Metacognitive awareness and reading strategy use of ESL learners

The research conducted by Li and Munby (1996) aimed to provide a picture of the metacognitive strategies used by two Chinese graduate students who were defined by the authors as successful ESL learners at university level while they were studying at Queen’s University. They used in-depth interviews, think-aloud sessions, and journals as the principal sources for collecting data about which metacognitive reading strategies these two participants employed when processing academic materials in English. The results revealed a number of idiosyncratic metacognitive strategies that
these participants used, including:

- Translation: using their L1 as a base for understanding or producing the L2.
- Use of background knowledge: using personal and general knowledge to associate with the text being read.
- Self-questioning: questioning oneself while reading to check understanding.
- Guessing unknown words or phrases and predicting text content: using contextual clues to predict and guess and skip unknown words that were not considered essential to overall comprehension.
- Paying attention to topic sentences: providing the ‘gist’ of the paragraph being read.
- Picking out key words: paying attention to the words that are important to connect them together into the ‘chunk’ of information for better understanding.
- Comparison and contrast to the L1 knowledge domain: readers seeing the differences and similarities between their L1 and L2 knowledge in order not to misunderstand the context.

The use of these strategies showed that the participants were able to vary their reading strategies in order to plan, monitor, control, evaluate, and re-mediate their comprehension while reading, according to how well they understood the material and how difficult it was. The findings contributed to the argument of Grabe (1991) that readers have to employ a wide range of strategies in order to read efficiently, and echoed that of Block (1992) that the active nature of English L2 reading involves the reader using appropriate metacognitive strategies for effective comprehension through self-regulation. However, the findings would have been more enriched and diverse if readers of less English proficiency had been considered, since their strategy knowledge and use may differ due to their reading proficiency level (Koda, 2005).

Additionally, Sheory and Mokhtari (2001), for instance, examined differences
between the awareness and reported use of reading strategies of native and non-native English speakers when reading academic materials. The participants were 302 college students (150 native-English-speaking US and 152 ESL students), who completed a survey of which readings strategies readers report using when undertaking academic reading tasks. The results showed, first, that both the US and ESL students displayed an awareness of almost all of the strategies included in the survey. Secondly, both groups attributed the same order of importance to the categories of the reading strategies included in the survey, regardless of their reading ability or gender: cognitive strategies (the deliberate actions readers take when comprehension problems arise), followed by metacognitive strategies (advanced planning and comprehension monitoring techniques), and supporting strategies (the tools readers seek out to aid comprehension). Thirdly, both the ESL and US high-reading-ability students displayed comparable degrees of higher reported usage for cognitive and metacognitive reading strategies than lower-reading-ability students in the respective group, and while the US high-reading-ability students appeared to consider support reading strategies to be relatively more valuable than the low-reading-ability ones, the ESL students attributed a high value to supporting reading strategies regardless of their reading ability level. Lastly, in the US group, the females reported a significantly higher frequency of strategy use. Despite its importance to the current study, the aforementioned study failed to investigate the extent to which the use of strategies influenced the students’ successful completion of the reading tasks presented to them, which would have provided full and richer data concerning the strategies investigated. Simply knowing which strategy to use is not enough because this cannot reveal what readers actually do while actively reading (Karbalaei, 2010). It is therefore important to recognize that use of survey to investigate actual strategy use could result in invalid data because the participants may have used certain strategies that were not available in the options but
were forced to choose only the strategies available in the survey.

Moreover, Kletzien’s (1991) study investigated which reading strategies 48 US high school ESL students of average ability, divided into two equal groups of good and poor comprehenders, used with three expository passages of increasing difficulty during their meta-cognitive process. The former read the original passages; the latter read revised versions of these so that the passages would be of the same relative difficulty for both groups. In each passage, the participants were requested to fill in the blanks left by randomly deleting 12 content-dependent words. They were asked to explain their reasoning processes for these cloze responses, and their explanations were analyzed to identify their comprehension strategies. All students reported relying heavily on using key vocabulary, re-reading, making inferences, and using previous experiences when constructing responses to all three passages. In addition, the readers used more organizational strategies, recognising passage and sentence structure, for the passage of medium difficulty, compared with the other two passages. Total strategy use declined among poor comprehenders as the texts became more difficult. Good comprehenders used more strategies during the easiest passage; however, their strategy use was the same for both the medium and difficult passages. Both groups utilized the same type and number of strategies during the easy passages but, as the difficulty increased, good comprehenders used more types of strategies and used them more often than poor comprehenders. Although the study focused on the strategies reported while reading three expository passages of increasing difficulty, none of the interplay between the strategies used and their relationship with the text structure of the expository text was discussed. On this basis, this study could have benefited from the results, if the interplay between the strategy use and the text structure of the expository type had been taken into account. This is in order to give a full and rich data regarding the reading strategies investigated.
3.4.2 Metacognitive awareness and reading strategy use in EFL contexts

Mo’nos (2005) explored the metacognitive awareness of reading strategies among a group of Hungarian university students majoring in English in order to offer suggestions about developing a reading skills improvement programme. Eighty-six first and second year students participated in the study and were asked to complete the Survey of Reading Strategies of Hungarian College Students, with the aim of determining the type of reading strategies that these respondents reported using when reading academic material in English. The findings showed that these participants demonstrated a fairly high awareness of all of the strategies included in the survey and had a preference for problem-solving strategies, followed by global and support strategies. The factors of gender, self-rated reading ability, and time spent on reading correlated with strategy use awareness. Female students who rated themselves higher on the reading ability scale and those who reported spending 7-9 or more hours a week reading study-related materials showed significantly higher levels of strategy use. These findings confirm the gender effect and pattern of strategy use identified by various other studies.

Nonetheless, when reading ability was measured by a different instrument, an objective reading test, about 30% of the respondents with a high meta-cognitive awareness and a correlating high self-rated reading ability proved to be unsuccessful/poor readers. This study revealed that relying solely on a single method of data collection weakens and questions the internal validity/credibility of the findings derived. These findings would have been more valid or credible if other data collection methods had been considered, such as in-depth or retrospective interviews, observation, learning journals, and think-aloud techniques, to triangulate the results obtained from the survey. As Baker and Brown (1984) point out, attention should be paid to what, how, when, and why the strategy is used. They assert that meta-cognitive strategic knowledge
seems to precede strategy use due to the fact that “knowing that” (declarative knowledge) is different from “knowing how” (procedural knowledge), and that the knowledge that a particular strategy is useful (awareness) precedes its routine use, which in turn precedes the ability to describe how it is used.

With particular relevance to this current study, which is set in an EFL context like Taiwan, Zhang (2001) investigated whether or not a link existed between readers’ EFL proficiency level and their meta-cognitive knowledge of reading strategies in learning to read. Ten Chinese EFL readers selected from a sample of 312 participants were divided into two groups equal in number. A semi-structured interview guide was designed, mainly in Chinese. This was administered to them to elicit their metacognitive knowledge of strategy use within Flavell’s (1987) framework. Some of the questions were posed directly to the subjects, while others were formulated following a preliminary analysis of the data. He found that the reading strategies that the students employed during their reading process were related to the variables of person, task, and strategy, proposed by Flavell (1979& 1987). The strategies differed according to the readers’ EFL proficiency levels. The high-scorers reported using more frequently the following strategies: (1) anticipating text contexts, (2) monitoring comprehension, (3) stating a lack of background or schema knowledge, (4) skimming for main ideas, (5) guessing the meaning from the context through inferences, and (6) asking for help for clarification. By contrast, the strategies that the low-scorers employed frequently included: (1) translating into L1, (2) acknowledge a lack of lexical resources, and (3) using dictionaries more frequently. He concluded that both linguistic knowledge and strategy knowledge are important; however, he only focused on the strategies reported being used and it would have been better if think-aloud had been considered as the principal data sources to uncover the cognitive and meta-cognitive processes involved while reading since “readers’ strategy knowledge, however, may differ from their actual
use of strategies in a reading situation” (Kletzien, 1997, p. 70).

Furthermore, Yayli (2010) investigated which cognitive and meta-cognitive reading strategies Turkish university students majoring in English language teaching used with texts of the narrative and expository type during their reading comprehension monitoring as meta-cognition in an EFL context like Turkey. Twelve students were involved, divided into two equal groups of high and low proficiency readers. Qualitative data were obtained through the think-aloud and retrospective protocols in order to elicit data on their strategy types and the frequencies of these. The results revealed that both groups used similar cognitive and metacognitive strategies while reading but the HPRs in general used strategies more frequently from both categories for both texts. The LPRs tended to focus on the surface structure when faced with difficulty in comprehending deep-level semantic relations. Also, the data revealed the differences in use of the strategies with the narrative and expository texts. Grammar words such as conjunctives and connectives are more important in expository rather than narrative texts because the former includes fewer semantic relations leading to coherence than the latter. This indicates attention being paid to the relationship between strategy use and text genres or structures if the text structure of either expository text or narrative text has an evident impact upon how strategies are used with them.

By the same token, Mohamed, Chew and Kabilan (2006) sought to determine the awareness and use of metacognitive reading strategies utilized by good Chinese readers who use relevant strategies to comprehend English texts. Purposive sampling was used to select 100 learners to take a reading comprehension test. The subjects were labeled good, moderate, and weak learners according to their raw scores on the test. Only the top 20 students were identified and selected. The Survey of Reading Strategies Questionnaire (SORS), developed by Mokhtari and Sheorey (2002), was administrated to these subjects to determine not only their metacognitive awareness
and use of reading strategies but also the strategies used by them the most frequently via using a 5-point Likert Scale ranging from 1 (“I never do this”) to 5 (“I always do this”). This was for quantitative analysis. Also, qualitative data were gathered from structured interviews with the five of the 20 subjects who achieved the highest scores on the test. Content analysis were used to interpret and analyze the data of the structured interviews not only to get in-depth feedback on whether the subjects were aware of and employed metacognitive reading strategies to facilitate their comprehension but also to obtain their accounts of how, and why they were used in the situations needed. First of all, the quantitative findings revealed that only four of the 20 subjects (20%) displayed a high awareness of these strategies and were categorized as the high strategy users. Most of the subjects (80%) were moderately aware of these strategies, and are categorized as the moderate strategy users. However, none demonstrated a low awareness of meta-cognitive strategies. Besides, as to the three subcategories of the metacognitive reading strategies, global strategies, problem-solving strategies, and support strategies, the findings showed that good learners exercise problem-solving strategies the most, followed by global strategies, but none of the subjects were found to be the high users of support strategies. Secondly, the findings of the interviews conducted with five of the top 20 subjects indicate that they understand and know which metacognitive reading strategies to use, when, and why. The situations where the metacognitive reading strategies were used include: (1) activating background knowledge, (2) re-reading and going backwards if needed, (3) re-reading the text and re-examining what was read earlier, (4) making guesses while reading, (5) using contextual clues, (6) scanning and skimming for the main ideas, (7) predicting the meaning of phrases and words while not understanding the text, (8) looking at tables, graphs, and charts to aid reading comprehension, (9), looking for headings, subheading, or summaries, if provided, to get a general idea of the text
before reading, and (10) consulting a dictionary to look up the unfamiliar words encountered, if necessary. These strategies are related to the global, problem-solving, and support strategies. However, although the data from the interviews were used to support the findings from the quantitative results and showed that these learners demonstrated a high awareness of which metacognitive reading strategies they use, when, and why, according to different reading situations, this only indicates that the learners’ actual use does not represent their knowledge and vice versa. This study could have been more transparent and lucid if the think-aloud method had been used as a complement as it is thought to reflect this phenomenon the best—to determine learners’ cognitive and metacognitive awareness processes involved in their reading situations (Singhal, 2001).

3.4.3 Comparing the metacognitive awareness and reading strategy use of L1 and L2 learners

Block’s (1986) study was designed to compare the reading strategies used by nine non-proficient university freshmen (three native English speakers and six ESL students) who were enrolled on remedial readings courses during the hidden process of learning to read at university level. She used a think-aloud procedure to reveal the cognitive behaviour in processing two academic passages, taken from a psychology course, with the rate of ninth-grade readability. Their responses were classified by response modes and strategy types. The strategy types within the extensive and reflexive modes included: (1) making predictions or inferences, (2) using personal knowledge, associations or experience, (3) connecting new information, (4) the recognition of text structure, (5) questioning the information, (6) verifying and monitoring comprehension, and (7) having the information integrated. Regarding the reflexive mode, “readers relate affectively and personally, direct their attention away from the text and toward themselves, and focus on their own thoughts and feelings rather than on the
information in the text” and “they intend to response in the first or second person” (Block, 1986, pp.471-72). In contrast, in the extensive mode, “readers attempt to deal with message conveyed by the author; their focus is on understanding the ideas of the author, not relating the text to themselves, and they tend to respond in the third person” (ibid, p.472). Interestingly, ESL readers did not appear to use strategies or patterns of strategies that were different from those of native speakers of English. The same applied to the response modes. However, although Block’s (1986) study was intended to understand the hidden thoughts in the readers’ minds, it seemed limited to meta-cognitive strategy use without any explicit discussion of their awareness of strategy use, especially for the strategies of “comment on behaviour or process”, “monitor comprehension”, and “correct behaviour”. That is because none of these is mentioned in the results section in relation to reading proficiency. This study could have benefited more from the results if this aspect had been taken into account, for the reading process itself reveals the readers’ idiosyncratic use of strategies (Li & Munby, 1996).

Hosenfeld’s (1977) study compared 20 successful and 20 unsuccessful ninth grade students’ use of reading strategies in learning to read in French as an L2. More specifically, Hosenfeld examined their hidden cognitive behaviour in processing written texts by asking the participants to report in their L1 whatever came into their mind while processing each sentence in the L2 text. The conclusion was drawn that successful readers kept the meaning of the passage in mind while reading, skipped unimportant words, read between the lines or in broad phrases, relied on the context to determine word meaning, and are thought to have confidence in themselves as readers. In contrast, unsuccessful readers translated sentences and lost the general meaning of the passages, seldom or even rarely skipped words, looked up unknown words in a glossary, and had a poor self-concept as readers. The results clearly show that the
strategies used for text-processing were classified into word-solving strategies and meaning-based line strategies. However, Zhang et al. (2008) pointed out that the relationship between the strategies utilized and the comprehension of specific texts or paragraphs as a whole was unclear. This necessitates attention being paid to the unattended gap in order to consider the relationship between the strategies used and the specific texts or paragraphs during the process of comprehension monitoring.

Carrell (1989) investigated the difference between L1 and L2 metacognitive awareness and strategy use in reading. The participants consisted of 45 native speakers of Spanish and 75 native speakers of English. They were grouped into two groups based on their level of reading proficiency. The Spanish-speaking group comprised 45 students (8 at level 3, 20 at level 4, and 17 at level 6 enrolled in a university composition class), while the English-speaking group consisted of 75 students (23 at level 3, 39 at level 2, and 13 at level 4 enrolled in university grammar and composition class). Meta-cognitive questionnaires and texts written in their L1 and L2 were used as the principal sources for the data collection. In each session, the subjects first read two texts in the language in question and answered ten multiple-choice comprehension questions about each one, then responded to the meta-cognitive questionnaire about reading in that language. The questionnaire was used to elicit and tap into their meta-cognitive awareness of, and judgments about, silent reading strategies in both their L1 and L2. The results showed that there was some difference between the strategy perceptions associated with good L1 readers and those associated with good L2 readers. The results indicated that, in L2 reading, strategy monitoring is significantly related to reading performance. She pointed out that L2 readers with a better English proficiency level favoured global processes (top-down); for example, those connected with background knowledge, text gist, and textual organization; whereas the less proficient readers used more localized processes (text-bound), for example, those connected with
word meaning, sentence syntax, and text details. Although Carrell herself pointed out that ‘these meta-cognitive results are to be taken as suggestive rather than definitive’ (ibid, p. 128), these findings contribute to our understanding of what L2 readers know about their own reading strategies and what makes their reading difficult, especially the idea that strategy use is related to language proficiency level in general terms. More importantly, the different proficiency profiles of the two groups clearly played a major role in the different kinds of strategies they acknowledged. It would, however, have been instructive if Carrell had compared the results between groups of different levels rather than within groups because this would have allowed a direct comparison to be made between their normal strategy use and the present breakdown of their strategy use.

Jimenez et al. (1996) investigated the meta-cognitive knowledge and strategies of 14 bilingual Latino students, including successful English readers (11) and less successful English readers (3). Qualitative data were obtained from the think-aloud sessions and general interviews. They were asked to read narrative and expository texts written in both languages, English and Spanish, for data elicitation. The key findings revealed that, on the global level, the successful Latino ESL readers invoked their prior knowledge about a topic, made predictions, asked questions, confirmed or disconfirmed their beliefs, or used the text structure to organize their ideas. On the local level, the readers tackled the unfamiliar words and worked them out based on the linguistic context by using cognates (English versus Spanish) and their knowledge of other similar words in English. The readers also analyzed the sentences and broke them down into small units or chunks to identify phrases or words that were familiar or comprehensible. In contrast, the less successful English readers were unsure about how to resolve their reading problems when faced with a breakdown in comprehension even though they often monitored the problems. Also, they did not know how to use their knowledge of Spanish to enhance their comprehension of English texts and vice versa. However, this
study failed to analyse and discuss how texts of the expository and narrative types interacted with the participants’ meta-cognitive knowledge and strategy use even though the researchers used text analysis to rate the coherence and completeness of the passages’ retelling, as dictated by the students, in order to double check any comprehension problems that surfaced during the think-alouds. The findings would have been more instructive if the researchers had compared the differences between the meta-cognitive strategies used with text types across different proficiency levels.

3.4.4 Comparing metacognitive awareness and reading strategy use of EFL and ESL learners

Karbalaei (2010) investigated whether there were any significant differences in the metacognitive reading strategies EFL and ESL college students perceived and used while reading academic materials. One hundred and ninety undergraduate students (96 Iranians and 93 Indians) were involved in the study. To that end, both groups completed a 30-item MARSI Questionnaire. The results showed that both groups exhibited almost similar patterns of strategy awareness and reported usage when reading college-level materials in English, although they were studying English in quite different sociocultural environments (EFL vs. ESL). Regarding the differences between the groups, the Indian students reported using most types of strategies more often than did their Iranian counterparts. Also, the Indians reported using almost all the strategies included in “support reading strategies”, compared to the Iranians, such as summarizing, paraphrasing, note-taking, etc. This indicated that the Indians were more interested in using top-down strategies for better comprehension while Iranians were more focused on using bottom-up strategies, using for instance a dictionary to find out the meaning of unknown words which can cause interference in comprehension. Yet another explanation supporting this result is that the Indians are proficient readers which can be surmised as the main reason for their higher frequency of using the above-mentioned
strategies. In addition, both EFL and ESL college students reported selecting problem-solving strategies as the most frequently used strategy, such as “reading slowly and carefully” or “re-reading for better understanding”. This suggests that neither group was well-versed in employing effective strategies for better comprehension, such as “summarizing”, “underlining”, or “note-taking”. Although this study contributed to the knowledge body of cross-cultural examination in relation to strategy use in learning to read, as noted by Baker and Boonkit (2004), it failed to investigate how and why the use of strategies influenced the completion of the reading tasks assigned to them in order for full, rich data to emerge. The findings would have been more transparent if the researchers had used the think-aloud method to tap into participants’ reading comprehension, for reading comprehension is both the process and product of the ideas represented in the text linked to the reader’s prior knowledge and experiences and the mental representation in memory of the text (Kintsch, 1998).

In brief, the section above deals with studies related to meta-cognition and reading comprehension. The issues involved include metacognitive awareness and the use of reading strategies, with consideration paid to the factors of reading proficiency levels and text types. However, several questions triggered by the literature and empirical studies reviewed above enabled me to shape the current study and the research design that follows and they are as follows:

- Firstly, although Carrell (1989), Block (1986), and Li and Munby (1996) provided substantial information about the idiosyncratic use of meta-cognitive strategies in ESL/EFL contexts from an emic perspective, this picture could be filled in by research that involves students with different English proficiency levels because Zhang’s (2001) study revealed that L2 proficiency level could intercept learners’ meta-strategic knowledge and their use of such knowledge as strategies.
- Zhang (2001) and Mohamed et al. (2006) focused on learners’ meta-cognitive
awareness and strategy use, independently of a reading task given, which indicates that strategy knowledge does not represent the actual use of reading strategies. It would have been better if both knowledge and use had been presented by means of think-alouds if meta-cognition in learning to read refers to how readers control their knowledge of their cognitive resources in the reading process to entail the use of strategies with a given task (Temur & Bahar, 2011).

Furthermore, Karbalaei (2010), Sheory and Mokhtari (2001), Mo’nos (2005) heavily relied on instruments to measure metacognitive awareness and the use of reading strategies, suggesting they may have overlooked the idiosyncratic use of reading strategies from the insider’s point of view. The result of Mo’nos’ (2005) study suggests that a contradiction exists between meta-cognitive awareness in their reading strategies measured by inferential statistics and those about reading ability measured by a different instrument—an objective reading test. The results showed that about 30% of the respondents with a high meta-cognitive awareness of reading strategies and a correlating high self-rated reading ability proved to be unsuccessful/poor readers. This study revealed that relying solely on quantitative viewpoints for the data analysis weakens and questions the internal validity/credibility of the findings derived, to some extent; therefore, it is also worth studying in detail the viewpoints of the participants because Newman and Benz (1998) further suggested that the quantitative and qualitative analysis of language learning strategies (LLS) is deemed to be on a continuum and can create a complete research cycle when melded together even though Cohen and Macaro (2007) suggest that current SLA research favours “a shift away from an interest in the quantity of strategy use to an interest in the quality of strategy use” (p. 23).

Finally, Kletzien (1991), Hosenfeld (1977) and Jimenez et al. (1996) overlooked the text factors, such as text genres or text structures, of narrative texts and
expository texts even though they all provided a detailed account of the how readers used strategies when processing the reading tasks given, because Yayli (2010) indicated that text structure influences how the strategies were used. This area needs to be investigated further if this is the case.

3.5 Summary and conclusion

This chapter has revealed, in the field of SLA, that learning to read in L2 is recognized as a problem-solving process in which strategies used for learning to read in L2 constitute the cognitive interplay between the text and the reader (Gagne, 1985). These cognitive processes are thought to involve the conscious execution of strategies in learning to read to solve reading comprehension problems, based on the information processing model for language learning (O’Malley & Chamot, 1990). Some inconsistencies in the terminology related to L2 learning and reading and types of LLSs have been discussed, analysed and explained. The following review also indicates that success in learning to read is primarily a matter of individual initiative, which involves an attention shift from strategy application itself to the process of what strategies are used, how, when, and why (metacognition: knowledge and control) (Sha & Schmitt, 2009). This is reflected by special attention placed on the link between the information processing model (executive control) and metacognitive model (metacognitive control) by means of a discussion on different metacognitive models comprised of several components which share conceptual overlap with two fundamental components of declarative knowledge and procedural knowledge within the information processing model in terms of strategies used for learning to read. Following this review, several suggestions regarding the importance of the construct of metacognition in strategic reading as comprehension monitoring process and its relationship with text structures of the narrative and expository type and proficiency levels in L2 learning and reading have been made for their relevance to the study aims.
This is because strategic comprehension monitoring processes between the text and the reader for better reading comprehension to occur can be initiated, accompanied, or followed by strategies executed to facilitate and evaluate comprehension (Erler & Finkbeiner in Cohen & Macaro, 2007).

Meanwhile, from the support given by the review of these previous studies conducted in EFL or ESL contexts, it is worth pursuing or re-examining whether factors of L2 proficiency levels and texts of different types play a decisive role in L2 meta-strategic learning and reading or not because L2 reading proficiency is closely related to reading performance and metacognitive knowledge of the use of such knowledge as strategies (Koda, 2005; Alderson, 2000). The same is the case regarding text structures of the narrative and expository type because they are thought to be closely related to reading comprehension (Cutting et al., 2012) and the relation of such entails a difference in the strategy types selected with both texts when it comes to metacognitive awareness and use of reading strategies in learning to read (Yayli, 2010). Nevertheless, another problem resulted from the studies reviewed is that relying solely on not only instruments to measure metacognitive awareness and use of reading strategies in learning to read but also single analytical methods may have overlooked both the idiosyncratic use of reading strategies from the insider’s point of view and the complementary combination of both quantitative and qualitative analysis in order to provide a more comprehensive picture. This is partly because metacognitive strategies are especially likely to occur in situations that stimulate deep and conscious thinking (Flavell, 1992) and partly because strategies are leaners’ self-conscious efforts for meaning making and they are not a single event, but rather a creative sequence of events that learners consciously and actively employ (Oxford, 1996).

It is therefore clear that, this current study, based on the broad concept of metacognition within the information processing model, involves both descriptive
quantitative analysis (frequencies and percentages) and qualitative analysis of the data collected (think-aloud protocols and immediately-retrospective interviews) to provide a comprehensive picture of the research area in a complementary way—to explore Taiwanese first year university EFL learners’ metacognitive awareness and use of reading strategies in learning to read and their use of strategies with the factors of different language proficiency levels and text types from the emic view. These will be clarified in the chapter of methodology which follows in order to outline the research design and answer the research questions raised in this study.
CHAPTER 4
Chapter 4   Research methodology

4.1 Introduction

In this chapter, I will present an overview of how this current research was conducted. It begins with the philosophical assumptions underpinning this research in order to contextualize the research area and, in turn, elaborate on what, why, and how the data were collected and analyzed. It is clear, therefore, that the issues addressed in this chapter include a discussion of the research paradigms, the paradigm followed in this study, determining the research design, research questions revisited, describing the current context, selecting the placement test, selecting the participants and contexts, research methods and data collection procedures, pilot study, the need for triangulation, the data analysis procedures, reliability checking and ethical considerations.

4.2 The research paradigm

Researchers who are trying to investigate a problem which interests them inevitably face the question of how best to research the problem. A paradigm means a set of basic beliefs that deals with first principles (Guba & Lincoln, 1994). To be specific, it represents a worldview that defines, for its holder, the nature of the world, the individual’s place in it and the range of possible relationships with that world. The basic beliefs that the researcher needs to consider can be summarized as follows: (1) the ontological question deals with what the form and nature of the reality is and therefore what can be known about it; (2) the epistemological question refers to what the nature of the relationship between the knower and the known is in order best to approach the knowledge required; and (3) the methodological question deals with how inquirers can go about finding out whatever they believe can be known. To be specific, ontology involves the philosophy of reality; epistemology addresses how we come to know that reality while methodology identifies the particular practices used to attain knowledge of it. Three research paradigms have dominated the scene and become the
most popular. They will be now discussed further below.

4.2.1 The positivistic research paradigm

The positivistic research paradigm (or scientific research paradigm), ontologically speaking, emphasizes the fact that social reality is considered objective and is presented in physical space (Ernest, 1994). Epistemologically speaking, knowledge is supposed to be context and value free, and is often considered an external body of information (Giroux, 1981). Finally, the form of its inquiry attempts to produce results that can be generalized and replicated. The sample size is usually large and sampling is important in quantitative studies. The data are analyzed using statistical instruments. It is therefore clear that the key feature of quantitative studies is to enable standardized measurement that allows researchers to test hypotheses and theories or study causality in a systematic way (Punch, 1998). However, this paradigm has been subject to the criticism that it is deficient in describing an in-depth complex phenomenon.

4.2.2 The interpretive research paradigm

The interpretive research paradigm (or naturalist research paradigm) is value-laden and cannot be answered on the basis of scientific knowledge alone (Guba & Lincoln, 1994). Based on this paradigm, ontologically speaking, reality is subjective and situated in the context (Ernest, 1994) and is associated with relativism because reality differs from person to person (Cuba & Lincoln, 1994). Epistemologically speaking, knowledge is regarded as “an active construction built up by the individual acting within a social context that shapes and constrains that knowledge, but does not determine it” (Applebee, as cited in Miller and Ledge, 1999, p. 15). It is associated with subjectivism because “the world does not exist independent of our knowledge of it” (Grix, 2004, p. 83). Finally, regarding its form of inquiry, the researchers’ role is more personally immersed in a social setting because the participants are the only source of reality (Guba, 1990). Data analysis is inductive rather than deductive to generate hypothesis or theories and is
mainly concerned with the emphasis placed on trustworthiness rather than reliability and validity (Cohen, Manion, & Morrison, 2000). Also, purposive sampling is likely to be adopted with a small sample size (Robson, 1993 as cited in Wellington, 2000) with a view to obtaining a deeper understanding of the experience from the insider’s point of view (Maykut & Morehouse, 1994) because studies conducted from the interpretative stance are descriptive as the researcher is interested in describing the meaning in rich detail (Bogdan & Biklen, 1982). The major strength or advantage of this paradigm is that it helps to capture the uniqueness and individuality of particular individuals in order to further develop a deeper understanding of the context in which the meaningful action takes place (Gu & Lincoln, 1994). However, researchers are the key instruments in a research study and it is therefore inevitable open to criticism of subjectivity. To overcome this disadvantage to some extent, triangulation is often employed (Angen, 2000).

4.2.3 The critical research paradigm

The critical research paradigm emerged as a result of the dissatisfaction with both the scientific and interpretative paradigms (Mertens, 1998). According to Mertens (1998), from the perspective of critical proponents, the scientific research paradigm provides only rationality and objectivity which are thought to be inadequate because truth is socially and historically embedded. Moreover, the interpretive paradigm attracts criticism from critical theorists since its epistemology places emphasis on the process of self-understanding or subjectivity and so overlooks the means through which the distorted self-understanding or subjectivity can be overcome, to some extent. However, it is believed that the critical research paradigm shares a similar stance to the interpretive paradigm rather than the scientific because reality exists ‘within’ individuals and knowledge is socially constructed. The only discrepancy between the two lies in the fact that the critical research paradigm is more concerned with social critique and social
and institutional change (Ernest, 1994). Like the aforesaid two research paradigms, this paradigm has both strengths and weakness. According to Ernest (1994), the former regards the improvement in the change made to the context, situation or institute. The latter refers to the fact that there may be hidden institutional sources of resistance to change, which in turn may prevent the expected progress occurring. In this case, there may be no worthwhile outcome for the time and energy waste.

4.3 The paradigm followed in this study

This study is fundamentally sited within the interpretive paradigm since its aim is to locate the meanings people place on their behaviour and to understand human characteristics rather than ‘generalisable hunches’ or laws on human phenomena. The aim is to interpret idiosyncrasies through natural language in order to present further, as far as possible, what students know and perceive about their language learning and reading comprehension in English and how they behave in specific reading situations. Specifically speaking, in this study, the interpretive approach is for understanding the context within which participants act and the process by which their events and actions take place, since Pring (2000, p.98) notes that “we each inhabit subjective worlds of meaning through which we interpret the social world. Indeed, that social world is nothing more than our interpretations”. Thus, being conscious of this possibility is crucial for a true representation of the phenomenon under study (reality), since human understanding is inseparable from the shared interpretations and the result of social interactions (Weber, 2004). The interpretive approach helps researchers to explain why things happen from the insiders’ point of view (Denzin & Lincoln, 2000).

Based on the argument above, the interpretive mode of inquiry seems pertinent since this study aims to probe into the realities of students’ subjective attempts to comprehend a text. The general nature of this inquiry principally necessitates the researcher gaining an insight into the process in order to understand how learners see
themselves as readers, how they understand how they read, and of which reading strategies they are aware and use to cope with the difficulty with which they are faced while reading. That is because this approach attempts to not only “capture lived experiences of social world and the meanings people give these experiences from their own perspectives” (Corti & Thompson, 2004 as cited in Liamputtong 2010, p. 11) but also emphasizes “behavior with meaning” in which a large number of our everyday interactions with one another rely on shared experiences (Cohen, Manion, & Morrison, 2007). With this in mind, the knowledge form of such behaviour and experiences which the learners themselves possess is best explored and understood from the insiders’ view because there exists as many such constructions as there are individuals (Frowe, 2001) and the meaning-making activity of the individual mind cannot be revealed and obtained with any certainty (Blaikie, 1993; Crotty, 1998; Eisner, 1981) due to its dependence of the complexity of human activities (Eisner, 1981). Instead, such behaviour and experience that they themselves possess must be detected and explored in a specific situation in which the strategies they have internalized and used can be identified. This gives them the chance to explicate their behaviour and the reasons for it. In other words, this is associated with the constructivist philosophy in which learners are seen as the constructors of their own knowledge through active participation in the learning process. This type of learning is grounded in interaction in the learning process that allows students to resolve cognitive quandaries through concrete experiences, collaborative discourse, and reflection (Brooks & Brooks, 1993). In this sense, the investigation into this phenomenon would reflect learners’ definition of the nature of their learning and their knowledge and use of reading strategies for better reading comprehension. This provides researchers with the opportunity to capture or interpret how they may deal with the reality of this phenomenon. Thus, an interpretive mode of inquiry appears appropriate to justify what to be investigated here is knowledge rather
than belief because this mode of inquiry has the potential to enable the study participants, as the informants, to articulate their ideas, beliefs and processes in situations of learning to read with particular reference to which reading strategies they use, how, and why, in a reading situation.

4.4 Determining the research design

An exploratory case study, fundamentally based on the interpretive stance, will be used as the research design, regarding the purpose of this research and its context-specificity, since its purpose is to better understand and gain insights into human behaviour and characteristics during the strategic reading process from the insider’s view. Yin (2003) suggests that a case study is an approach that facilitates the exploration of an existing phenomenon via a variety of data sources in a systematic way to provide an in-depth understanding of the case and report a case-based theme of the phenomenon, so all methods are therefore admissible in a case study. With this in mind, here, this case study research is defined as a methodology consisting of multiple sources of data collection/evidence (Creswell, 2007), since “one important advantage of a case being studied is that the richness of the material facilitates multiple interpretations by allowing the reader to use his own experiences to evaluate the data” (Roizen & Jepson, 1985, as cited in Wellington, 2000, p. 100). Yin (1984) also suggests that the combination of both qualitative and quantitative analysis can be highly synergistic, since the latter can indicate a relationship which may not be salient to the researcher and can also prevent the researcher from being carried away by vivid but false misunderstandings or misinterpretations in qualitative analysis. It can, thus, bolster the findings through corroboration with qualitative evidence, and vice versa. This argument is echoed by Onwuegbuzies and Leech (2005), who suggest that that epistemology does not dictate which specific data analytical methods should be used by researchers and that quantitative analysis only, qualitative only or both analysis types can be considered
for any research design with its own paradigm.

However, regarding a case study, it is essential to consider what the case is. The case is defined by Miles and Huberman (1994) and Creswell (2007) as an existing phenomenon of some sort occurring in a bounded context or system, which indicates what will and will not be studied in the scope of the research (Jack & Baxter, 2008). In other words, the case within the bounded system is regarded as the unit of analysis with boundaries placed on it and it can be defined by time, context, and definition (Miles & Huberman, 1994; Creswell, 2007).

Based on the statements above, the methodology of this exploratory case study within the interpretive stance is primarily based upon two data collection methods. One is the think-aloud protocol and the other is the immediately retrospective interview. This case study combines both qualitative and quantitative analysis to produce a thick description and an in-depth picture of the case as the unit of analysis under study within the bounded system. In other words, this case study aims to provide a case-based description of the first year Non-English major EFL learners, who enrolled on the foundation English reading and writing course to be prepared for the GEPT test during the period of time when the research was conducted, within the first year of their 4-year university studies, at a private university located in central Taiwan (the case as the unit of analysis bounded by time, context, and definition); with a focus on metacognitive awareness and use of reading strategies and its relationship with reading proficiency levels and texts of different types, in order to explore the research questions listed below.

4.5 Research questions revisited

1. What reading strategies in learning to read did Taiwanese first year university EFL learners perceive and use to read English texts? And how did they use them?
2. What reading strategies in learning to read did Taiwanese first year university EFL learners of different reading proficiency levels perceive and use to read English texts? And how did they use them?

3. What reading strategies in learning to read did Taiwanese first year university EFL learners of different proficiency levels perceive and use with expository and narrative texts? And how did they use them?

4.6 A Describing the current context

The university where the current research was conducted is private and located in central Taiwan. At the university, these Non-English major EFL learners are learning English to satisfy the required examination threshold for graduation. English is a compulsory subject for first and second year students on the four year university course, with an average of 2 hours of classes per week. At the end of either their first or second year, students have to take the preliminary test of the GEPT intermediate level to qualify for the threshold. The test is a graded proficiency test of university students’ achievement as well as their proficiency in EFL. Failure will result in graduation being denied. The preliminary test comprises listening comprehension, reading comprehension, grammar and the cloze test, with choices given. This test is regarded as the standard test in Taiwan and is believed to be highly reliable, with reliability mostly in the high .8 range (Roever & Pan, 2008). Because of the testing effects, the standard curriculum of the university where the current research was conducted was set within this parameter to assess English ability. Thus, the reading course focuses on traditional classroom instruction, for example, grammar drills, vocabulary instruction, translating English passages into Chinese, and the skills needed for solving de-contextualized reading comprehension questions. The teaching methods that the teachers in this institution adopt solely depend on the traditional GTM, with the focus on teacher-centred learning rather than on teachers as facilitators. The
reading class consists of a series of language points, using texts as points of departure. Reading texts, in other words, are sources of language exercises rather than reading exercises. In this case, the active engagement of the reader with the text is not emphasized because students are not prepared to utilize strategies to interact with the reading comprehension passages given and rarely have a consciousness of how to cope with the English reading materials strategically when faced with difficulty in text comprehension. Therefore, the importance of an awareness of strategic reading promotes the triangular relationship that exists between the text, the learners, and the teacher in order to help students develop an awareness of strategic reading and self-direction, and to turn the classroom into a ‘strategic’ learning environment.

4.7 Selecting the placement test

The preliminary test of the GEPT intermediate level was selected as the placement test for the following reasons. Firstly, it was developed in Taiwan and is regarded as the standard test with a high degree of reliability (mostly in the high .8 range), according to Roever and Pan (2008). Secondly, in the Taiwanese educational system, the intermediate level corresponds to the English level of senior high school graduates. This is based on the level description of GEPT developed by the LTTC in Taiwan (Yang, 2006). Meanwhile, the university where the present research was conducted uses the preliminary test of the intermediate level of GEPT for the graduation threshold. Finally, it consists of both a listening and reading section and so is considered far more comprehensive than using a reading section alone to assess students’ English ability regarding assessing students’ language proficiency (Lai, 2009). The reading section consists of 40 questions and each correct answer is awarded three marks. The listening section consists of 45 questions and each correct answer is awarded 2.67 marks. The pass mark for the test is 160 out of the total score of 240 but both the listening and reading sections require a minimum score of 72. This the comprehensive marking
system used by the LTTC in Taiwan.

4.8 Selecting the participants and the research context

The major reason for selecting this university as the research setting was the possibility of access, for I was an English teacher in the International Language Center (ILC) of this university while I was conducting the research. Thereby, I was able to obtain permission from the director of the ILC to conduct the research. Also, the recruitment of the participants was easy because I was the class teacher. I therefore asked my first year Non-English major students, who were enrolled on the course of foundation English reading and writing during the time when the research was conducted whether they were willing to participate in the research or not. One hundred of them voluntarily participated in the study. Purposive sampling was undertaken using non-probability sampling in my study as this sampling strategy is considered the commonly-used method of choice in a qualitative case study for selecting the participants. After obtaining their consent, the 100 participants were asked to take the preliminary test of the GEPT intermediate level as the graduation requirement so that I could assess their English reading proficiency level and thereby classify them as high proficient readers in English, who fulfilled the requirement, and low-proficient readers, who did not. This choice was to decide on the critical case to be chosen because the current research aims to obtain a deeper understanding of these learners’ metacognitive awareness of their use of reading strategies for better reading comprehension to occur with consideration paid to different reading proficiency levels and texts of different types when they were enrolled on the fundamental English reading and writing course to be prepared to pass the preliminary test of the intermediate level of the GEPT test during the first year of their 4 year university studies. The choice of this sampling strategy was based on the understanding that the purpose behind purposive sampling is theoretically defined as “selecting groups or categories to study on the basis of their
relevance to your research questions, your theoretical position and most importantly the explanation or account which you are developing (Mason, 1996, pp. 93-4). In other words, researchers seek out the groups, settings, and individuals where the processes being studied are most likely to take place (Silverman, 2005). In doing so, in early October 2011, the test was given by me to the 100 first year university non-English major learners of English enrolled on the mandatory English reading and writing foundation course. Also, I distributed a small questionnaire to collect participants’ background information. I asked them to have it attached to the answer sheet and returned with the answer sheet. An example of the student background questionnaire is included in Appendix B. Finally, the raw scores and performance on the GEPT was tabulated below.

<table>
<thead>
<tr>
<th>Table 4.1 Performance on the GEPT test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
</tr>
<tr>
<td>140.59</td>
</tr>
<tr>
<td>(10%)</td>
</tr>
</tbody>
</table>

Key: High proficient readers (HPRs), Less proficient readers (LPRs), Low proficient readers (LPRs); Key: The total number of the test-takers: 100.

Because the pass score within this level is 160.11 and the average score of the participants is 140.59, students identified as less proficient readers with scores ranging from 140.59 to 160.11 were excluded from the research. After the administration of the test, all 10 students identified as HPRs, with a total score above 160 on the test (either the reading or listening section up to 72) and 35 students identified as LPRs with a total score below 160 on the test (either the reading or listening section below 72) were contacted again. However, some of them were unavailable due to unwillingness and the time constraints. Therefore, seven students identified as HPRs and seven identified as LPRs volunteered to participate in the current study. All of them were invited to participate in the study after school hours, and their consent was obtained. The
The demographic information of both reader groups is tabulated respectively below.

**Table 4.2 Demographic information of the high proficient readers**

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Gender</th>
<th>Age</th>
<th>Major</th>
<th>Years of study</th>
<th>Score on test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tina</td>
<td>F</td>
<td>20</td>
<td>International Business Management</td>
<td>Freshman</td>
<td>161.43</td>
</tr>
<tr>
<td>Grace</td>
<td>F</td>
<td>20</td>
<td>Accounting Information</td>
<td>Freshman</td>
<td>160.11</td>
</tr>
<tr>
<td>Yeh</td>
<td>M</td>
<td>19</td>
<td>International Business Management</td>
<td>Freshman</td>
<td>161.1</td>
</tr>
<tr>
<td>Kay</td>
<td>F</td>
<td>19</td>
<td>Medicinal Botany Healthcare</td>
<td>Freshman</td>
<td>161.76</td>
</tr>
<tr>
<td>Yang</td>
<td>F</td>
<td>19</td>
<td>Industrial Engineering and Technology</td>
<td>Freshman</td>
<td>164.1</td>
</tr>
<tr>
<td>Li</td>
<td>F</td>
<td>20</td>
<td>Electric Engineering</td>
<td>Freshman</td>
<td>160.11</td>
</tr>
<tr>
<td>Jay</td>
<td>M</td>
<td>20</td>
<td>Material Science and Engineering</td>
<td>Freshman</td>
<td>160.77</td>
</tr>
</tbody>
</table>

**Table 4.3 Demographic information of the low proficient readers**

<table>
<thead>
<tr>
<th>Pseudonym</th>
<th>Gender</th>
<th>Age</th>
<th>Major</th>
<th>Years of study</th>
<th>Score on test</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joanna</td>
<td>F</td>
<td>19</td>
<td>Sport Business Management</td>
<td>Freshman</td>
<td>110.73</td>
</tr>
<tr>
<td>Chuang</td>
<td>M</td>
<td>20</td>
<td>Business Administration</td>
<td>Freshman</td>
<td>137.76</td>
</tr>
<tr>
<td>Bia</td>
<td>F</td>
<td>19</td>
<td>Industrial Engineering and Technology</td>
<td>Freshman</td>
<td>112.74</td>
</tr>
<tr>
<td>Dolly</td>
<td>F</td>
<td>20</td>
<td>Electric Engineering</td>
<td>Freshman</td>
<td>107.4</td>
</tr>
<tr>
<td>Rurong</td>
<td>F</td>
<td>20</td>
<td>Medicinal Botany Healthcare</td>
<td>Freshman</td>
<td>138.09</td>
</tr>
<tr>
<td>Dia</td>
<td>F</td>
<td>19</td>
<td>Sport Business Management</td>
<td>Freshman</td>
<td>130.08</td>
</tr>
<tr>
<td>Leo</td>
<td>M</td>
<td>20</td>
<td>Accounting information</td>
<td>Freshman</td>
<td>104.73</td>
</tr>
</tbody>
</table>
4.9 Research methods and data collection procedures

Different data collection methods were used in this study to collect the data about the students’ meta-cognitive awareness and actual use of reading strategies. The following sections discuss and clarify how the data collection methods were used, how the training session was conducted to orient potential participants to the think-aloud method and why and how the pilot study was conducted.

4.9.1 The pilot study

The pilot study was conducted, in early November 2011, with three purposes in mind, to check: (1) whether the data collection procedures would be effective or not; (2) whether the limitation of think-aloud would be complemented if a retrospective interview was conducted with the participants immediately after their think-alouds via asking them to listen to the comments they had made on tape while reading the text given; and (3) whether the selected reading passages would invoke the reading strategies used during the reading process. The pilot study will be clarified in more detail below.

First of all, I piloted the data collection procedures to check whether the ones that I had worked out were effective or not. The 14 potential participants were divided into two equal groups of the high and low proficient readers, and one student was selected from either of the two groups. Both students were asked to read texts of two types: a narrative and an expository text. The comments made during the pilot study while they were reading the texts given were tape-recorded.

The conduct of the pilot study led to an amendment of the data collection procedures. Originally, the students were asked to make a free report; that is to say, to speak aloud whatever came to mind whenever they had something to report. However, the students became so engrossed in the reading task that they inadvertently forgot to verbalize. In order to minimize this problem, for the formal data collection, a slash was used at the end of each sentence as a signpost to remind the participants to verbalize, as
suggested by McDonough and McDonough (1997). Also, I found that the students paused, remained silent for a long period of time or got stuck with the interpretation of the meaning of the sentences. In order to encourage the students to speak aloud and minimize the interval between reporting and processing, as suggested by Singhal (2001), for the formal data collection, I used verbal prompts like, “Don’t be afraid to express yourself”, “Just express what you want to say” or “Tell me what you’re thinking.”

Moreover, the think-aloud method mainly depends on the comments made by the participants or on the thoughts verbalized by the researched, and this might entail the problem of incomplete, unclear, or sub-vocalized think-alouds (Someren, Barnd, & Sandburg, 1994). In order to minimize these problems to some extent, I took the suggestions of Someren et al. (1994) on board. I listened to the comments the participants made on the tape in order to afterwards review their comments or question their thoughts on the problem-solving process together with the participants so that they could give their interpretation of what had happened when they had faced a problem to solve in terms of undertaking self-observation (retrospection). As a result, I was concerned about whether the procedures I adopted to collect data could reveal what was really ‘going on’ in the readers’ minds and reveal why and how the readers had made certain decisions while reading. In so doing, in the pilot study, I played the tape and asked the participants to listen to the comments they had made about their thought processes. This allowed the participants to explain how they comprehended each sentence, which strategies they adopted to overcome the reading difficulties and why they made their decisions retrospectively. The subjects’ retrospective verbal reports were, again, recorded.

Also, during the pilot data collection procedures, I paid careful attention to whether the incomplete protocols, the sub-vocalized thoughts, and the unclear comments could be confirmed or clarified, or not. While listening to the comments with the student, I
asked him or her to explain any points which were unclear or incomplete. For example, I asked a participant to clarify a certain point by saying, “Can you explain why you think George Washington was a key military leader?” The participant replied, “I think he was a key military leader because, to my knowledge, in the army only can the person in power be allowed to sleep in a personal tent and this makes me to think so”. Moreover, in another example, I asked the participant to confirm a certain point by saying, “You said that pre-Easter means a certain period of time before the Easter holiday…Is that because the prefix ‘pre’ has the meaning of before a certain period of time?” The participant replied, “Yes, it is…That is because I know an English word can be made up of different word parts and, in this case, the prefix ‘pre’ is an example of this”. After the immediately retrospective interview, I asked the students whether this method could provide them with another chance to explain what they had done while performing the reading task and one commented, “I think that in this way I can provide a clear explanation of what I just did partly because it is difficult to do the think-aloud while reading and partly because it is distracting. I might forget what I’ve read if I have to explain what I’m thinking while performing the reading task”. This was echoed by Someren et al. (1994), who suggested that the think-aloud method requires concurrent verbalization and discourages interpretation on the part of the participants, so a retrospective interview could be conducted to elicit their interpretation immediately after the completion of the think-aloud task rather than at the later stage. It was therefore that, based on the results of the immediately retrospective interviews, the incomplete protocols, the thoughts sub-vocalized, and the unclear comments were clarified and confirmed to some extent.

Another intention of the pilot study was to assess whether the text selected could elicit the use of the strategies being reported or not. Since Afflerbach and Johnston (1984) suggest that, if participants are given extremely difficult texts, their processing
system may become overloaded, possibly resulting in a complete or near complete breakdown of the comprehension process. With this in mind, special attention was paid to assessing whether the strategies could be reported verbally or not while the participants were reading the selected passages. The data revealed by the think-alouds and the immediately retrospective interviews showed that both students from different groups revealed the use of reading strategies when they encountered ambiguity or a breakdown in comprehension during the reading process. Symbols used in transcribing learners’ verbal reports on their think-aloud sessions and immediately retrospective interviews are included in Appendices C and D respectively, and these symbols were adopted throughout the transcribing. Also, excerpts of the transcripts of the pilot study of readers of different proficiency levels reading texts of the narrative and expository types are included in Appendices E, F, G and H, respectively. Finally, the students selected for conducting the pilot study were excluded from the final data collection procedures and data analysis.

4.9.2 The Think-aloud method

The think-aloud method is frequently used to access people’s reading process and strategies (Ericsson & Simon, 1993) and is arguably the best available means of examining what goes on in learners’ minds as they perform a given task (Cohen, 1998). In using the think-aloud method, researchers usually provide a reading task and ask the participants to say whatever comes to their mind while performing the task. Furthermore, there are many advantages associated with using the think-aloud method to collect information about strategy use (Henk, 1993; Pressley & Afflerbach, 1995). For example, this method directly provides information about strategy use, knowledge and the process report since it requires the research participants to continually verbalise the thoughts in their head as they process the information cognitively (Cohen, 1998); instead of inferring students’ strategy use through their performance on a reading test or
their answers during an interview, it directly assess strategy use in a specific reading task and provides both product data (the reading text results) and a process report (the think-aloud protocol) that help us to access the reasoning underlying sophisticated cognitive processes. As the delay between the process and report is only a few seconds, it avoids the problem of memory failure, as a result of the working memory (Lau, 2006). In doing so, in this study, I obtained the think-aloud protocols on reading processes as well as on what strategies the participants chose to employ, how, and why, while engaging in a reading task. This was to probe their metacognitive awareness and actual use of reading strategies and the relationship between text types and students of different reading proficiency levels.

Although this method is a powerful way of exploring the participants’ invisible cognitive processes, its limitations should be highlighted and noted. As the results rely heavily on the verbal reports of the participants during the think-aloud procedures, the results may be affected by several potential problems, including limited verbal ability, inadvertent cuing, an unnatural environment, process disruption and the inaccessibility of unconscious thinking (Paris, Wasik, & Turener, 1991, Singhal, 2001). Despite the criticism of the verbal report data, a great deal can be learnt about the reading comprehension process and psychology of thinking by encouraging the participants to think aloud about the problems if the procedures of a think-aloud study are carefully planned and conducted in order to ensure the validity of the think-aloud protocols (Pressley & Afflerbach, 1995).

It is therefore that, in response to this, I referred to the comprehensive solutions suggested by Zhang, Gu, and Hu (2005, p. 283) to minimize the commonly-mentioned problems associated with the think-aloud data collection procedures. These solutions are tabulated below and will be presented, explained, and discussed in the sections that follow.
<table>
<thead>
<tr>
<th>Problems</th>
<th>Solutions</th>
</tr>
</thead>
</table>
| 1. Respondents may produce unreliable verbal reports. | 1. Provide pre-training.  
2. Tap mental event information while it is still available.  
3. Ask the respondents to describe, rather than explain or interpret, what is in their mind.  
4. Ask the respondents to report only information being attended to in their STM. |
| 2. Verbal reporting has intrusive effects. | 1. Provide training practice.  
2. Create task conditions that resemble as closely as possible those of the verbal report.  
3. Ask the respondents to perform in the way they would normally perform, without a verbal report.  
4. Use simple reporting tasks that do not require excessive concentration and effort. |
| 3. Respondents may differ in their ability to verbalise. | 1. Give clear instructions before verbal reporting.  
2. Provide information training—warm-up trials of similar tasks. |
| 4. Weaker students may find it difficult to verbalise in L2. | 1. Give the subjects a choice of language.  
2. Allow the use of more proficient language for reporting. |
| 5. The respondents may be too engrossed in the task and forget to verbalise. | 1. Provide regular reminders such as red dots, beeps, etc.  
2. Verbalise after each sentence and episode, at signaled spots, every two minutes, or at the end of the text. |
| 6. The respondents may be unable to remember mental events after the performance and may engage in faulty reporting. | 1. Prompt without leading.  
2. Minimise the time between the process and report.  
3. Prompt respondents by using concrete examples and contextual cues. |

### 4.9.3 Training of the think-aloud task

Theoretically, when a think-aloud method is successfully used, it offers the advantage of eliciting rich data on invisible cognitive processes (Ericsson & Simon, 1984). However, this measure relies heavily on the participants’ verbal report during their performance of the think-aloud task so particular care should be paid to the data.
collection procedures to ensure higher validity/credibility of the think-aloud protocols (Young, 2005). In response to this, careful planning and training at the sentence level are believed to help to reduce the intrusive effect that is most associated with the inherent limitation of the think-aloud method (Cohen, 1998). Moreover, there are two other limitations suggested by Block (1986) and Ericsson and Simon (1993). One is that processes that are automatic or hard to verbalize are not obtained. The other is that giving verbalization may change performance and readers may report activities that are irrelevant to the processes. For these aforesaid reasons, I was concerned about whether or not these students could verbalize not only what they had understood but also what they were thinking while reading, so a training session was provided for all participants, carried out from mid-November to late December 2011. This is what Ericsson and Simon (1993) recommend as a “warm up”, conducted before an actual think-aloud task. Since most people seldom report their thinking processes while reading a text, they probably will feel uneasy about doing so. This prior exposure to the think-aloud procedure is needed because other researchers also report that it can be even more difficult for intermediate students to verbalize their thoughts while reading silently (Langer, Bartolome, Vasquez, & Lucas, 1990). This belief was also echoed by Garner (1987) and Hartman (1995), who recommend that students are given practice in the think-aloud procedure prior to using it for formal data collection to minimize this problem. In order to both lower participants’ sense of unfamiliarity towards its operation and familiarize the participants with the procedures, each participant was trained to be familiar with the task, as noted by Huang (2009). In so doing, researchers should introduce tasks and demonstrate them before the real tasks given (Block, 1992). Besides demonstrating, a participant practice session is also required. Once readers are accustomed to reporting their thoughts, protocols will be effective and valid. Based upon the aforesaid suggestions, I met the participants individually in a small classroom.
after class to train them how to perform the think-aloud protocol. The training session consisted of three parts—introduction, demonstration and practice—and involved the use of the expository reading text designed with comprehension questions directly taken from the reading section of the preliminary test of the GEPT intermediate level as the reading material for the training sessions, as included in Appendix I. The training session will be further clarified below.

First, each participant was informed that the focus on the verbalization procedures aimed to gather verbal reports and asked him or her to say as much as possible about what he or she was thinking while engaged in reading and about what he or she wished to do when he or she could not understand the text (Young, 2005). I therefore informed each participant about the instructions synthesized by Ericsson and Simon (1993) and Singhal (2001). These instructions tell them to: (1) read in exactly the same way as they usually read when alone, apart from verbalizing everything in their mind as they go through the text; (2) think aloud in a loud voice and say everything that comes into their mind while searching for a solution to the reading problems they encounter; (3) think aloud constantly from the minute when they are presented with the materials to ensure collection of all thoughts; (4) remember that the primary interest is in their thinking in all attempts and in whatever comes to their mind, no matter whether it is a good or less good idea; (5) say exactly what they are thinking rather than plan what to say after having the thought, to avoid discrepancies between the two; (6) report only information being attended to in their STM; (7) describe rather than explain or interpret what is in their minds; (8) say exactly what they are thinking and provide the final product of processing rather than descriptions of the explanation of processing; and (9) ensure that all of them pay attention to, understand, and comply with the instructions.

Afterwards, each participant was allowed to raise any questions during the introductory phase if he or she still could not understand the vocalization procedures.
after the instructions were given. All participants failed to ask any questions and said that they understood. I myself then introduced the think-aloud process and demonstrated the first half of the passage in the text to each participant together with an oral explanation to orientate each participant. I modeled the process. After the introduction and demonstration, in the practice session, I provided each participant with warm-up trials on similar tasks for practice, as suggested by Gu, Hu, and Zhang (2005). I asked each participant to practise the think-aloud for the rest of the passages in the text. Each of them had to practise until he or she was familiar with reporting his or her thinking. In other words, once they were able to perform the think-aloud task well, the participants could proceed to the formal experiment. During the training session, one of the participants asked me which language he should use during the think-aloud practice. He was informed that he was able to use the language with which he felt most comfortable, either Chinese or English, as suggested by Lau (2006). This particular point was taken into account when the formal data collection was conducted. Moreover, another female participant claimed that it was difficult for her to perform the think-aloud protocol while engaged in the reading task because she thought that it was quite intrusive. I told her that this problem was quite common but it might become less intrusive if the participant familiarized herself or himself with the procedure through the training practice given, as suggested by Cohen (1998). Therefore, she did the practice several times with me to ensure that she could do the task adequately.

Also, during the training session, I noticed that several students inadvertently provided descriptions of the explanation of their processing rather than their reasoning behind the decisions made (strategy use) to deal with the difficulties in reading comprehension while reading, even though I had performed the demonstration for them. This is one of the problems most associated with the think-aloud method (Singhal, 2001). For example, they tended to do this by saying, “I think this sentence is difficult,
there are three unknown words, and I still do not know what they mean” or “I am reading the first sentence, I have finished reading it, and I am going to read the second sentence” or “I do not understand this but I understand the rest of the sentence”. To minimize the problem, during their training sessions, I reiterated the importance of thinking aloud by saying, “You have to tell me whatever comes into your mind and tell me what you do and how and why you do it whenever you sense the certainty or uncertainty of your reading comprehension”. Each participant was asked again whether he or she had any questions about the task at the end of the training session. The participants told me that they knew what think-aloud was and how to do it. The trial lasted between 5 and 15 minutes because of the difference in the verbal ability the participants had. However, in order to ensure that they all remembered, they were asked to practise at home before the formal data collection began. Finally, all of the participants were informed, for the formal data collection, that their verbal reports would be tape-recorded and transcribed for this study.

4.9.4 Conducting the think-aloud method

After the training session, the think-aloud session was conducted with each participant to collect their verbal reports while performing the reading task—the narrative and expository text—to collect the reading strategies that were actually used by the learners. I collected the data derived from the narrative first, from late February to early April 2012. Afterwards, I collected the data derived from the expository text, from mid-April to late June 2012. The data were collected during the time when the students were not studying, so the locations where I conducted the think-alouds with the students included a lecture room and a language laboratory that were not required for teaching. The length of each participant’s verbal report ranged from 26 minutes to 40 minutes per text. During the data elicitation, particular care was taken to facilitate the participants’ verbalization of their mental processes. To avoid overburdening the
participants, I allowed them to use either Chinese or English when making their report, as stated by Jemenez et al. (1996) and Zhang et al. (2008). Besides, I tried to prompt them neutrally without leading them; the goal was to elicit as natural an account of the students’ thinking as possible (Young, 2005). Consideration was therefore given to the potential problem of inadvertent cuing and process disruption (Paris, Wasik & Turner, 1991). In so doing, I provided neither explanations nor assistance to the subjects, nor did I purposely intervene in their comprehension process. Instead, I neutrally encouraged the verbalization of their thinking by saying without leading, “Don’t be afraid to express yourself” or “Just express what you want to say”, as noted by Someren et al. (1994), with the intention of avoiding both interpretative thought processes and intermediate responses between the participants and the researcher, because the neglect of this might inadvertently cause a change in performing the main task or their thoughts; namely, the participants might report activities irrelevant to the processes via providing an ‘another-oriented description’ as a response (Ericson & Simon, 1993). Also, in order to minimize the interval between the report and the process, participants were reminded to verbalize their thoughts by saying, “Tell me what you are thinking about and what you want to do” whenever they visibly paused in their reading, were stuck on interpreting the meaning of a sentence or fell silent for an extended period of time (Yang, 2006). I wished to keep their think-aloud behaviour as natural as possible, even if it meant that the degree of information varied between them. I sat next to them, not across or face to face, to minimize intimidation (Nunan, 1992). This was also out of consideration of the potential problem of the unnatural environment (Henk, 1993; Singhal, 2001). More importantly, in order to facilitate the subjects’ verbalization of their mental process, I divided the text into semantic chunks or meaningful segments, normally sentences or long clauses, depending on the length of the sentences. These divisions are separated by means of slashes for sentence-by-sentence talking, as suggested by other studies (Block,
1986; Ericsson & Simon, 1993; Zhang et al., 2008; Cohen, 1998; Gu, 2003). These steps may also act as reminders to the subjects about where to stop reading or prompt them to think about what they have read in order to start verbalizing aloud, as the respondents may be too engrossed in task and forget to verbalise (Zhang et al., 2008). The protocols were tape-recorded as the participants carried out the tasks, with their explicit approval, out of consideration of an ethical issue (Cohen & Manion, 1994). The thoughts were tape-recorded not only to provide a permanent record for future review and analysis (Young, 2005) but also to allow the researcher a chance to review or question their thinking about the problem-solving process later with them, so that they could provide their own interpretation of what happened when they encountered a problem, in retrospect (Someren et al., 1994). Finally, the directions for the think-aloud method are presented in Appendix J.

4.9.5 The reading passages selected

Two reading texts, one expository and one narrative, were used for the data collection. The reading texts and their related questions were directly adopted from the reading section of the intermediate level of the preliminary GEPT. The expository text was 217 words long, provided information about parades held in Brazil, and compared the different kinds, including how they were organized and where held. The narrative text was 213 words long, and recounted a story illustrating how the missing piece of George Washington’s tent was finally discovered. Both texts were selected for various reasons and are shown in Appendices K and L respectively. Firstly, both were short and interesting. Secondly, both created the opportunity to evoke the strategy uses among students and reveal their reading process because both were found to be neither extremely difficult nor easy when piloted with the think-aloud process. This is essential in case no think-aloud data is produced (Huang, 2009). Thirdly, the participants would have been unable to obtain them because they were used as teaching resources in most
situations, so the data elicited could be as natural as possible. They also covered
genral topics that did not require specific domain knowledge, which was helpful for the
current study, as the participants were from different departments and disciplines,
as noted in the section of participant selection. This consideration followed Kletzien’s
(1991) suggestion, for familiarity with prior knowledge might influence students’
metacognitive awareness and use of strategy regarding a discrepancy in strategy use.
Finally, students employed more strategies while reading expository texts because the
structure and usage of words in these texts are more difficult than those in narrative
texts (Hare, 1982). Therefore, I included both text types in order to gather more data.

4.9.6 Interviews

The use of interviews in research is based on the belief that knowledge can be
cO-constructed, often through conversations, because interviews enable the participants,
interviewers or interviewees, to discuss their interpretation of phenomena in which they
are interested and describe situations from their own viewpoints (Cohen et al., 2000). Interviews are a very common method to get the participants to articulate their views and ideas about language and language learning. They are oral in nature and used, according to them, to achieve the following purposes: (1) to interrogate cognitive processes to explore knowledge about participants as readers; and (2) to provide a deeper perspective on the phenomenon under study. As for my research, a retrospective interview was conducted immediately after the administration of the think-aloud protocol. A detailed account of this method employed in my study will be therefore provided below.

4.9.6.1 The immediately retrospective interviews

Retrospective interviews were conducted with individual students immediately after the think-alouds, since lots of information is still in their STM and it can be directly used as retrieval cues (Ericsson & Simon, 1984). Besides, Lau (2006) suggests
that this method can complement the think-aloud method to achieve a more comprehensive understanding of cognitive processes during reading. It allows the individual participants not only to reflect on their performance and comment on the process but also to explain or clarify certain behaviour in order to provide both the participant and the researcher with a shared interpretive understanding. As “the think-aloud method requires concurrent verbalization and discourages interpretation on the part of the subject” (Someren et al., 1994, p.23). As a result, it was used to capture the information on strategies that the think-aloud could not reveal, especially to elicit the specific strategies that were not voiced by individuals, and pauses in the think-aloud session or fragments of the think-aloud session that sounded incomprehensible, very incomplete or very odd. Also, this made it possible to confirm or clarify the actions of students who appeared to sub-vocalize, as noted by Young (2006). This provided the participants with an opportunity to expand on their thoughts to some extent because there are individual differences between the ability to verbalize think-alouds (Singhal, 2001). More importantly, this was not only to capture information on strategies that the think-aloud data could not reveal (Gu, 2003), but also to ensure the credibility of any think-aloud findings because multiple methods should be used to gather convergent information about the cognitive processes (Winne & Perry, 2000). Based on the aforesaid suggestions, immediately after the think-aloud tasks, I played the tape and reviewed their comments and thoughts with the participants. This provided me with the opportunity to ask them to explain issues retrospectively, especially for incomplete, inexplicit and less verbally-reported think-alouds. Their retrospective verbal reports were, again, recorded. During the phase of the retrospective verbal report, I avoided asking the participants general questions in case they provided me with a generalized description of their thoughts. Instead, I asked questions about what was really going on in their mind as they read, not only to clarify and confirm which reading strategies they
had adopted to overcome their reading difficulties but also to show why and how readers used a particular reading strategy to enhance their reading comprehension while dealing with any reading difficulties that arose. For example, I asked participants specifically, “You said that you were trying to guess the meaning of the unknown word at that moment? Can you tell me how you do it and why you do it that way?” I might also ask a more detailed question, by saying, “You said that this word is made up of two parts. Can you tell me exactly how you worked out the vocabulary?” By asking them to undertake self-observation retrospectively, they were able to give their own interpretation. This allowed me to clarify and confirm which reading strategies for learning to read they adopted to overcome difficulties and also understand why and how readers used a particular strategy to improve their comprehension. The duration of the immediately retrospective interviews was 15-25 minutes. In order to obtain accurate information on strategy use while not overburdening the participants with L2, as suggested by Cohen (1998), I conducted the immediately retrospective interviews with individuals in Chinese as well. Finally, the directions for the immediately retrospective interview were put in Appendix M.

4.10 The need for “triangulation”

Although the think-aloud method directly assesses strategy use during a specific reading task, few researchers have relied on think-aloud transcripts as their only source of data gathering (Charters, 2003). Ericsson and Simon (1980) also stressed that think-aloud data from the working memory will always be incomplete and exclude a number of thought processes held in the working memory long enough to be expressed verbally. This was echoed by Charter (2003), who suggested that, in order to provide a means to strengthen the credibility of think-aloud protocols, multiple methods should be used to seek convergent information about cognitive processes. The most widely-used follow-up strategy is retrospective questioning (Ibid). Although it involves difficult
retrieval from the LTM, and may be unfairly influenced by researcher questioning, Nunan (1992) concluded that these problems are offset when combined with the concurrent data from the working memory such as those from the think-aloud data. Equally speaking, Rankin (1988) recommended a retrospective analysis, particularly for those who had difficulty with the think-aloud method, while Pressley and Afflerbach (1995) point out that the participants’ ability to describe their thought processes may provide helpful information on their metacognitive skills. Qi (1998) also suggested that an interview conducted immediately after the think-aloud method may also allow the participants to “validate” researchers’ interpretation of their think-aloud utterances; this would be particularly important when some of those utterances may be in the participants’ L1. Finally, when retrospective questioning is used only to illuminate and expand on the results of the think-alouds, it may add depth of information about the participant’s thought processes (Nunan 1992). Based on the aforesaid argument, in this current study, the immediately retrospective interview was used to triangulate the data of the think-aloud protocols, especially the incomplete, sub-vocalized, and odd protocols. The selection of ‘triangulation’ is designed to avoid the limitations of using one particular research method and increase the credibility of any findings that could be established across all sets of data collected, since that the main focus of this research is concerned with think-aloud protocols in an attempt to secure an in-depth understanding of which reading strategies these students use meta-cognitively, with regard to learners of different reading proficiency levels and texts of different types, because research conducted from the emic views of the participants is inherently multi-method in its focus (Denzin, 2005). Also, this reduces the risk of systematic bias, misinterpretation and misunderstandings, as well as the limitations of a specific method by interpreting the converging evidence, in order to point to a clear, thick, multi-level description to increase the transferability of the data (Anderson, 1990).
4.11 Data analysis procedures

As stated by Cohen et al. (2007), content analysis can be undertaken with qualitative data ranging from any written material including documents, interview transcriptions, media products, and personal interviews, and this form of data analysis puts the emphasis upon language and linguistic features, and the units of meaning assigned to the texts in context. The aforesaid features of content analysis share similarities with the interpretive stance, because content analysis also concentrates on a linguistic interpretation of actors’ meaning and seeks to make sense of actors’ language within the specific context (Berg, 2007). Likewise, content analysis is defined as having multiple meanings and interpretations because the meanings are located in specific contexts and, hence, have to be placed in context (Krippendrop, 2004). Besides, content analysis shares similarities with grounded theory in terms of the data analysis process since both methods of data analysis involve deduction and induction thinking, taking texts and analyses, reducing and then interrogating them into summary form through the use of both pre-existing categories and emergent themes in order to theorize from the data (Cohen, et al., 2007). Noticeably, Weber (1990:10) suggests that, “the highest quality content-analytical studies use both quantitative and qualitative analyses of text defined as any form of written communication”. This current study therefore undertakes the form of content analysis regarding the coding strategy suggested by Strauss and Corbin (1990). The data analysis was carried out using two research instruments: the think-aloud protocol, and the immediate retrospective interview. The data analysis procedure consisted of two stages. The first dealt with the qualitative analysis with particular reference to the processes involved in analyzing the data from both the think-aloud protocols and immediately retrospective interviews. In addition, the second dealt with the descriptive quantitative analysis of the frequency counts. The data analysis procedures and the purposes of the research instruments will
now be clarified below.

4.11.1 Data analysis of the think-aloud protocols and immediately-retrospective interviews

This section primarily deals with qualitative analysis with particular reference to the process of analyzing the data from the audio-taped think-aloud protocols and immediately retrospective interviews. Hence, the process of the qualitative analysis of the data obtained from both instruments was divided into the following three phases: (1) transcribing, (2) segmenting and labeling, and (3) categorizing.

**Phase 1: Transcribing**

Firstly, the verbal reports were transcribed from the think-alouds. The verbal reports from the immediately-retrospective interviews followed. The transcribing included the oral reading, responses, pauses, interjections, such as mm hm, eh, er, and laughter. All of the transcripts were translated from Chinese into English, after which both of my supervisors offered to check the language. After that, I carefully re-examined the translated transcripts and improved any sentences that did not make sense, based on their comments. The verbatim transcription were then combined from both data collection methods for comprehensive data analysis, and both transcripts from the immediately retrospective interviews and think-aloud protocols were then analyzed simultaneously because the questions posed to the participants during the immediately retrospective interviews were based upon their think-aloud protocols, especially for incomplete, sub-verbalized or odd think-alouds. Therefore, the participants’ verbal reports were subjected to coding.

**Phase 2: Segmenting and labeling**

Coding serves to summarize, synthesize, and sort out the emergent themes in interviews, observation, and other sources (Strauss & Corbin, 1990). An initial classification for analyzing the transcribed think-aloud protocols and the immediately retrospective interview transcripts was developed by the researcher, who read and
re-read the transcripts using the coding strategy of open-coding, referred to as a process of breaking down, examining, comparing, conceptualizing, and sensitizing concepts into categories and themes (ibid). That is because the focus at the open-coding stage was not placed on the words but on their meanings and connotations, since a word or phrase does not contain meaning unless it is in context (Cohen, et al., 2007). In other words, the intention was to assign units of meaning to the data through segmenting and labeling because the meaning is created and constructed in a given context (Esterberg, 2002). With this aforesaid concept in mind, I went through all of the transcripts of both types and analyzed the data both manually and inductively. This part of the analysis process involved dividing the transcribed think-aloud protocols and immediately retrospective interviews into chunks, involving the segmenting and labeling stages. The aim was to assign meaningful units to the transcripts in order to code or label them. I therefore segmented the transcribed think-aloud protocols and immediately retrospective interviews into meaningful units of varying size, words, phrase, and sentences. Attention was paid to both the most manifest, obvious or straightforward meanings of a text and the meaning of a text arrived at by combining individual elements of it to understand the overall meaning, as suggested by Ahuvia (2001). Some codes were created at the first round of reading and others arose or emerged in the second or third reading of the transcripts. I found this system of coding quite useful and beneficial because it involves iteration and reiteration and it is a reciprocal activity rather than discrete one. Also, I was able to refer back to and retrieve the data if the early codes were modified subsequently. The same applied to the later codes. This necessitates the researcher going through a data set more than once to ensure the consistency, refinement, modification, and exhaustiveness of the coding (Cohen et al., 2007). Finally, this part of the analysis process of segmenting and labeling the meaningful units for strategy identification is tabulated below and it is illustrated with excerpts taken from
participants’ verbal reports on their TA sessions and IRI.

**Table 4.5 Examples of meaningful units and codes/labels**

<table>
<thead>
<tr>
<th>Segments of meaningful units of varying size</th>
<th>Codes/Labels</th>
</tr>
</thead>
<tbody>
<tr>
<td>“I think it means to look at something closely and carefully in order to check it because this word can be broken down into two parts—‘in’ and ‘spect’. The former refers to ‘towards the inside’; the latter refers to ‘looking’.” (Data from the IRI).</td>
<td>using word parts to solve unknown vocabulary</td>
</tr>
<tr>
<td>“To inspect some sections of the cloth in that museum’s collection…mm…inspect.” (The TA data)</td>
<td>being re-read</td>
</tr>
</tbody>
</table>

Key: Immediately retrospective interview (IRI); Think-aloud (TA)

**Phase 3: Categorizing**

After the initial segmenting and labeling process was completed during the open coding stage, I could access the data easily in order to find, pull out, and cluster the meaningful chunks or units. This was to link those data segmented and labeled to a particular concept to facilitate the categorization. Axial coding, as Strauss and Corbin (1998) explain, involves a set of procedures through which data are recombined in new ways after open coding, by making connections between a category and its sub-categories. During the axial coding, the identified categories were refined and narrowed down with regard to the sub-categories. I therefore began to link those data segments coded or labeled as strategies to the focused categories that emerged. This was further to group the segments labeled or coded as strategies into similar categories. During the process of categorization, the segments labeled as strategies were examined, compared, differentiated, conceptualized, and sensitized into similar categories as the coding developed. Meanwhile, the metacognitive awareness and use of reading strategies within the coding classification was, as far as possible, summarized by, worked out by and based on reviewing and combining the coding classification from the previous studies on the LLS used for reading. These reading strategies refer especially to metacognitive studies related to learning to read that focus on the strategies of which learners are aware and use to plan, control, monitor, mediate, and evaluate their reading
comprehension process (Zhang, 2001; Block, 1986; Block, 1992; Carrell, 1989; Li & Munby, 1996; Jimenez et al., 1996; Zhang et al., 2008; Yang, 2002; Mokhtari & Sheorey, 2002; Mokhtari & Reichard, 2004; Sheorey & Mokhtari, 2001; Sheorey et al., 2008; Zhang, Gu & Hu, 2008). However, in the process of constructing the classification, I looked for both commonalities and counterexamples to minimize the bias of the data sources, the preconceptions, and the attraction to salient and exotic data, as noted by Brown (2001). The various categories derived from the codes and labels were then compared, based on the differences and similarities among them. I therefore classified ‘using cohesive ties’ and ‘guessing meaning from context through inferences’ as separate categories. The former makes use of structural relations while the latter focuses more on semantic relations, even though the participants mainly used them to guess the meaning of unfamiliar words or phrases. The same applied to the strategy types of ‘going back and forth in the text’ and ‘scanning’ even though the strategy type of ‘going back and forth in the text’ was mainly used with the strategy type of ‘scanning the particular information in the text’ to answer the comprehension questions, while the participants were reading back and forth in the text. 23 strategies were, therefore, identified. Of these, the strategy type of ‘using filler words’ was invented by the participants when they failed to get meanings from context through inferences. Meanwhile, codes, as noted by Cohen et al. (2007), can be at different level of specificity and generality, which is a common concern when content analysis is used to code interview transcription. With this in mind, I paid attention to making connections between a category and its subcategories, and the strategies of which the students were aware and used were therefore divided into three main categories. In this study, they are the categories of supporting, metacognitive, and cognitive reading strategies. The supporting category, consisting of three strategy types, refers to the support mechanism used deliberately by the learners to aid their comprehension of the text. The
meta-cognitive category, consisting of eight strategy types, refers to those techniques used by the readers to monitor or plan their reading with better comprehension. The cognitive category, consisting of 12 strategy types, refers to those actions or procedures used by readers directly to work with the text for reading comprehension. Hence, the main category and its subcategories identified as reading strategies for learning to read are illustrated below.

**Table 4.6 Examples of meaningful units, codes, subcategories and categories identified as reading strategies in learning to read**

<table>
<thead>
<tr>
<th>Main category</th>
<th>MRS</th>
<th>CRS</th>
<th>SRS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sub-category</td>
<td>Deciding what to read closely and what to ignore.</td>
<td>Use of background knowledge</td>
<td>Paraphrasing</td>
</tr>
<tr>
<td>Codes/Labels</td>
<td>Ignoring an unknown word when the overall reading comprehension is not hindered.</td>
<td>Associating background knowledge with text content for better comprehension.</td>
<td>Rephrasing the context using different words but with the same sense.</td>
</tr>
<tr>
<td>Segments of meaningful units of varying size</td>
<td>“I think the main purpose of reading is to get an overall comprehension of what’s being read. So, in this case, as long as the breakdown in the reading comprehension does not hinder my understanding of the text as a whole, I chose to ignore this unknown word—troops.” (Data from the IRI.)</td>
<td>“I think the word parade refers to the activity in which people dance to music and move along the street. That is because it is held in Brazil, according to the text content, so this helps me to associate the activity with the parade held in Brazil.” (Data taken from the IRI.)</td>
<td>“I used my own words to understand this sentence because it says the number of people was larger than the area could accommodate. In this case, I think this is saying that there were so many people that the area could not accommodate them.” (Data from the IRI.)</td>
</tr>
</tbody>
</table>

Key: Meta-cognitive reading strategy (MRS); Cognitive reading strategy (CRS); Supporting reading strategy (SRS); Immediately retrospective interview (IRI)
After the coding was completed, participants’ metacognitive awareness and use of reading strategies was tallied in light of their language proficiency levels and different text types in order to uncover the possible relationship between the strategy patterns derived from the data. I counted the frequencies and percentages of their use, as included in their verbal reports, to see how predominately a specific item of strategy was used and then scrutinized the summarized coding and examined the individual items for strategies used by the frequency and percentages for descriptive quantitative analysis in an attempt to describe and interpret how responsively the data were presented or how they revealed themselves if the frequencies and percentages observed differ. To be effective, the aim was to assess if there were any descriptive differences between the metacognitive reading strategy use and its relationship with different text types and reading proficiency levels. Also, I carefully examined their verbal reports to see how differently or similarly the strategies were used by learners of different reading proficiency levels with narrative and expository texts. The emphasis here of the combination of both analyses is on establishing that the themes or patterns identified across the participants studied are as a whole, partly because numbers are integral to qualitative research, as meaning depends, in part, on numbers (Sandelowski, 2001), and displaying information numerically can make patterns “emerge with greater clarity” (Dey, 1993, p.198), and partly because finding that a patter was common, unusual, or predominant in a group of participants implies something about frequency, especially for the recognition of patterns in data and deviations from those patterns to make a ideographic generalization within the participants studied (Maxwell, 1992).

In presenting the results, in order to best illuminate the strategy in question, I only included extracts of these learners’ verbal reports pertinent to the strategy in question. I furthermore presented the original texts read by the participants in italics to distinguish them from the participants’ verbalization of their reading strategies and processes. For
clarity, I presented the quantitative analysis of their reported number of mentions and percentages before the qualitative analysis of their verbal reports from typical or critical cases, on which I focused for illustration purposes. Finally, the strategies perceived and used by the participants were included in Appendix N, together with definitions and excerpts from their verbal reports and the original texts. Also, excerpts of the transcripts of the think-aloud protocols and the immediately retrospective interview of learners of different reading proficiency levels when reading text texts of the narrative and expository types are included in Appendices O, P, Q, and R.

4.12 Reliability checking

For a qualitative study, it is necessary for the researcher to investigate the reliability of the coding structure. Checking the coding of the transcription was thought to be a useful reliability check and, by doing this, the dependability of the qualitative data can be relatively enhanced (Brown, 2001). The reliability was checked through the coding and classification of the data to ensure that the codes fit into the structure and are consistent with one another and that they are either related to or distinct from others. In other words, the researcher went through the same codes to check the extent of their representation of the same data chunks and scrutinize any inconsistency between coding schemes. In this research, two kinds of reliability checking were conducted with the think-aloud and immediately retrospective interview protocols.

4.12.1 Reliability checking of the think-aloud protocols and immediately retrospective interviews

Two kinds of reliability checks were conducted for the think-aloud protocols and immediate retrospective interviews and they are as follows:

(a) The inter-rater reliability checking

To check the inter-rater reliability of the coding, four English transcripts were randomly selected, derived from both types of text—expository and narrative. Two
English transcripts were obtained from a proficient reader who read texts of both types. The other two English transcripts were from a low proficient reader who read texts of both types. I asked a PhD student in the field of teaching English as a foreign language, whose expertise is in the area of strategies, to re-code the English transcripts. She was given a list of 23 reading strategies, together with definitions and examples. The materials were separated from the transcripts to be coded. I gave her an explanation and demonstrated how to code the strategies. While she was coding the strategies, I was there to answer any questions that might arise. She questioned one strategy assigned by me and thought that it was supposed to be coded as “guessing meanings of unknown words from context through inferences” instead of “using word collocation as word-solving behaviour”. This involved further discussion about the inconsistency of our coding, and the disagreement was solved through explanations and examples given. Also, I referred to the comments that one of my supervisors had made about this, and she thought the same way, so I coded it as “guessing meanings of unknown words from context through inferences” instead. The meeting lasted approximately two hours 30 minutes. The results reveal that the level of agreement on the strategies coded was 93 % for the transcript of the high proficiency user and 90 % for that of the low proficiency user, for texts of both types. These percentages reflect the number of times that two raters agreed on the exact categorization of the strategies.

(b) The intra-coder reliability checking

To check the intra-rater reliability of coding, I had the strategies recoded again. I selected four English transcripts derived from both types of text—expository and narrative—after I finished the initial coding of all the transcripts, which took two months. Two English transcripts were from a proficient reader who read texts of both types. The other two English transcripts were from a low proficient reader who read texts of both types. The overall consistency of the coding for the transcript of the high
proficient and low proficient user was 94% and 95%, respectively, for the texts of both types. These percentages reflect the number of times that the same rater agreed on the exact categorization of the strategies on two occasions. Finally, examples of reliability checking for the calculation of intra-coder and inter-coder agreement on meta-cognitive awareness and use of reading strategies in learning to read were included in Appendix S, along with excerpts of the total frequencies of strategy use included in the transcript of the think aloud protocols and immediately retrospective interviews included in Appendices T and U.

4.13 Ethical considerations

In terms of educational research, it is an interpersonal, social, and political activity (Burgees, 1989). In this sense, it can be conducted in many ways and for many purposes. Nevertheless, according to Enslin and Pendlebury (2001):

Whatever its form and purpose, it is vulnerable to abuse. In some respects, its vulnerabilities are those of any research whatsoever; in others, they are special vulnerabilities of research that seek to interpret the meaning and implications of human practice or to improve the quality of peoples’ lives (p. 392).

It is therefore clear that researchers should attend to ethical issues and their obligations concerning those involved in or affected by their investigations. Thus, the issues concerned cover all research study, from the preparation and purpose to the conclusion and implication. These issues are clarified further below.

4.13.1 Planning the research

As to this aspect, I was aware that the enquiry of the study is ethical. Thus, the current study has been conducted not to achieve an illegal promotion or degree but for the purpose of meeting the gap noticed in language learning and teaching research and taking part in the advance knowledge, as suggested by Hart (2005).

4.13.2 Conducting the research

This aspect was mainly concerned with the process of either generating
knowledge from the participants or getting permission from the gatekeepers. These issues, which are listed by BERA (2004), Diener and Crandall (1978), and Cohen and Manion (1994), are taken into consideration and they will be discussed, explained and presented in the following aspects.

4.13.3 Access and acceptance

Although gaining access to a research field was easy for me since that I have worked as a teacher at the university where the fieldwork was conducted, I still sought verbal permission from the director of the ILC in the first place. I informed him of my research purpose, how the research would be conducted, and how many students would be involved and why, as noted by Wellington (2000). This was intended also further to ensure that no harm or detriment befell the research participants, as suggested by BERA (2004). Also, permission to contact the students and carry out the fieldwork was obtained from both of the supervisors of the study.

4.13.4 Informed consent

According to Diener and Crandall (1978:34), informed consent can be defined as “the procedure in which individuals choose whether to participate in an investigation after being informed of the facts that would be likely to influence their decisions”. By the same token, Cohen and Manion (1994) stated that informed consent entails four elements: (1) the participants are sufficiently responsible and mature to make the correct decision to give the relevant information; (2) the participants are free to decide whether they are willing to participate in the study or not; (3) the participants have received a full explanation about the research; and (4) the participants have received a full explanation of the nature of the research and completely understand its procedures.

Although I have worked as a teacher at the university where the present study was conducted, I did not use any influence or power to obtain consent from the participants, as suggested by BERA (2004). After selecting 14 potential participants
who had the required qualification, on the basis of the score on GEPT developed in Taiwan, I contacted them via talking to them face to face to explain the nature and purpose of the current research, the data collection procedures, and the time required to participate in this investigation. The details of the explanation are included in Appendices J and M respectively. Moreover, I allowed the participants to decide when they were available and where we could meet for the data collection. This was intended not only to be sensitive to the feelings of the interviewees but also to agree on a timetable that could be mutually suitable since the interviewee was giving up his or her time (Wisker, 2001). After the explanation, they all consented to take part in this study voluntarily before I conducted the think-aloud protocol and immediately retrospective interviews with them.

4.13.5 The right to withdraw from the research

According to BERA (2004), the participants are entitled to withdraw from the research at any time and the researcher is strongly suggested to remind the participants of this fact, and that, in such a case, any data related to them will be destroyed. I therefore reminded all of the students involved in the current research of these facts.

4.13.6 Anonymity

Seiber (1992:57) defines anonymity as a situation in which the “names and other unique identifiers of the participants are never attached to the data”. In the same vein, Cohen and Manion (1994) indicated that the essence of anonymity is that any identifiable information related to the participants should not be disclosed. In so doing, my current study does not permit the identification of any participant. All of the participants are given pseudonyms to protect their anonymity. Also, the university where the research took place is anonymised.

4.13.7 Confidentiality

Seiber (1992) stated that confidentiality is concerned with the agreement made
between a researcher and the researched and relates to what may be done with the data. In order to protect the identity and confidentiality of my research participants, their names were replaced with coded numbers or pseudonyms, as stated by BERA (2004). Meanwhile, I asked their permission to use excerpts from the think-alouds, and retrospective interviews as quotes in reporting the research without referring to any information that could jeopardize their anonymity via using the coded numbers or pseudonyms, as suggested by Esterberg (2002). Likewise, I reminded the participants that no one can access the data revealed by them except the researcher and his supervisors (Hart, 2005).

4.13.8 The results and conclusion of the research

I am ethically concerned with the interpretation of the results of the data and the recommendations generated from the findings, as stated by BERA (2004). I do not illegitimately claim the inference of the results to wider cases without considering the limitations arising due to the nature of this research. Because of this, I only make a tentative claim rather than an objective one, that the research results may be transferable to other cases in certain situations and under certain conditions instead of generalizing to the whole population even though it is interpretive itself, because “knowledge cannot be formally generalized does not mean that it cannot enter into the collective process of knowledge accumulation in a given field or in a society” (Flyvberjergerg, in Seale, Gobo, Gubrium & Silverman, 2004, p 422). Finally, the ethical certificate and consent form are attached, in Appendices V and W.

4.14 Conclusion

In brief, this chapter has dealt with how the research was designed, why the interpretive research paradigm was selected to underpin the current exploratory case study, and what the research questions of the current research are. Also, it provides the information about the research instruments utilised, the data collection procedures, and
the data analysis, including the reliability checking of qualitative research. The next chapter presents the findings and analysis with a view to answering the research questions.
CHAPTER 5
Chapter 5 Findings and analyses of the current research

5.1 Introduction

This chapter is concerned with the findings derived from the analysis of the Taiwanese first year university EFL learners’ verbal reports in the think-aloud (TA) protocols and the immediately retrospective interview sessions (IRI); it has three main sections to provide the analysis and interpretation of the findings in relation to the research questions posed (see Methodology chapter). Also, in presenting the analyses, the frequency of the strategies is shown first, and then selected strategies were further illustrated and discussed through data from the TA protocols and IRI sessions. Meanwhile, of the strategies uncovered by the analysis, the strategy types of ‘using cohesive ties’ and ‘using word-solving behaviour’ are discussed and remain here as findings, partly because the former, a linguistic property (cohesion) contributing to text coherence and comprehension, is Halliday and Hasan’s (1976) main concern, and partly because the latter is the main concern of Nation (1990) because vocabulary is the basic building material for comprehension. Next, definitions and examples of the strategies identified in this study are referred to in Appendix N. Finally, tables showing the frequency counts of the strategies used by individuals (the high and low proficient readers) with expository and narrative texts are included in Appendix X.

5.2 Metacognitive awareness and use of reading strategies use in learning to read in L2

Although the frequency results could not reflect the stringent features of each individual in relation to strategy use among them, the available findings reveal that strategic knowledge or metacognitive awareness of reading strategies enabled individuals to know how to use different strategies at different times, how to monitor their production, how to evaluate their comprehension and how to choose the appropriate strategy for better meaning construction. The strategies in learning to read
that these learners used during their meta-strategic reading process can be grouped into three categories. The three categories are comprised of 23 strategy types including 3 supporting reading strategies (SRSs), 8 metacognitive reading strategies (MRSs), and 12 cognitive reading strategies (CRSs). In what follows, I will present which reading strategy types in learning to read grouped into the three categories these participants used predominantly and those that deserve attention, and how they used them in detail through discussion on the data from their TA protocols and IRI sessions. Also, the total number of response units of the individual strategy types in learning to read categorised into SRSs, MRSs, and CRSs, as included in their verb reports of TA and IRI, is shown and tabulated respectively in the sections that follow.

5.2.1 SRSs in learning to read

The table below clearly shows that there were three strategy types in supporting reading strategies, namely, paraphrasing, going back and forth in the text, and using filler words. These three types of strategies were used 52 times in total (see Table 5.1). Among these three types of strategies, ‘paraphrasing’ (48%) and ‘using filler words’ (31%) were frequently used.

<table>
<thead>
<tr>
<th>Types of the SRSs in learning to read by these learners</th>
<th>Frequency/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw</td>
</tr>
<tr>
<td>1. Paraphrasing</td>
<td>25</td>
</tr>
<tr>
<td>2. Going back and forth in the text</td>
<td>11</td>
</tr>
<tr>
<td>3. Using filler words</td>
<td>16</td>
</tr>
<tr>
<td>Total</td>
<td>52</td>
</tr>
</tbody>
</table>

Raw refers to the absolute frequency of the students’ mention of a strategy.

Note: Some percentages total to slightly more or less than 100 due to rounding.

Key: SRSs = Supporting reading strategies

These frequently-used strategy types were presented below and illustrated with the original text content and learners’ verbal reports on TA and IRI. This is to show how these strategies were used.
5.2.1.1 Paraphrasing

The participants tended to refer to grammatical structures while trying to integrate the information between portions of the passages via using this strategy. As seen from the example below, Grace re-phrased the sentence, which was accompanied by consideration given to grammatical and sentence structure (comparative degree). This enabled her to re-organize the sentence structures and consolidate or integrate ideas between portions of the text to facilitate her understanding if the sentence was difficult for her to understand. This is evidenced in the TA and IRI below.

**The expository text:** The number of people was larger than the area could accommodate. //

**Grace, TA:** …comparative degree… I am thinking how to better understand this sentence. I think it means the place could not take people in because the number of them was too larger.

**Grace, IRI:** …this sentence is a bit difficult, and there seems to be the comparative degree relation in this context because of the word *than*, so I tried to link the ideas in the sentence for better understanding. In this case, I rephrased this sentence… just to better understand it and I mean… my understanding is that the reason why the place could not take people in is that the number of people was too large.

5.2.1.2 Using filler words

These participants reported using filler words (something) to compensate for their comprehension breakdown so as ‘to get a rough idea’ if they failed to obtain meanings of unknown words or phrases from contextual clues. As seen from the example, Chuang resorted to using ‘something’ to help him maintain the flow of the reading and coherence of the text to ‘get the rough idea from the information in the passages’ through inferences. The following excerpt shows how the reading comprehension was remediated through using filler words.

**The narrative text:** At night, he slept in his personal tent. For almost a hundred years, that historical tent has been on display in a national park. // Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof. //
**Chuang, TA:** He slept in his personal… at night… for almost… years… *something* in the national park and something was …a hole in….

**Chuang, IRI:** I know *something* in the national park and there was a hole in it but I do not know what exactly it is even though I got this idea from the information in the passages I read.

### 5.2.2 MRSs in learning to read

As clearly shown in Table 5.2 below, there were eight strategy types in MRSs, and these strategies were used by the students *219* times in total. The frequently preferred strategy types were *‘self-questioning’* (53%), *‘comprehension monitoring’* (15%) and *‘deciding what to read closely and what to ignore’* (11%). These three strategies are discussed below in detail with the original text content and learners’ verbal reports on TA and IRI provided.

<table>
<thead>
<tr>
<th>Types of the MRSs in learning to read used by these learners</th>
<th>Frequency/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Raw</td>
</tr>
<tr>
<td>1. Self-questioning</td>
<td>117</td>
</tr>
<tr>
<td>2. Comprehension monitoring</td>
<td>32</td>
</tr>
<tr>
<td>3. Deciding what to read closely and what to ignore</td>
<td>23</td>
</tr>
<tr>
<td>4. Scanning</td>
<td>18</td>
</tr>
<tr>
<td>5. Self-correcting</td>
<td>10</td>
</tr>
<tr>
<td>6. Skimming for main ideas</td>
<td>9</td>
</tr>
<tr>
<td>7. Picking out key words</td>
<td>8</td>
</tr>
<tr>
<td>8. Paying attention to topic sentences</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>219</strong></td>
</tr>
</tbody>
</table>

Raw refers to the absolute frequency of the students’ mention of a strategy.

Note: Some percentages total to slightly more or less than 100 due to rounding.

Key: SRSs = Supporting reading strategies.

#### 5.2.2.1 Self-questioning

The participants were observed frequently quizzing themselves in the reading process. The use of this strategy indicated that these learners actively participated in the reading process and were consciously monitoring and checking their own comprehension. Also, they replied that, by doing this, they could remediate their reading through different ways if they did not comprehend something. As shown in the
example, Yang went back to read the questions given as a way to help her to get the gist. This was often accompanied by varieties of questions she asked herself. Such a technique is perceived as useful in facilitating reading comprehension. The excerpts below further illuminate how this strategy was used.

**The narrative text:** In 1778, George Washington was commanding troops during America’s Revolutionary War. // At night, he slept in his personal tent. //

**Yang, TA:** … I think I do not know what kind of war it is and the meaning of the word troops and … mm … I am trying to think what the text content being read is about but it seems to me that I cannot get it because of the unknown words. In this case, I decided to read the questions given to see whether I can get a rough idea of what the text is mainly about.

**Yang, IRI:** When I read, I always stop to think what the text content being read is about. I talk to myself in my mind and ask questions like “Why is that so?”; “What does that mean?”; “What is that or this?” while reading. So, I ask questions because I am not sure about what I am reading. In other words, if I do not know what it means, I try to find some ways to help me with this. That’s why I tried to read the reading questions given first.

### 5.2.2.2 Comprehension monitoring

The use of this strategy revealed a reflection of learners’ ability to assess the state of information within their own text comprehension. These learners reflected back on what they had read and examined its relationship with other parts of the text while using this strategy. Take Tina for instance; clearly in her TA and IRI, she said that she used other Chinese words equivalent to ‘the time or history in the past’ while obtaining the meaning of the unknown word, historical. This meant that she was aware of monitoring her comprehension by finding clues from context. The following extracts best illuminate how this strategy was used.

**The narrative text:** In 1778, George Washington was commanding troops during America’s Revolutionary War. // At night, he slept in his personal tent. // For almost a hundred years, that historical tent has been on display in a national park. //
Tina, TA: …*For almost a hundred years* it means that for almost a hundred years …*tent*…*that historical* …*er*…. I am trying to translate the word *historical* into L1, but basically speaking, I think it is a comparatively old tent and connected to the history in the past because it has been on display in a national park for almost a hundred years after Washington used it.

Tina, IRI: I know its meaning, however, I tried to find the Chinese meaning (translation) best equivalent to that of the English to see whether it is coherent in this context or not. And I think it is coherent because the tent was the object left during America’s Revolutionary. In this case, the word historical has the Chinese meaning equivalent to that of the time or history in the past.

5.2.2.3 Deciding what to read closely and what to ignore

These learners skipped unknown words or phrases that were not essential to overall comprehension while assessing their text comprehension. As shown in the example below, Kay in her IRI claimed that there was no need to focus on every word and she ignored some parts of the text content, like irrelevant or distracting details, and unknown words such as *cloth* and *commanding* or phrases unimportant to the context such as *America’s Revolutionary War*, if her overall comprehension would not be hindered by this. The following excerpts further illuminate how the strategy was used.

**The narrative text:** In 1778, George Washington was commanding troops during America’s Revolutionary War. // At night, he slept in his personal tent. // For almost, a hundred years, that historical tent has been on display in a national park. // Unfortunately, for most of that time, it was somewhat ruined by a large hole in its roof. // No one was sure how the hole had been made and where the missing piece of cloth might be at that time. //

Kay, IRI: I think I know the text is mainly about the missing piece from the tent so I chose to ignore these words such as *cloth* and *commanding*. Also, I know there was a person with his troops during America’s Revolutionary War even though I do not know what war it is and who the person is. I mean there is no need to focus on every word if the overall understanding of the text content is not hindered.

5.2.3 CRSs in learning to read

As clearly shown in Table 5.3 below, there were 12 strategy types in CRSs and these strategies were used 623 times in total. The more frequently preferred strategy types were ‘*translating L2 into L1*’ (31%), ‘*re-reading*’(18%), ‘*guessing meaning*’
from context through inferences’ (13%), and ‘suspending a reading problem’ (13%). Furthermore, the strategy types of ‘using cohesive ties’ and ‘using word-solving behaviour’ were also retained here as part of the findings (see Section 5.1). The strategy types frequently preferred were discussed and illustrated with the original text content and learners’ verbal reports on TA and IRI.

<table>
<thead>
<tr>
<th>Table 5.3 Type and frequency/percentage of overall CRSs by these learners</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of the CRSs in learning to read by these learners</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td>Raw</td>
</tr>
<tr>
<td>1. Translating L2 into L1 Re-reading</td>
</tr>
<tr>
<td>2. Re-reading</td>
</tr>
<tr>
<td>3. Guessing meaning from context through inferences</td>
</tr>
<tr>
<td>4. Suspending a reading problem</td>
</tr>
<tr>
<td>5. Using cohesive ties</td>
</tr>
<tr>
<td>6. Word-solving behaviour</td>
</tr>
<tr>
<td>7. Contextualization</td>
</tr>
<tr>
<td>8. Using background knowledge</td>
</tr>
<tr>
<td>9. Summarizing parts of text</td>
</tr>
<tr>
<td>10. Activating prior knowledge</td>
</tr>
<tr>
<td>11. Anticipating text contents</td>
</tr>
<tr>
<td>12. Visualizing text information</td>
</tr>
<tr>
<td>Total</td>
</tr>
</tbody>
</table>

Raw refers to the absolute frequency of the students’ mention of a strategy. Note: Some percentages total to slightly more or less than 100 due to rounding. Key: SRSs = Supporting reading strategies.

5.2.3.1 Re-reading

Re-reading seemed to be an important strategy for these participants to better comprehend difficult portions of the text. For example, Tina’s use of this strategy indicated her lack of understanding of the word, accommodate, but, in her IRI, she stated that re-reading allowed her not only to reflect on the current text content to see whether she could understand its basic meaning or not, but also further to clarify whether her understanding of the content was correct or not. The following extracts illuminate how this strategy was used.
The expository text: The number of people was larger than the area could accommodate.//

Tina, TA: Mm… accommodate…I do not know what meaning it is…I think I am going to re-read the sentences.

Tina, IRI: I re-read the sentence to clarify whether my understanding of the word accommodate is correct or not because I think I can understand what this sentence basically means. So, the purpose of re-reading is to clarify whether my understanding of what I am reading is correct or not. In this case, I think it means to take people in.

5.2.3.2 Translating L2 into L1

These learners read the text and frequently used their L1 (Chinese) as a basis when they were incapable of thinking directly in the L2 (English), because they wanted to understand it. Clearly, in this example, Yeh highlighted the strategy of translation in helping him understand what the text basically meant, as evidenced below.

The expository text: Brazil's other pre-Easter parades are non-competitive ones, held in local neighborhood areas, and anyone can participate.//

Yeh, TA: ...Mm….I am translating the sentence that I am reading now in order to understand what it basically means.

Yeh, IRI: I always translate English passages into Chinese and I keep the Chinese meaning of the sentence in mind while processing the text information. I mean the reason why I do it this way is that I simply want to understand what the passages basically mean If I have to do so.

5.2.3.3 Guessing meaning from context through inferences

These learners reported frequent use of this strategy. Clearly, as seen from the example of how this strategy was used below, Tina, paid attention to other text items surrounding the unknown phrase has been credited with while guessing.

The narrative text: Since then, the tent and missing piece have been reunited and Loreen Finkelstein has been credited with solving an old mystery.//
Tina, TA: Loreen Finkelstein...this person...I mean the expert was thought...er...not sure of what the phrase has been credited with means but from the rest of the sentence, it means that she was thought to be the one who solved this old mystery.

Tina, IRI: Er... I roughly got its meaning from the rest of the words surrounding the phrase in the sentence because she solved an old mystery so that I think it is about ...she was convinced of solving this old mystery.

5.2.3.4 Suspending a reading problem

These learners considered it unnecessary to focus on the unknown parts of the text content. As illustrated in the following examples below, Li decided to read other parts of the text content to see whether she could comprehend the unknown phrase, come to a halt, suspended by her. Tina activated her vocabulary knowledge while tackling the unknown word, inspect. Chuang activated his background knowledge related to the text while dealing with the unknown word, parade.

The expository text: Other groups join in later as the parades move along. // However, these parades often come to a halt and also take hours to finish because so many people want to take part. //

Li, TA: Mm....I do not know what come to a halt means. I will skip it first and keep reading to see whether I can integrate the ideas between the passages that follow to get its meaning or not.

Li, IRI: I think it means a delay or a stop because so many people want to take part immediately after the parades move along and it takes hours to finish.

The narrative text: One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent. // This led to an invitation for Loreen to inspect some sections of cloth in that museum’s collections. //

Tina, TA: This led to an invitation for Loreen to... this led to this person...the expert in historical object to... inspect...eh... I don’t quite remember the meaning of the word inspect... I chose to leave it first and read the following portions of the text content.

Tina, IRI: I used my vocabulary knowledge to tackle this problem because I know this word inspect can be separated into two parts. In other words, in has the meaning of
'towards the inside' and *spect* has the meaning of ‘looking or seeing’. In this case, I think it means to look at something carefully in order to check it.

*The expository text:* Every year in February, around forty days before Easter, parades are held all over Brazil.

**Chuang, TA:** … [p-a-r-a-d-e]… I chose to skip it and come back to it later. But I think it refers to an activity because it is held in the place called Brazil.

**Chuang, IRI:** I head of it being held in Brazil.

### 5.2.3.5 Using cohesive ties

As aptly stated by Halliday and Hasan (1976), cohesion is a way of getting text to hang together as a whole so as to create text coherence. Cohesive ties generally refer to a network of a unit of semantic word relations between a number of words or phrases within sentences (syntax) in a text, the pattern of which depends on the distance of the two items creating the relation and the type of the relation they form (ibid). This pattern includes the relations between the part of speech of the content words in a sentential level, such as nouns, verbs, adjectives, and adverbs that refer to some object, action, or characteristic and multi-word units (lexical cohesion), the reference items regarded as forms that can substitute for other elements in language, such as pronouns and the conjunction items regarded as forms that can join sentences to form a coherent unit (Hasan, 1984). In this study, the participants used some cohesive ties, such as references, conjunctions, and lexical cohesions, through which they were forming structural relations between sentences to produce a better sentential meanings leading to semantic relations in text coherence in order to understand a particular portion of the text content as a whole. This was mainly to guess the meaning of unknown words and phrases from context through inferences, by making connections within a particular portion of the text. In the examples below, lexical cohesion, reference cohesion and conjunctions were used by different students to support themselves in understanding the reading material.
**Lexical cohesion**

As illustrated in the excerpts below, Yeh’s comprehension processes revealed that his understanding of the semantic relations between different content words (the part of speech) in a sentential level helped him maintain the flow of the reading and coherence of the text.

*The narrative text:* One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent. //

Yeh, TA: …Mm…visiting… I am thinking what the phrase the head of another museum means. I think the head refers to a person…I mean when you mention (verb) something, there must be a person (noun) for you to talk to so that I think ‘the head’ refers to a person in the text.

**Reference cohesion**

As presented in the example that follows, Tina was able to maintain the flow of reading and coherence of the text because she understood that ‘them’ must refer to ‘parades’ in the previous sentence.

*The expository text:* Every year in February, around forty days before Easter, parades are held all over Brazil. // In some of them, participants compete for prizes. //

Tina, TA: …in some of them, participants…eh… I am not sure whether them refers to the participants or the parades…

Tina, IRI: Mm…Originally, I was thinking whether it refers to either the participants or the parade…However, from the rest of the sentence, I think them refers to the parades because participants compete for prizes in some of the parades.

**Conjunctions**

As illustrated in the excerpts below, Yeh stated that ‘come to a halt’ must have a negative meaning, parallel to ‘delay’, because there is a conjunction ‘because’ between sentences revealing the cause and effect.
The expository text: However, these parades often come to a halt and also take hours to finish because so many people want to take part.

Yeh, TA: …come to a halt…come to a halt…come a halt…I do not know what this phrase means…keep reading…

Yeh, IRI: I still cannot get its meaning but this phrase must have a negative meaning parallel to ‘delay’ because there is a conjunction ‘because’ used to show the reason why these parades also take hours to finish.

5.2.3.6 Word-solving behaviour

These participants deployed their vocabulary knowledge mainly to establish the meaning of unknown words and phrases in order to have further comprehension within a particular portion of text, such as using orthography, word collocation, synonyms, and morphology. Its application by different students is clarified further below.

Using synonyms

As shown by the example below, Li was aware of the importance of lexical resources and it is evident that synonyms facilitated her reading comprehension. Also, she thought that reading in L2 would be very difficult if she did not have a good lexical knowledge. In this case, it seemed that vocabulary was the basic material for her meaning construction. The following examples show the importance of lexical resources.

The narrative: Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof.

Li, IRI: I know the meaning of ‘being damaged’ is equivalent to that of ‘being ruined’ so I chose C as the answer…I agree that a word that has the same meaning as another word can help me with a better understanding of the text. If I have a large vocabulary…I can use this knowledge to help me with L2 reading…because vocabulary words are the basic components of an understanding of the meaning in L2 reading.

Using word collocation

This term, collocation, was first introduced by Firth (1957) to define a combination
of words associated with each other, for example to take a photo. According to Benson, Benson, and Ilson (1997), one example of the lexical collocation includes the combinations of nouns, verbs, adverbs and prepositional phrases, for example, come to an argument (verb + prepositional phrase: preposition + noun phrases). Also Nattinger (1988) stated that a sequence of words that co-occur more often than would be expected by chance (lexical collocation) because the meaning of a word or phrase mostly depends on the other words that it collocates with. As exemplified below, in the words of Tina, she commented: “The combination of English words is habitual and arbitrary”. So, she used this knowledge that she learnt in class while processing the information to tackle lexical problems. Meanwhile, she thought that this knowledge was helpful for improving comprehension.

**The expository text:** However, these parades often come to a halt and also takes hours to finish because so many want to take part. //

**Tina, TA:** …eh…….these parades…. I am thinking what the meaning of come to a halt is… I think it is a phrase instead of the isolated words…mm…and it means a sudden stop.

**Tina, IRI:** I learnt about this phrase and this sequence of words mean a sudden stop. I remember my English teacher told us that there were some English words that are fixed and combined. I mean they have to co-occur and they are the fixed combinations and have their own meaning. This knowledge is important in L2 reading because it is helpful for me to aid my L2 reading comprehension in terms of lexical resources and the combination of English words is habitual and arbitrary.

**Using orthography**

As illustrated by the excerpts below, Yeh, mentioned a discernible difference in spelling such as capitalization and his realization of this feature enabled him to understand that a certain word such as Easter refers to a holiday.

**The expository text:** Every year in February, around forty days before Easter, parades are held all over Brazil. //
Yeh, TA: Every year in February…around forty days before…Easter…mm…I am thinking about what the word Easter means. It does not mean the direction opposite from the west because its first letter is capitalized. So, it must refer to a particular day because it says around forty days before it. With the first letter of it capitalized. I recall its meaning—Easter holiday.

**Using morphology**

Learners’ mention of this knowledge for meaning making is one way of revealing their understanding of vocabulary knowledge. As illuminated in the example below, Kay was aware of affixes and this knowledge enabled better comprehension to occur when faced with the unknown word, inspect.

**The narrative text:** This led to an invitation for Loreen to inspect some sections of cloth in thatmuseum’s collection.//

Kay, IRI: I used my vocabulary knowledge to tackle this vocabulary problem because I know this word inspect can be separated into two parts. In other words, in has the meaning of ‘towards the inside’ and spect has the meaning of ‘looking or seeing’. In this case, it means to look at something carefully in order to check it.

5.3 Metacognitive awareness and use of reading strategies in learning to read in L2 and L2 proficiency

This section attempts to discuss the reading strategies that these high proficient readers (HPRs) and low proficient readers (LPRs) use. The analyses of their reported number of mentions of meta-strategic knowledge and use showed that these LPRs frequently used several strategies, grouped into the categories of SRS, MRS, and CRS, that these HPRs also frequently used. However, results also appeared to suggest that students’ metacognitive awareness and reading strategy use varied across EFL proficiency levels, with these HPRs showing clear awareness or realization of using them and knowing when, where, and how to use them appropriately and effectively. In contrast, these LPRs’ strategic actions seemed much more confined and challenged owing to their lack of language proficiency (e.g. lexical resources, grammatical or
linguistic knowledge), and background knowledge. In addition, these HPRs outperformed their low proficient reader counterparts regarding the different strategy types used by them. Although these aforesaid differences were observed and especially true when their meta-strategic knowledge and use of reading strategies was compared between proficiency levels in terms of quantity and quality of the strategy use, it may be impossible to draw strong conclusions on a direct link between strategy use and proficiency level because the frequency of strategy use might relate to the choices of strategy made by individuals, rather than frequency use over the whole group and so caution is advised in interpreting this association due to the exact nature of this study. Thus, in what follows, I will present specific reading strategy types in learning to read grouped into the three main categories these learners of different proficiency levels frequently used, and discuss and compare how they were used in detail through the data of TA protocols and IRI sessions with consideration given to EFL proficiency levels. In addition, the illumination of the strategy use will be presented with the original text content provided as well. This is to further illuminate the differences reflected in their selection of strategies and use of them between two groups. Meanwhile, of the strategies uncovered by the analysis, those that revealed an unusual strategy use pattern between these HPRs and LPRs are presented and discussed. Finally, the total number of response units of each specific strategy types in learning to read, as included in their verb reports of TA and IRI, is shown and tabulated respectively in the following sections.

5.3.1 SRSs in learning to read and L2 proficiency

Table 5.4 below shows that there were three specific strategy types in supporting reading strategies (SRSs). Although it is difficult to make a direct link between strategy use and proficiency level based on the available data because the small sample size may reveal individual rather than group differences, some observations can be
made to suggest potential differences between these HPRs and LPRs in terms of strategy use.

<table>
<thead>
<tr>
<th>Types of the SRSs in learning to read used by the HPRs and LPRs</th>
<th>Frequency/Percentage</th>
<th>HPRs</th>
<th>LPRs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paraphrasing</td>
<td>Raw</td>
<td>25</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>78</td>
<td>0</td>
</tr>
<tr>
<td>2. Going back and forth in the text</td>
<td>Raw</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>16</td>
<td>30</td>
</tr>
<tr>
<td>3. Using filler words</td>
<td>Raw</td>
<td>2</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>6</td>
<td>70</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>Raw</strong></td>
<td><strong>32</strong></td>
<td><strong>20</strong></td>
</tr>
<tr>
<td></td>
<td><strong>%</strong></td>
<td><strong>100</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>

Raw refers to the absolutely frequency of the students’ mention of a strategy.
Note: Some percentages total to slightly more or less than 100 due to rounding.
Key: HPRs = High proficient readers, LPRs = Low proficient readers.
Key: SRSs = Supporting reading strategies.

For the HPRs, the frequency of each specific strategy type ranged from 2 to 25 with a total of 32 times. The more frequently preferred strategy type by them was ‘paraphrasing’ (78%). In contrast, for the LPRs, the frequency of each specific strategy type ranged from 0 to 14 with the total of 20 times. The strategy type of ‘using filler words’ (70%) was most frequently preferred. Meanwhile, ‘paraphrasing’ was never used when they were reading English texts. A possible reason for this might be due to the small number of the participants. These strategy types mentioned above were illuminated with the original text content and learners’ verbal reports on TA and IRI provided.

5.3.1.1 Paraphrasing

As seen from the example below, Yeh, a typical HPR, when faced with long sentences and difficult wording, tended to pause and reflect on the text content, and his use of paraphrasing was accompanied by consolidating the idea between sentences. This is evidenced in both his TA and IRI below.

*The expository text:* The whole parade lasts for around 80 minutes and is held in a specially-built area with seats for 88500 people//.
**Yeh, a HPR, TA:** I think the whole parade refers to the competitive performance and this sentence is somewhat long… its wording is difficult. Thus, I try to use my own words to see whether I can understand it better or not.

**Yeh, a HPR, IRI:** I sometimes integrate the ideas between the sentences to assess whether my paraphrasing of the sentence being read is correct or not. That was why I said that the whole parade can be rephrased as the competitive performance. Also, the sentence was long and its wording was somewhat difficult to comprehend, especially the phrase: *a specially-built area with seats for 88500 people*. So, I rephrased it as an area specially-built for 88500 people to sit, for better comprehension.

### 5.3.1.2 Using filler words

As we have seen, although these HPRs, unlike their LPR counterparts, rarely used ‘filler words’, such as ‘something’, it seemed that vocabulary was important for both the HPRs and LPRs for meaning making. As exemplified below, Yeh, a HPR, and Dia, a LPR, used ‘something’ to maintain the flow of their reading and coherence of the text if they failed to use contextual clues to infer meanings of unknown words such as *parade* (Yeh) and *tent* and *cloth* (Dia). Still, as a LPR, Dia reflected that her understanding was much confined by her lack of vocabulary knowledge.

*The expository text:* Every year in February, around forty days before Easter, parades are held all over Brazil.//

*Yeh, a HPR, IRI:* I don’t know the exact meaning of the word *parade* but I think maybe it is about something that people do to celebrate… like a kind of activity because the text talks about dancing, music and people….

*The narrative text:* To confirm her suspicion, she traced its outline and later compared it with the hole in the tent.//They matched perfectly.//Since then, the tent and missing piece have been reunited.//

*Dia, a LPR, TA:* I think it means that something (*tent*) and something missing (*cloth*) from Washington’s tent matched but I still don’t know what it is due to my lack of vocabulary knowledge even though I know something was missing from Washington’s tent based on the information I have obtained from the previous passages I read.
5.3.2 MRSs in learning to read and L2 proficiency

As shown clearly in Table 5.5 below, the frequency of each specific strategy types for these HPRs ranged from 2 to 49 with the total of 114 times. In contrast, for these LPRs, the frequency of each specific strategy types ranged from 0 to 68 with the total of 105 times. Although slight differences are observed in MRSs between these HPRs and LPRs, I have to admit that some individuals tended to use certain strategies more than others.

<table>
<thead>
<tr>
<th>Types of the MRSs in learning to read used by the HPRs and LPRs</th>
<th>Frequency/Percentage</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(HPRs)</td>
<td>(LPRs)</td>
</tr>
<tr>
<td></td>
<td>Raw   %</td>
<td>Raw   %</td>
</tr>
<tr>
<td>1. Self-questioning</td>
<td>49    43</td>
<td>68    64</td>
</tr>
<tr>
<td>2. Comprehension monitoring</td>
<td>20    18</td>
<td>12    11</td>
</tr>
<tr>
<td>3. Skimming for main ideas</td>
<td>5     4</td>
<td>4     4</td>
</tr>
<tr>
<td>4. Deciding what to read closely and what to ignore</td>
<td>16    14</td>
<td>7     7</td>
</tr>
<tr>
<td>5. Self-correcting</td>
<td>7     6</td>
<td>3     3</td>
</tr>
<tr>
<td>6. Picking out key word</td>
<td>4     4</td>
<td>4     4</td>
</tr>
<tr>
<td>7. Paying attention to topic sentences</td>
<td>2     2</td>
<td>0     0</td>
</tr>
<tr>
<td>8. Scanning</td>
<td>11    10</td>
<td>7     7</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>114</strong> <strong>101</strong></td>
<td><strong>105</strong> <strong>100</strong></td>
</tr>
</tbody>
</table>

Raw refers to the absolutely frequency of the students’ mention of a strategy.
Note: Some percentages total to slightly more or less than 100 due to rounding.
Key: HPRs = High proficient readers, LPRS = Low proficient readers.
Key: MRSs = Metacognitive reading strategies.

For example, the HPRs frequently preferred the strategy types of ‘self-questioning’ (43%), ‘comprehension monitoring’ (18%), ‘deciding what to read closely and what to ignore’ (14%), and ‘scanning’ (10%). The LPRs frequently preferred the strategy types of ‘self-questioning’ (64%) and comprehension monitoring (11%). Meanwhile, the strategy type of ‘paying attention to topic sentences’ that the LPRs never used was used by the HPRs, so this unusual pattern deserved special attention even though the data are based on a small number of
participants and the number of frequency of HPRs might be from a few particular participants. This was the case for the strategy types of ‘skimming for main ideas’ (4%) and ‘picking out key words’ (4%) because these HPRs and LPRs differed in the choices of other strategy use, but when it came to these two strategy types, they scored similarly, even though the frequency count of these two strategy types might be from a particular few participants. Thus, despite the slight difference, it is important to see how these strategies were utilised by learners with different L2 proficiency. Finally, the strategy types mentioned above are presented below and illustrated with the original text content and learners’ verbal reports on TA and IRI provided. This is to show how they were used between the two reader groups.

5.3.2.1 Self-questioning

Although asking themselves questions mentally during the reading process allowed these HPRs and LPRs a chance to achieve or enhance their reading comprehension goal, their verbal reports showed a difference in their use of this strategy. In the examples of the HPRs, Li and Kay, they were not only consciously monitoring their text comprehension while reading but also actively engaging in processing the text information, manipulating their background knowledge (Li), and using contextual clues (Kay). The typical extracts below from their verbal reports show the application of this strategy.

**The narrative text**: In 1778, George Washington’s was commanding troops during America’s Revolutionary War.//

**Li, a HPR, TA**: Is it America’s Revolutionary War? Mm… I am not sure… George Washington… I think it definitely refers to America’s Revolutionary War.

**Li, a HPR, IRI**: I recalled that George Washington was a military leader during America’s Revolutionary War. I related what I read outside the text to what I know of the text. I used my background knowledge.
The narrative text: In 2002, the tent was acquired by a non-profit institution which planned to display it in a new museum.//

Kay, a HPR, TA: non-profit institution…Is it an organization? I am not sure of its meaning (institution). …I think it is a kind of organization because we normally put ‘institution’ or ‘organization’ after the word ‘non-profit’.

Kay, a HPR, IRI: …I got its meaning because of the word non-profit. I mean I used the words surrounding it to infer its meaning.

In contrast, although the LPRs were willing to do so, they questioned the meaning of the word, phrase, or sentence as isolated units and let them simply pass. Chuang’s report was typical of those LPRs; his self-questioning process was without frequently manipulating the information in the text because he did not know who George Washington was nor what America’s Revolutionary War was (a lack of background knowledge related to the text content). Also, he thought the text was beyond his comprehension due to his deficiency in lexical resources or grammatical knowledge. In this case, he just let it pass. The extracts from his verbal reports below, further illuminate the deployment of this strategy by learners with low L2 proficiency.

The narrative text: In 1778, George Washington was commanding troops during America’s Revolutionary War.//At night, he slept in his personal tent.//For almost a hundred years, that historical tent has been on display in a national park.//Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof.// No one was sure how the hole had been made and where the missing piece of cloth might be at that time.//

Chuang, a LPR, TA: In 1778, a person’s name but who is it? I don’t know what commanding troops means…Is that America’s Revolutionary War? I am not sure of it…ha….Keep reading to see what information I can get from the following sentences. He slept in his personal….at night….For almost…years…ah……why the reading passages are getting difficult……a hole in ….ah…I think why the missing piece is mentioned here and what it is…

Chuang, a LPR, IRI: I am not sure of whether it refers to America’s Revolutionary War because I cannot find any information in the text related to this. I don’t know whose name it is
and I don’t know how to pronounce it, either. I do not know the meaning of the word *commanding troops* I still do not know why the missing piece is mentioned. I think the text content is beyond my comprehension…I mean, it is difficult to understand because of the words and grammar…

**5.3.2.2 Comprehension monitoring**

These HPRs used other parts of the text information while monitoring their comprehension. This is reflected in the example of a typical HPR, Grace. She was able to examine other parts of the text content while monitoring and assessing the meaning of an unknown word, *cloth* due to her L2 reading proficiency.

The narrative text: *For almost a hundred years, that historical tent has been on display in a national park.// Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof.// No one was sure how the hole had been made and where the missing piece of cloth might be at that time.//

**Grace, a HPR, TA:** Mm…*cloth*…apparently it has the meaning equivalent to that of the word ‘clothes’ but I think that it does not have that meaning.

**Grace, a HPR, IRI:** Originally, I thought it had a meaning equivalent to that of the word ‘clothes’. However, when I assessed the coherence of my interpretation of the word through the context cues, I found that it was incoherent because the cloth referred to the piece that was missing from the hole in the tent’s roof. In this case, I thought the cloth referred to the materials used for making clothes rather than the clothes we wear.

In contrast, although the LPRs also constantly paused and monitored their reading comprehension by doing so, Bia, typical of those LPRs, repeatedly referred to unknown words as a hindrance to her comprehension. In addition, she did not assess her reading comprehension of the text content in a flexible way by examining its relationship with other parts of it because she focused on the literal meaning of the words and she seldom paid attention to the context in which these words were represented. Even if she did so, her understanding of the text content was somewhat vague due to her lack of lexical resources and grammatical knowledge. The example best illuminates how this strategy was used by these LPRs.
The narrative text: Among them was a piece that looked promising.//To confirm her suspicion, she traced its outline and later compared it with the hole in the tent.//They matched perfectly.// Since then, the tent and missing piece have been reunited.

Bia, a LPR, TA: Among them….eh…. a promise made? But it is incoherent if I use my understanding of the word to interpret the whole sentence…I am not sure of what it means…er…I don’t know the meanings of the words [c-o-n-f-i-r-m] and [s-u-s-p-i-c-i-o-n]…er…I am confused with the following sentences…I do not know the meanings of these words, [c-o-m-p-a-r-e-d], [t-r-a-c-e-d], and [r-e-u-n-i-t-e-d]. I will keep reading to see… missing….ah….I do not know the meaning of the words [t-e-n-t] and [p-i-e-c-e]…they matched….but I do not know what they are.

Bia, a LPR, IRI: I just think the word promising refers to a given promise, based on the context. I still do not know what they (tent/piece) refer to but I roughly know that they matched…I mean, there are too many unknown words and the sentence structure is difficult.

5.3.2.3 Deciding what to read closely and what to ignore

When these HPRs reported their use of this strategy, they seemed to understand the purpose of using it. Take a typical HPR, Grace, for instance, who ignored a phrase (the head of another museum) unessential to the main text content because she thought her overall comprehension of the text was not hindered; in other words, she differentiated the irrelevant and distracting ideas in the text if she was to obtain the main text ideas. This is evidenced in both her think-aloud protocols and the immediately retrospective interviews below.

The narrative text: One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent.//This led to an invitation for Loreen to inspect some sections of cloth in that museum’s collection.//

Grace, a HPR, TA: … mm….I am thinking of what this phrase the head of another museum means.

Grace, a HPR, IRI: I ignored its meaning. I think this phrase is not important. Instead, the important information is the passages that come after it because she was invited to inspect some
sections of cloth in that museum’s collection after she mentioned the missing piece and the focus on the main idea of the article is to find the piece missing from Washington’s tent, so I chose to ignore it. I mean it is unnecessary to focus on the word only.

5.3.2.4 Scanning

Take these typical HPRs Li and Yeh for instance; they were searching for the answers in the text content while reading the comprehension questions. Also, their IRI data revealed that, by doing this, they could directly go to the text content related to the questions either before or during reading in order to locate the particular information to save time, especially in test situations. The following extracts from their verbal reports showed how this strategy was utilized.

The expository text: Rio de Janiero, the best known city in Brazil, holds several competitive parades.//The competition is very tough as the weakest school will not be able to compete in the following year.///

**Yeh, a HPR, TA:** I am searching for the answer to question 38.

**Yeh, a HPR, IRI:** This question was about the competitive parades, so I went directly to this part of the text and found that the weakest school will not be able to compete in the following year. So, the answer is that one losing school will not enter the next contest.

**Li, a HPR, TA:** I am going to have a look at the questions given first, as usual.

**Li, a HPR, IRI:** This way can not only save you time but also help you directly to go to the parts of the text content that are related to the reading questions, especially in test situations. In this case, you can scan the parts and get the answer quickly. It’s about saving time.

5.3.2.5 Paying attention to topic sentences

Attending to topic sentences reveals that these HPRs were aware of the basic text structure organization. In the IRI, a HPR, Yeh, claimed that a topic sentence is important for reading comprehension and he replied that, through an awareness of this unique strategy, he could grasp the gist of the text that he was about to read and this paved the way for him to locate the main ideas of the text. Moreover, his verbal reports
further revealed a *mismatch between the strategy knowledge and strategy application in a real reading task*. The following excerpts from his IRI revealed how this unique strategy was utilized.

| The narrative text: No one was sure how the hole had been made and where the missing piece of cloth might be at that time.// |

**Yeh, a HPR, IRI:** Mm…I was looking for the topic sentence while reading…I think the topic sentence is important for reading comprehension. For example, while I was reading the text, I was looking for the topic sentence because it can reveal what the text is mainly about. In this case, after I finished reading the first paragraph, I found that the topic sentence in this text was the last sentence of the first paragraph and it reveals that no one was sure where the missing piece of Washington’s’ tent might be at that time so that I thought the text was mainly about the missing piece and its discovery. Also, I found that it was quite different from what I had learnt because, normally, the topic sentence is given in the first few sentences of the first paragraph.

### 5.3.2.6 Skimming for main ideas

When they reported their use of this strategy, these HPRs and LPRs were aware of the situations in which it should be used. For example, a typical HPR, Li, expressed the idea of reading comprehension questions to get the content-specific information because they usually included questions specifically related to the main ideas of the text. The following excerpts of her verbal reports showed application of this strategy.

**Li, a HPR, TA:** I decided to read the comprehension questions first. These include the best title for the article, what the writer reveals about Washington’s tent, what she was asked to do about the tent, and the time when Washington’s tent was used.

**Li, a HPR, IRI:** To read the comprehension questions that follow the reading passages enables me to get what the text is mainly about first because the questions usually reveal the most important part of the reading and I can try to focus on those portions of the text to get the gist of it. The aim is to skim for the main ideas of the text I am to read. I think it is helpful because I could focus on the information specially related to Washington’s tent and its discovery.

In contrast, these LPRs tended to acknowledge a lack of lexical resources. Joanna’s report was typical of those LPRs. This led to her failure to get the main ideas
of the text even though she realized that, by doing so, she could follow the main idea of the article. This evidenced in her TA and IRI below.

**Joanna, a LPR, TA:** I haven’t got what the text is mainly about. In this case, I am going to read the reading comprehension questions given to help me with this.

**Joanna, a LPR, IRI:** I tried to read the reading comprehension questions given after the reading passages to get the main ideas of the text. However, I still could not get what the text content is mainly about. It was because of my lack of lexical resources related to the reading text even though I know that the reading questions given usually include the specific information related to the main ideas of the text.

**5.3.2.7 Picking out key words**

When these HPRs and LPRs were reading, they picked out some content-specific words that are important for understanding. Take a HPR, Li, for instance; in her TA, she was thinking of the words used repeatedly in the text because sometimes she thought these words were thought to be important for understanding the key ideas of the text content. Moreover, in her IRI data, she claimed that the reason why she picked out these key words (e.g. *parade*, *participant*, and *attend*) was that she could reflect on the words and try to connect them together into the chunk of the information, as they provided the skeleton for understanding the key parts of the text. The following excerpts showed how these HPRs used this strategy.

**Li, a HPR, TA:** I am thinking about the words used repeatedly in the text because sometimes they reveal the key information related to the text content.

**Li, a HPR, IRI:** Mm…I…I usually focus on the important information in the text and based on my experience, the words used repeatedly in the text every other sentence are always the key words. In this case, I can synthesize the important information between the sentences with the key words in the process of reading to get the key ideas of the text. I think the key words include *parade*, *participant*, *attend*, *compete*, *take part*, *competition* and *competitive*. That is because this text is about how the parade is organized and the difference between competitive parades and non-competitive parades.

In contrast, these LPRs seemed not to benefit from using this strategy. Take a LPR,
Joanna, for instance; her use of this strategy did not better her reading comprehension. Her failure in comprehension resulted from her lack of lexical resource and this was a hindrance for her to do the basic meaning construction from the text read even though she was also attentive to the key word, *tent*, as this can reveal key information. The following excerpts from her verbal reports further illuminated how this strategy was used by the LPRs.

*Joanna, a LPR, TA:* I do not quite understand the text content but I know it is roughly about Washington’s tent because this word *tent* is repeatedly used throughout the text, it is the key word.

*Joanna, a LPR, IRI:* I think the word tent is a key word because this word is used repeatedly in the text and I roughly know that it is about Washington’s tent and its discovery. However, there are too many unknown words in the text so I do not know how exactly it was found.

### 5.3.3 CRSs in learning to read and L2 proficiency

Although it is impossible to draw a strong link in relation to strategy use along EFL proficiency levels among these learners when it comes to frequency results, as shown in Table 5.6 below, some observations were made about the similarities and differences in strategy use between these learners with different L2 proficiency.

<table>
<thead>
<tr>
<th>Types of the CRSs in learning to read used by the LPRs and LPRs</th>
<th>Frequency/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HPRs</td>
</tr>
<tr>
<td></td>
<td>Raw</td>
</tr>
<tr>
<td>1. Translating L2 into L1</td>
<td>79</td>
</tr>
<tr>
<td>2. Re-reading</td>
<td>56</td>
</tr>
<tr>
<td>3. Guessing meaning from context through inferences</td>
<td>48</td>
</tr>
<tr>
<td>4. Suspending a reading problem</td>
<td>32</td>
</tr>
<tr>
<td>5. Using cohesive ties</td>
<td>29</td>
</tr>
<tr>
<td>6. Contextualization</td>
<td>20</td>
</tr>
<tr>
<td>7. Using background knowledge</td>
<td>11</td>
</tr>
<tr>
<td>8. Summarizing parts of text</td>
<td>5</td>
</tr>
<tr>
<td>9. Activating prior knowledge</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Word-solving behaviour</td>
</tr>
<tr>
<td>---</td>
<td>------------------------</td>
</tr>
<tr>
<td>10.</td>
<td>14</td>
</tr>
<tr>
<td>11.</td>
<td></td>
</tr>
<tr>
<td>12.</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>308</td>
</tr>
</tbody>
</table>

Raw refers to the absolute frequency of students’ mention of a strategy.
Note: Some percentages total to slightly more or less than 100 due to rounding.
Key: HPRs = High proficient readers, LPRs = Low proficient readers.
Key: CRSs = Cognitive reading strategies

For these HPRs, the frequency of each specific strategy types ranged from 2 to 97 with the total of 308 times. In contrast, for these LPRs, the frequency of each specific strategy types ranged from 0 to 112 with the total of 315 times. Although particular strategies are approached and used by these HPRs and LPRs, the most frequently used strategies are the same. ‘Translation L2 into L1’ seems to be an important strategy that these HPRs and LPRs use even though there is slightly difference between them (26% versus 35%). ‘Re-reading’ is also an important strategy and there seems to be no difference between them (18% versus 18%). ‘Guessing meaning from context through inferences’ is a frequently used strategy for them, although there is a slight difference (16% versus 10%). This is the case when it comes to ‘suspending a reading problem’ (10% versus 16%). The only difference between the uses of these two strategies is that the HPRs seemed to use more ‘guessing’ whereas ‘suspending a reading problem’ is comparatively more frequently mentioned by the LPRs. Meanwhile, ‘anticipating text content’ and ‘visualizing text information’ are mentioned by the HPRs but not mentioned by the LPRs, even though they were used infrequently by the former, so these two strategy types deserve attention. Finally, the strategy types of ‘using cohesive ties’ and ‘using word-solving behaviour’ were also remained here as findings due to their importance in relation to L2 reading comprehension documented in the literature (see Section 5.1 above).

All of the strategy types mentioned above are presented and illuminated with participants’ verbal reports in the TA and the IRI sessions and the original text content.
is also provided. This is to show how similarly or differently they were used by these learners of different L2 proficiency.

5.3.3.1 Translating L2 into L1

Although the meta-strategic use of translating L2 (English) into L1 (Chinese) was obvious among these HPRs and LPRs, the HPRs seemed to have a clear understanding while reporting their use of this strategy. For example, Tina, a HPR, realized that it was sometimes difficult to find a Chinese word with a meaning equivalent to that of the English word and so she revised the way she read and tried not to understand the exact meaning of the word, as. Instead, she tried to understand the sentence from the context in which it was written rather than focusing on the exact meaning of the English word only. The following extracts from her verbal reports further illuminate her deployment of this strategy.

**The expository text:** The competition is very tough as the weakest school will not be able to compete in the following year.//

_Tina, a HPR, TA:_ I am thinking about the best meaning of the word _as_ in Chinese in this sentence because this word _as_ has different meanings when used in different contexts. However, it seems to me that it is difficult to find the Chinese meaning equivalent to that of the English word _as_. In this case, I will not try to get the exact meaning of the word. Instead, I will try to understand what the sentence means as a whole. I think it means the competition is tough and the weakest school will not be able to compete in the following year.

In contrast, those typical LPRs such as Chuang, and Joanna, frequently paused and attempted to translate L2 reading passages into the L1 to aid meaning construction, but more often they translated segments, individual words or phrases, possibly because they frequently encountered difficult words or phrases and so their use of translation to grasp meaning was hindered. In this case, their use of this strategy was inflexible. They could only understand portions of the text in a decontextualized way and sometimes their interpretation of it was inaccurate due to their low proficiency in the target
language such as lexical resources and grammatical knowledge. This is especially true in the following verbal reports.

The expository text: The whole parade lasts or around 80 minutes and is held in a specially-built area with seats for 88500 people. The competition is very tough as the weakest school will not be able to compete in the following year.

Chuang, a LPR, TA: The whole… [p-a-r-a-d-e] I do not know its meaning…80 minutes….so many people…[c-o-m-p-e-t-i-t-o-n]…[w-e-a-k-e-s-t] I do not know what these sentences mean…the…difficult…ah….I think it means that the school will not hold the activity this year.

Chuang, a LPR, IRI: Mm…I had tried to understand them by translating but there were too many unknown words like [p-a-r-a-d-e] [c-o-m-p-e-t-i-t-o-n] and [w-e-a-k-e-s-t]. In this case, I did not know what they are mainly about. I think the word weakest is used to refer to someone unwell, based on my understanding. However, in this context, I do not think that it means to be this. That is because, if this word is ended with ‘est’, in terms of the superlative degree, it should come with the most used as the modifier. In this case, I do not think it is used to refer to someone unwell. Instead, I think the weakest might be the reason why the school will not be able to hold this activity because I think something happened so that the school not be able hold this activity; however, I still do not know its exact meaning.

The expository text: Every year in February, around forty days before Easter, parades are held all over Brazil. In some of them, participants compete for prizes. Rio de Janiero, the best-known city in Brazil, holds several competitive parades. In one, dance groups from the top twelve samba schools are in competition with each other. Each of the schools designs for a performance using several hundred dancers.

Joanna, a LPR, TA: …I am translating …every year in February, around forty days before Easter…eh….I do not know what the meaning of the word [p-a-r-a-d-e-s] is. I do not know what this word, [B-r-a-z-i-l], means. R-i-o d-e J-a-n-i-e-ro …I think it might be a person’s name… the best-known city….eh…… the best-known city someone who knows the city the best…eh holds several….I do not know what this word [c-o-m-p-e-t-i-t-i-v-e] means…I think there is a dance group but I do not know what the word samba means. I do not know what in competition with means but I think it might be similar with the word [c-o-m-p-e-t-i-t-i-v-e] I have come across…with each other… designs…I think… designs a dance performance and uses so many dancers.
Joanna, a LPR, IRI: I think the word [p-a-r-a-d-e-s] refers to the dance partner. Maybe it doesn’t. Maybe it’s a kind of activity because this portion of the text is mainly about dance groups but I am not sure. I do not know what the word *samba* means, but I do not think it refers to a kind of dancing in this context because it is not written with the first letter capitalized.

### 5.3.3.2 Re-reading

Re-reading was used frequently among these HPRs and LPRs. However, these HPRs reported having clear awareness of using such a strategy flexibly. For example, a typical HPR, Tina, indicated that re-reading allowed her a chance to reflect on the difficult portions of the text. And her re-reading difficult portions of text was to clarify what she was reading and she clarified it from the larger discourse position rather than merely understanding every detail of the text. Interestingly, though, she did so only when it was necessary to, so as to avoid wasting time. Her excerpts below further illuminate the utilization of the strategy by these HPRs.

**The expository text:** The number of people was larger than the area could accommodate.//Therefore, the parade committee decided that for the future parades they would not announce the starting time.//They expected this would reduce the number of people in the parade to ten or fifteen thousand.//

**Tina, a HPR, TA:** Mm…accommodate….I do not know what this word means. I am going to re-read the sentences.

**Tina, a HPR, IRI:** I re-read it to clarify whether my understanding of the word *accommodate* is correct or not because I think I could understand what this sentence basically means. After re-reading it, I think the focus is on the larger number of people. Also, the passage that comes next says to reduce the number of people in the parade so I think it means to take people in from the context. So, the purpose of my re-reading is to clarify whether my understanding of what I am reading is correct or not. However, I do re-reading only when I think I can understand the basic meaning of what I am reading because if you always re-read the sentence, it might take you a lot of time to read. So, my re-reading the difficult portions of the texts is to clarify what they basically mean since that I know I am able to.

In contrast, these LPRs’ application of it was not very flexible, as they seemed perplexed at constantly encountering unfamiliar words or phrases and difficult
sentences. For example, a typical LPR, Bia, each time she met a new word, she would pause, and then re-read it, but she merely used this strategy to decode details of portions of a text or discrete portions of it, and never went beyond the text itself. On many occasions, she did not know the meaning of the repeated part and she just let it pass, even though she sometimes questioned its meaning. Moreover, she seemed to know the meaning of the repeated part but the understanding of it was vague to some extent. Bia’s report was typical of those LPRs. Her verbal reports below how this strategy was used by these LPRs.

**The narrative text:** One day when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent. This led to an invitation for Loreen to inspect some sections of cloth in that museum’s collection. Among them was a piece that looked promising.

**Bia, a LPR, TA:** one day one day when she was visiting the head of another museum...another museum she mentioned the piece that was missing from Washington’s tent she mentioned the piece that was missing piece from Washington’s tent...I am trying to understand what the word cloth means. This led to an invitation for Loreen to inspect... for Loreen to inspect some sections of cloth in that museum’s collection inspect some sections of cloth...eh...I do not quite understand this whole sentence because of these unknown words—invitation, inspect, and cloth...to inspect some sections of cloth in that museum’s collection...among them was a piece that looked promising...eh...among them was a piece that looked promising...eh... (Bia, a LPR, TA)

**Bia, a LPR, IRI:** I think the word cloth refers to the missing piece even though I still do not know its exact meaning because there’s a hole in the tent. For Loreen to inspect some sections of the cloth...inspect...maybe it means to inspire. I do not know...invitation...This led to an invitation...I do not know.I think the word promising refers to a promise.

**5.3.3.3 Guessing meaning from context through inferences**

Guessing seemed to be an important strategy for these HPRs and LPRs; yet, my analysis of their verbal reports showed a difference between them in their use of this strategy. Take, a typical HPR, Li, for instance; her comprehension processes revealed
that she understood the literal meaning of a text and was able to synthesize the semantic relations (context) surrounding this unknown linguistic item (reduce) while inferring its meaning. Her verbal reports were typical of those HPRs. The deployment of this strategy by the HPRs is as evidenced in her report below.

**The expository text:** Around 50000 people attended the parade in one area last year.// The number of people was larger than the area could accommodate.// Therefore, the parade committee decided that for the future parades they would not announce the starting time.// They expected this would reduce the number of people in the parade to ten or fifteen thousand.//

**Li, a HPR, TA:** …would reduce…reduce… I do not know what it means… keep reading to see…

**Li, a HPR, IRI:** I think they expected to control the number of people in the parade to 10000-15000 because the number of people was larger than the area could accommodate. In this case, the word reduce has a meaning equivalent to that of the word decrease…I mean the number of people in the parade.

In contrast, when I carefully examined LPRs’ verbal reports, I found that their understanding of unknown words or phrases was not supported by the contextual evidence. Take the typical LPRs, such as Chuang, Joanna, Dia, and Dolly as examples; their use of guessing did not help them to maintain their text comprehension because they were just wild guesses, speculation, or the recall of the meanings of words and phrases. This resulted from the fact that they decoded the passages and regarded them as isolated units, and, even if they did not, their understanding of the unknown words or phrases was vague. The possible reason for this was that they acknowledged the lack of grammatical knowledge and lexical resources which they could use as contextual clues. This led to a failure to understand the passages, which in turn further resulted in failure to use contextual clues as a way to establish the meaning of the unknown words or phrases. The reasons for this included: words that they do not know, words that they
think they know and words that they cannot guess. Their verbal reports were typical of those LPRs, which best exemplify how they used this strategy.

**The expository text:** Around 50000 attend the parade in one area last year. The number of people was larger than the area could accommodate. Therefore, the parade committee decided that for the future parade they would not announce the starting time. They expected this would reduce the number of people in the parade to ten or fifteen thousand.

*Chuang, a LPR, TA:* I forgot what the word *attended* means even though I learnt about it before. I do not know what the word *accommodate* means and I do not know what the word *committee* means, either. I do not know what the meaning of the word *announce* is… but it seems to me that a decision is made for the future… I don’t know the meaning of the word *parade*… mm… er… I tried to understand these words from the context but I find these sentences are incomprehensible to me. I think the reason why this happened is that there are too many unknown words for me and that I do not quite understand the sentence structure.

**The expository text:** In some of them, participants compete for prizes. Rio de Janiero, the best known city in Brazil, holds several competitive parades. In one, dance group from the top twelve samba school are in competition with each other.

*Dia, a LPR, TA:* I do not know the meaning of the words *[p-a-r-a-d-e], [c-o-m-p-e-t-e]* and *[p-a-r-t-i-c-i-p-a-t-s]*… holds… *[c-o-m-p-e-t-i-t-i-v-e]* I do not know its meaning… samba school… *[c-o-m-p-e-t-i-t-i-o-n] I do not know its meaning… I chose to see whether I can get its meaning from the passages that follow.

*Dia, a LPR, IRI:* … I only got the meaning of the word *participants*. I did not use the contextual clues to get it meaning. I just recalled it.

**The expository text:** Around 50000 attend the parade in one area last year. The number of people was larger than the area could accommodate. Therefore, the parade committee decided that for the future parade they would not announce the starting time. They expected this would reduce the number of people in the parade to ten or fifteen thousand.

*Joanna, a LPR, TA:* I do not know the meaning of the word *attended*, … one area last year… the number of people was larger… in one area last year… I do not know what this word *[a-c-c-o-m-m-o-d-a-t-e]* means… decided for the future… the starting time and they expected this would…….. the number of people to 10000 or 15000… I do not know why suddenly the number of people is mentioned here. I think I have learnt about the word *expected* and the word
reduce but I don’t know what they mean in this context because there are too many unknown words like committee, parade, committee, and attended.

Joanna, a LPR, IRI: I just suddenly recalled the meaning of the word attended and I did not use the contextual clue to help you with its recall. I think the word [a-c-c-o-m-m-o-d-a-t-e] has a meaning equivalent to that of providing people place to live…ha…I guessed…because the number of people was larger than the area so I think people need places to live.

The narrative text: At night, he slept in his personal tent.//For almost a hundred years, that historical tent has been on display in a national park.//Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof.//

Dolly, a LPR, TA: He slept in his personal tent…for almost a hundred years…around a hundred year that historical tent has been on display in a national park. I think it means the tent has been on display in a national park. I do not know this word—[u-n-f-o-r-t-u-n-a-t-e-l-y]—try to read the sentences that follow to see whether I can get its meaning or not…for most the time for most of that time it ruined ruined…I do not know its meaning…by a large hole in its roof…roof… I do not know the meaning of the word roof…[h-o-l-e] maybe it is a ‘horn’ but I am not sure… no one was sure how the h-o-l-e….I came across this word in the previous sentence… (a large)… [h-o-l-e] But I still can not get its meaning.

Dolly, a LPR, IRI: I do not know the meaning of the word [u-n-f-o-r-t-u-n-a-t-e-l-y]. I still cannot get the meaning of the word ruined. I think the word roof has the meaning equivalent to that of the word horn because I recalled its meaning and I think it has that meaning. I still do not know the meaning of the word hole. I tried to get their meanings between passages but there are too many unknown words so that I cannot connect the ideas between the passages even though I tried.

5.3.3.4 Suspending a reading problem

These HPRs were capable of solving the problem suspended. Take two typical HPRs, Kay and Yang, for instance, when faced with unknown parts of the text such a word, phrase or sentence; they decided to suspend the reading problem rather than to focus on it. Instead, they actively participated and decided to read other parts of the text (Kay) or activate their background knowledge (Yang) to solve difficulties faced.
The following extracts show its application when the text comprehension was hindered by unknown words, phrases, and sentences.

**The narrative text:** Among them was a piece looked promising.//To confirm her suspicion, she traced its outline and later compared it with the hole in the tent.//They matched perfectly.

**Kay, a HPR, TA:** I do not know what this sentence means because of the unknown word *promising*. Keep reading and go back to find it out later. (Kay, a HPR, TA)

**Kay, a HPR, IRI:** I found the meaning of the word *promising* after finishing reading the subsequent passages because I read the information about how perfectly they matched so that I thought the meaning of the word promising is equivalent to that of the word similar.

**The expository text:** Every year in February, around forty days before Easter, parades are held all over Brazil.

**Yang, a HPR, TA:** I do not quite understand this word *Easter*...keep reading to see.

**Yang, a HPR, IRI:** I think it refers to Easter holiday because I obtained the information in the text like music and dance. Also, I have heard of parades held in Brazil around forty days before a holiday and I know that Easter is around late March, based on my knowledge.

In contrast, the LPRs, such as Yu-Rong, Bia, Chuang, and Dolly, simply skipped, ignored, or simply let them pass and, even if they did not, their understanding of the unknown portions of the text was vague. The main reason for this was that they were not actively participating in their reading, were unable to manipulate the contextual clues in a flexible way, and lacked lexical resources and a good command of English, even though Chuang did have the relevant background knowledge related to the text content. The following report was typical of those LPRs, which best illuminates their utilization of this strategy.

**The narrative text:** At night, he slept in his personal tent.//For almost a hundred years, that historical tent has been on display in a national park.
Yu-Rong, a LPR, TA: I think it means at night he slept in his personal. I do not know what the word *tent* means. I think I will try to understand what the sentence is about and skip it first. I think it means for almost 100 years that ...ugh...this word *tent* appears again...I think that *historical tent* refers to a kind of object and it has been on display in a national park...eh...It seems to me that the text is getting difficult...vocabulary and sentence structure so that I can’t understand it...skip it.

Yu-Rong, a LPR, IRI: I only know that he slept in his *tent* at night and the *tent* is a historical object so that I think the *tent* is a about a thing a place based on the context but I still cannot get its exact meaning. I will try it again to get its meaning. He slept in his personal room, space, or pillow... I do not know...ignore it.

**The narrative text:** For almost a hundred years, that historical tent has been on display in a national park. // Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof. // No one was sure how the hole had been made and where the missing piece of cloth might be at that time. //

Bia, a LPR, TA: ....historical tent....I do not know what it means. I'll skip it first and come back to it later. ...missing ....I do not know the meaning of the word *cloth*. I’ve decided to come back to it later.

Bia, a LPR, IRI: I know historical tent refers to the tent but I do not know what the word *historical* means....So...I skipped it. I only know *cloth* refers to the missing piece because there was a hole in the tent. I do not know what it actually means.

**The expository text:** Every year in February, around forty days before Easter, parades are held all over Brazil. //

Chuang, a LPR, TA: I do not know the meaning of the word [p-a-r-a-d-e-s]. I chose to skip it first and come back to it later. But I think it refers to an activity because it is held in the place called Brazil.

Chuang, a LPR, IRI: It seems to me that it is a carnival because I have heard of it being held in Brazil. However, in this text, I still do not know what activity it is exactly because I have never learnt this word and I do not know what this word means exactly.

**The expository text:** Around 50000 people attended the parade in one area last year.//The number of people was larger than the area accommodate.//
Dolly, a LPR, TA: It means that around 50000 people attended the parade in one area last year…the number of people was larger than the area could accommodate for people to live…so strange…therefore….It seems to me that the text content is beyond my comprehension so that I think the text content is difficult to comprehend.

Dolly, a LPR, IRI: I learnt about this word. In this case, I think it has this kind of meaning in the text. In other words, so many people come to join in the parade so that they need a place or room to stay in.

5.3.3.5 Visualizing text information

These HPRs linked text information with mental images in order to comprehend. For instance, in the IRI of a typical HPR, Li, she stated that a story comprised of a series of related events enabled her to visualize the setting and plot related to the text in mind so as to clarify the information and to increase her understanding for meaning construction, i.e. a story about the historical tent used by George Washington and the missing piece from it. The following extracts of her verbal reports further illuminate application of this strategy.

The narrative text: In 1778, George Washington was commanding troops during America’s Revolutionary War. //At night, he slept in his personal tent. // For almost a hundred year, that historical tent has been on display in a national park. // Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof. // No one was sure how the hole had been made and where the missing piece of cloth might be at that time. //

Li, a HPR, TA: I am imagining the plot and setting in my mind.

Li, a HPR, IRI: Because a story has a setting and a plot, I was visualizing the information to think how the setting and plot were related to each other and I think it is a story about the historical tent used by George Washington and the missing piece from it, based on the related events mentioned in the passages that follow. It is full of descriptions, I guess.

5.3.3.6 Anticipating text contents

It was evident that these HPRs approached a text ‘from outside’. For example, in the IRI of a typical HPR, Yeh, he predicted that Loreen was about to find the missing
piece from Washington’s tent based on the information obtained from the previous passages. For him, making predictions paved the way for thinking about what the text might be about before going into detail because this facilitated an understanding of the succeeding parts of reading material to follow. The following excerpts of his verbal reports further illuminate application of this strategy.

**The narrative text:** One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent. //This led to an invitation for Loreen to inspect some sections of cloth in that museum's collection.//Among them was a piece that looked promising.//

**Yeh, a HPR, IRI:** Mm…I always have the meaning of the text content in mind while reading…mm… I mean, while I was reading the text, I noticed that she mentioned the piece that was missing from Washington's tent so I was thinking that she (Loreen) was about to find it. Also, the succeeding passages revealed the information of its discovery so that I think my prediction is correct.

### 5.3.3.7 Using cohesive ties

When these participants reported their use of this strategy, they formed logical relations between propositions in the text content in order for them to guess meaning from context through inferences. However, a close inspection of their verbal reports indicated that LPRs differed from HPRs in their use of this strategy type, even though the HPRs (9%) tended to use this strategy more frequently than the LPRs (6%). The use of cohesive ties by these HPRs and LPRs is more clarified below.

**Lexical cohesion**

This strategy includes syntax and semantics because it refers to a network of a unit of semantic word relations between a number of words or phrases within the sentences (syntax) in the text; namely, the sentential level is grammatical features of syntax at surface level representing semantics at deep structure such as the *passive structure* within sentences between words—from word meanings to sentential meanings (Halliday & Hasan, 1976). The two groups used lexical cohesion to form the
semantic relations in the text. However, as seen from the extracts below, Chuang, a typical LPR, tended to complain about the words that were beyond his level and ignored them, which in turn led to failure to use lexical cohesion to form the semantic relations, even though he considered a number of words leading semantic relations and this was accompanied by his attention shifting to the passive structure. This suggests that these LPRs pay more attention to the surface level when they have difficulty in comprehending deep-level semantic relations.

**The expository text:** Therefore, the parade committee decided that for the future parade they would not announce the starting time. //

**Chuang, a LPR, TA:** I do not know the meanings of these three words: ‘announce’ ‘committee’ and ‘parade’. It seems to me that a decision was made for the future…Too many unknown words…

**Chuang, a LPR, IRI:** I know a decision was made by people. That is because people decide (verb) something (noun) and there must be a decision made by them (passive structure). But I still do not know what the word committee means because of too many unknown words or my poor English.

In contrast, these HPRs seldom felt challenged by their proficiency level. Take Tian’s report for instance; she was aware of the passive structure within sentence between words (from word meanings to sentential meanings) by examining the other parts of the text related to it effectively. Her report below was typical of those HPRs and best illuminates the application of lexical cohesion by these HPRs.

**The expository text:** Therefore, the parade committee decided that for the future parade they would not announce the starting time. //

**Tina, a HPR, TA:** er… the parade committee…people who organize the parade? I am not sure.

**Tina, a HPR, IRI:** I think it refers to people who organize the parade because only can a decision be made by people. In this case, the decision made was not to announce the starting time. Also, I think parade committee refers to people who organize the parade because the
verb is decided and there must be a decision made by people. That’s why I think the decision was made not to announce the starting time by people who organize the parade.

Reference cohesion

When these HPRs and LPRs were reading, they mentioned the use of reference items to form semantic relations in the text. However, Ru-Rong’s report was typical of those LPRs. In her example, she tended to pay attention to the surface level and referred to the reference item, *them*, as discrete portions rather than from the context and complained about her lack of vocabulary when she encountered difficulty in understating the deeper level semantic relations, even though she had an awareness of reference cohesion. This led to a failure to connect semantic relations in the text to understand the unknown part of the text. The following extracts illustrate the use of this strategy.

**The expository text:** Every year in February, around forty days before Easter, parades are held all over Brazil.// In some of them, participants compete for prizes.//

**Yu-Rong, a LPR, TA:** Every year in February around forty days before Easter…. I am thinking of what the word *them* refers to. I know the word *them* is used to refer to the noun mentioned previously.

**Ru-Rong, a LPR, IRI:** I still do not know what it refers to even though I know the reference ‘them’ is used to refer to the previously mentioned noun because I do not even know the meanings of these words—compete, parades, participants, and prizes.

In contrast, these HPRs tended not to regard the reference items as discrete portions of the text. In the words of Yang, a typical HPR: “I think *them* refers to *parades* because participants compete for prizes in some of the *parades*”. Clearly, she used the larger discourse as a stepping stone to connect what she was reading at the moment with what she had read previously in order to obtain the meaning of the reference item, *them*, through inference. This is evidenced in both her TA and IRI below.
The expository text: Every year in February, around forty days before Easter, parades are held all over Brazil. In some of them, participants compete for prizes.

Yang, a HPR, TA: … in some of them, participants … er… I am thinking what them refers to here… the participants or the parades…

Yang, a HPR, IRI: Mm… I think, form the rest of the passages, them refers to the parades because participants compete for prizes in some of the parades.

Conjunctions

When these HPRs and LPRs were reading, they mentioned conjunction items to form a coherent unit in the text for understanding. However, some observations were made about the use of this strategy between them. As seen from the example, Li was typical of those HPRs because she tended not to regard the conjunction item, because, as discreet portions of the text because she used them as resources and linked them to the larger discourse to obtain the meaning of unknown phrase through inferences. The following excerpts from their verbal reports are used to show how this strategy was used.

The expository text: However, these parades often come to a halt and also take hours to finish because so many people want to take part.

Li, a HPR, TA: … come to a halt… come to a halt… come to a halt… I do not know what this phrase means… keep reading.

Li, a HPR, IRI: I am still uncertain of its meaning but I think it must have a meaning parallel to ‘delay’ because there is a conjunction ‘because’ used to show the reason why these parades also take hours to finish.

In contrast, the LPRs were somewhat different. As seen from the example, Chuang tended to refer to the conjunction item, however, in a decontextualized way rather than the context, due to insufficient vocabulary knowledge. This suggests that HPRs paid more attention to the surface level while encountering difficulty in
comprehending deep-level semantic relations. Chuang’s report below was typical of those LPRs and best illuminates the use of this strategy.

**The expository text:** Other groups join in later as the parade moves along. However, these parades often come to a halt and also take hours to finish because so many people want to take part.

**Chuang, a LPR, TA:** Other groups join in immediately after the parade moves along….however, these parades often come to a halt……I do not know the meaning of come to a halt….

**Chuang, a LPR, IRI:** I do not know its meaning but I know the word however is used to connect two opposite ideas. Other groups join in immediately after the parade moves along. However, these parades come to a halt and also take hours to finish because so many people want to take part……come to a halt…Does it mean to make people crazy? I do not know its meaning even though I know the word is used to connect two opposite ideas because I do not know the meanings of parade and take part.

### 5.3.3.8 Word-solving behaviour

These HPRs and LPRs reported having an awareness of using synonyms, word collocation, orthography and morphology mainly to get the meanings of unknown words and phrases for better comprehension of the text. A close inspection of their verbal reports indicated that the LPRs differed from the HPRs in their use of this strategy type, even though the former (7%) tended to use this strategy more frequently than the latter (5%). The application of this strategy by readers of different proficiency levels will be clarified below.

**Using synonyms**

These HPRs and LPRs readers had an awareness of this knowledge while reading in order to enhance their understanding of the text. They also believed that reading in the L2 would be very difficult if they did not have sufficient lexical knowledge or resources because vocabulary seemed to be the basic material for meaning construction. However, as seen from the example, a typical LPR, Chuang, his reading comprehension was not enhanced, due to deficiency in grammatical structure and
lexical resources, even though he also realized that the meaning of the word, *tough*, is equivalent to that of the word, *difficult*.

<table>
<thead>
<tr>
<th>The expository text: The competition is very tough as the weakest school will not be able to compete in the following year.</th>
</tr>
</thead>
</table>

Chuang, a LPR, IRI: I learnt about this word [*t-o-u-g-h*] and I think it has a meaning equivalent to that of the word *difficult*...er...I am trying to understand what this sentence basically means.

Chuang, a LPR, IRI: I can’t understand what this sentence basically means. There are too many unknown words like *competition*, *weakest* and *compete* even though I know the word [*t-o-u-g-h*] has a meaning equivalent to that of the word *difficult*. I learnt about this word *as* and I know it has several meanings when used in different contexts but I do not know what it means in this context. My knowledge about the sentence structure and grammar is not good enough.

In contrast, when compared to the LPRs, the HPRs were somewhat different. As seen from the example below, Grace mentioned the meaning of the word *reduce* equivalent to that of the word *decrease* because she thought that sufficient reading vocabulary was necessary for basic meaning construction. That was why she did not feel much challenged while processing the text for comprehension. The excerpts below further exemplify how this strategy was used by the HPRs.

<table>
<thead>
<tr>
<th>The expository text: They expected this would reduce the number of people in the parade to ten or fifteen thousand.</th>
</tr>
</thead>
</table>

Grace, a HPR, TA: …they excepted to *reduce*…*decrease*…the number of people in the parade to ten or fifteen thousand.

Grace, a HPR, IRI: I know the meaning of the word ‘reduce’ is equivalent to that of the word ‘decrease’ and I think this knowledge enables me to have a better understanding of L2 reading...I mean vocabulary words are the basic component of an understanding of the meaning so that to have a large vocab is necessary.

**Using word collocation**

It seemed that these HPRs reported having clear awareness of using such a strategy as word collocation because this strategy type was never used by the LPRs. In
the words of Tina, a HPR: “I mean some English words have to co-occur and they are the fixed combinations and have their own meaning”. For example, she had a clear awareness of lexical collocation (come to a halt) (see Section 5.2.3.5 for definitions) and thought that this knowledge she learnt was helpful for enhancing reading comprehension. Her verbal reports below further illuminated how this strategy was used.

**The expository text:** However, these parades often come to a halt and also takes hours to finish because so many want to take part.//

**Tina, a HPR, TA:** …eh……these parades…. I am thinking what the meaning of come to a halt is… I think it is a phrase instead of the isolated words…mm…and it means a sudden stop.

**Tina, a HPR, IRI:** I learnt about this phrase and this sequence of words mean a sudden stop. I remember my English teacher told us that there were some English words that are fixed and combined. I mean they have to co-occur and they are the fixed combinations and have their own meaning. This knowledge is important in L2 reading because it is helpful for me to aid my L2 reading comprehension in terms of lexical resources and the combination of English words is habitual and arbitrary.

**Using orthography**

It appeared evident that these HPRs and LPRs were aware of a discernible difference in spelling such as capitalization. However, this knowledge seemed unhelpful to these LPRs. Take, for instance, Joanna, a typical LPR; her effective deployment of this strategy was short-circuited because she did not have sufficient lexical knowledge to help her to establish meanings of the unknown words such as Brazil and Rio de Janiero, even though she mentioned that Brazil was a country name and Rio de Janiero was a person’s name. This is evidenced in her TA below.

**The expository text:** Rio de Janiero, the best known city in Brazil, holds several competitive parades.//
Joanna, a LPR, TA: This word, [B-r-a-z-i-l], seems to be different compared with the other words in the sentence because it is written with the first letter capitalized. However, I do not know what it means…another word written with the first letter capitalized…[R-i-o d-e J-a-n-i-e-r-o]…In this case, [R-i-o d-e J-a-n-i-e-r-o] might be a person name and [B-r-a-z-i-l] is a country name.

Conversely, as seen from the example below, when compared to the LPRs, Yeh was typical of those HPRs, due to his relatively better lexical and grammatical knowledge, was able to us this knowledge as strategy (orthography) effective and appropriately so as further to establish the meaning of the unknown word, *Easter*, by considering other parts of the text related to it.

**The expository text:** Every year in February, around forty days before Easter, parades are held all over Brazil. //

Yeh, a HPR, TA: Every year in February…around forty days before…Easter…mm…I am thinking about what the word ‘Easter’ means. It does not mean the direction opposite from the west because its first letter is capitalized. In this case, it must refer to a particular day because it says around forty days before it…with the first letter of it capitalized…I recall its meaning…Easter holiday…

**Using morphology**

Although these HPRs and LPRs reported their use of this strategy, as illustrated by the experts below, a typical HPR, Tina, tended to have a clearer view and good knowledge about using morphology because she realized that this knowledge was not applicable to all words. In other words, for her, it is necessary to have sufficient lexical resources.

**The narrative text:** This led to an invitation for Loreen to inspect some sections of cloth in that museum’s collection. //

Tina, a HPR, TA: This led to an invitation for Loreen to… this led to this person I mean the expert in historical object to… inspect…eh… I don’t quite remember the meaning of the word inspect. (Tina, a HPR, TA)
**Tina, a HPR, IRI:** I used my vocabulary knowledge to tackle this vocabulary problem because I know this word can be separated into two parts. In other words, *in* has the meaning of ‘towards the inside’ and *spect* has the meaning of ‘looking or seeing’. In this case, I think it means to look at something carefully in order to check it. I think it is helpful with this word… but not every word can be separated in this way so I think a large vocabulary is still needed.

In comparison with these HPRs, as illustrated in the excerpts below, these LPRs, such as, Dia and Chuang, seemed to be unsuccessful readers because their lack of reading vocabulary resulted in their partial understanding of the text even though they realized morphological knowledge. Also, as LPRs, Dia and Chuang seemed to have less awareness and knowledge of morphology and they did not realize this knowledge was not applicable to all words, partly because Dia thought that she knew the meaning of the word, *outline*, and partly because Chuang thought that he knew the meaning of the word, *design*.

*The narrative text:* To confirm her suspicion, she traced its outline and later compared it with the hole in the tent./

**Dia, a LPR, TA:** …she… the word *outline* means a line not within…..

**Dia, a LPR, IRI:** Because of the word part, *out*, doesn’t it change the meaning of a word when it is added to a word? In this case, I think it means a line not within.

*The expository text:* Brazil’s other pre-Easter parades are non-competitive ones, held in local neighborhood areas, and anyone can participate./

**Chuang, a LPR, IRI:** …mm…er…I do not know what *pre* means but I think it is used to modify Easter. Also, I do not know what *non* means but I think it is used to qualify competitive.

*The expository text:* Each of the school designs a performance using several hundred dancers.//
**Chuang, a LPR, TA:** I do not know the meaning of the word *design*. I think it is an antonym of the word *sign* because the part *de* refers to giving the word the opposite meaning. In this case, I think it means no sign.

5.4 **Metacognitive awareness and use of reading strategies in learning to read in L2, L2 proficiency and text type**

When these learners’ metacognitive awareness and use of reading strategies in learning to read are checked across L2 proficiency levels and texts of the narrative and expository types, the available findings show that particular strategies grouped into the categories of SRS, CRS, and MRS are approached and used by these HPRs and LPRs while reading both texts; however, the LPRs seemed to be very constrained by their L2 proficiency. This tendency was reflected not only in their understanding of when, where, and how they used these strategies but also in their quality and quantity. Meanwhile, although the available data did not show much difference regarding text types, in some areas there seemed to be some differences. Most of the differences are related to sentence structure level and vocabulary level; few of the differences are related to text types. The reason for this might have been the fact that these two different types of text have different sentence and text structure and types of vocabulary; i.e. the grammar words and vocabulary knowledge seemed to gain more importance in the expository text based on the participants’ comprehension processes. Besides, in parts of the findings, the differences in strategy use associated with text types did not enhance these LPRs’ comprehension in both texts, when compared to these HPRs. This might be due to their relatively lower L2 proficiency, the nature of the task, the small number of the participants or the length of the text. Thus, in what follows, I will present which reading strategy types in learning to read grouped into the three categories these participants used predominately and how they used them in detail through discussion on the data from their TA protocols and IRI sessions with consideration given to the interplay between L2 proficiency and text type. Also, the
total number of response units of the individuals’ strategy types categorised into SRSs, MRSs, and CRSs, as included in their verb reports of TA and IRI, is shown and tabulated respectively in the sections that follow.

5.4.1 The interplay of SRSs in learning to read between text type and L2 proficiency

As shown in Table 5.7 below, the findings revealed that the total supporting reading strategy use by the HPRs (33%) was lower than that by the LPRs (68%) across the ability levels and text types. Although there is not much difference regarding strategy use with different text types, based on the available data, several observations were made regarding the strategy use in relation to text type by students of different proficiency levels.

| Types of the SRSs in learning to read used by the HPR and LPRs across text types | Frequency/Percentage |
| --- | --- | --- | --- |
| | Narrative Text | Expository Text |
| | LPRs | HPRs | LPRs | HPRs |
| Raw | % | Raw | % | Raw | % | Raw | % |
| 1. Paraphrasing | 0 | 0 | 10 | 19 | 0 | 0 | 15 | 28 |
| 2. Going back and forth in the text | 5 | 9 | 2 | 4 | 1 | 2 | 3 | 6 |
| 3. Using filler words | 11 | 21 | 1 | 2 | 3 | 6 | 1 | 2 |
| Subtotal | 16 | 31 | 13 | 25 | 4 | 37 | 19 | 8 |
| Total | 52 | 101% |

Raw refers to the absolutely frequency of the students’ mention of a strategy.
Note: Some percentages total to slightly more or less than 100 due to rounding.
Key: Low Proficient readers (LPRs); High Proficient Readers (HPRs)
Key: SRSs = Supporting reading strategies

These HPRs and LPRs differed regarding the strategy types chosen while processing both texts. ‘Paraphrasing’ was used the most frequently by these HPRs (see the highlighted) for both texts but was never used by these LPRs in either text. This might be due to the small number of the participants, length of the text, or the
nature of the task. Meanwhile, during the protocol of this study, the difference between text types in relation to this above-mentioned strategy was observed. In contrast, these LPRs frequently used ‘using filler words’ (see the highlighted) for both texts even though there was a slight difference in using filler words for these LPRs when reading different types of texts. Difference in use of this strategy related to text type was observed as well. Thus, the strategy types mentioned above are illuminated with excerpts taken from participants’ verbal reports on the think-aloud (TA) sessions and immediately retrospective interview (IRI), along with the original text content provided, to show the in-depth strategy use in relation to the types of the narrative and expository texts by these HPRs and LPRs.

5.4.1.1 Paraphrasing

A close inspection of these HPRs’ verbal reports revealed that their paraphrasing of the expository text was more or less accompanied by the attention paid to lexical items. Take, Grace, a HPR, for instance; she referred to a grammar word, such as the conjunction item, \textit{as}, within the text. In this case, she tended to think a lot about the grammar word and read every sentence carefully in order not to miss or misinterpret the important text information. This enabled her to re-organize sentences and integrate ideas between the text information about what they had read previously with what they were reading while she was trying to re-phrase the uncertain sentence. The following extracts illuminate how this strategy was used with the expository text.

\begin{quote}
\textbf{The expository text}: Other groups join in later as the parade moves along.//
\end{quote}

Grace, a HPR, TA: …there are other groups …eh…other groups join in later as the parade eh…. I am thinking of the meaning of the words \textit{as} and \textit{later} and I think it means other groups take part in the parade immediately after it moves along.

Grace, a HPR, IRI: I paid attention to the words such as \textit{later} and \textit{as} because both words are used to talk about time. The conjunction \textit{as} is used to join two sentences and it has different
meanings when used in different contexts. In this case, I have to analyze the sentence and think of the semantic relations from the context. I think in this context it has a meaning equivalent to that of the word *while* because it is used to join two things happening one after another. Also, the word *later* comes before the word *as*. So, I have to re-connect my understanding of these two sentences because the word *later* means some time after the time mentioned. That’s the reason why I re-phrased and understand these two sentences as other groups take part in the parade immediately after it moves along.

In contrast, take Yeh, a HPR, for instance; he tended to refer to a solution to a problem like a story leading to semantic relations between different portions of the text rather than its literal meaning while using this strategy with the narrative text. This unique feature of narrative text enabled him to integrate the semantic relations between different portions of the narrative and so to understand the unknown text content while doing paraphrasing.

| The narrative text: Since then, the tent and the missing piece have been reunited, and Loreen Finkelstein has been credited with solving an old mystery.// |

**Yeh, a HPR, TA**: I think the tent and the missing piece have been brought together since then and Loreen Finkelstein has been *credited with*….mm…I am thinking how to better understand this sentence….mm….I think she was thought to be the person who solved an old mystery, something like this.

**Yeh, a HPR, IRI**: I used my own interpretation of the context to understand the sentence because I was not sure of the exact meaning of *has been credited with*. I tried to use my own words and understand it from the context. I mean this text is mainly about the missing piece of the tent and how it was found like a resolution to a problem in a story after a series of events happened, so I focused on the problem and solution leading to semantic relations between different portions of the text rather than its literal meaning. So, it should mean that she was thought to be the person who solved an old mystery....

**5.4.1.2 Using filler words**

These LPRs frequently reported using filler words (something) and this might imply lack of vocabulary and grammar knowledge in both texts. However, text type seemed to be linked with their use of this strategy. For example, a LPR, Dolly, tended to resort to the semantic relations between different events related to the text
information leading to coherence through context clues while ‘using something’ with the narrative text, because this enabled her to get the rough idea even though her understanding of the unknown part was still vague due to her lack of vocabulary and grammar knowledge.

_The narrative text:_ To confirm her suspicion, she traced its outline and later compared it with the hole in the tent.// They matched perfectly.// Since then, the tent and missing piece have been reunited.//

Dolly, a LPR, TA: Mm… it means that the tent and something missing from Washington’s tent matched but I still do not know what it is even though I know something is missing from Washington’s tent based on the information from the passages I read previously.

Dolly, a LPR, IRI: Because I know the text is mainly about something missing from Washington’s tent and a person did something to find it and they matched. On the basis of the information from the passages I read previously, I know there must be a connection between different events. I mean the connection of information between portions of text context makes me think so. But I still do not know what it is; the main reason is the fact that my English is not good enough…limited vocabulary and grammar knowledge.

In comparison, as illustrated from excerpts below, regarding the expository text, although they tended to activate their background knowledge while using ‘something’, as illustrated from the excerpts below, to maintain the flow of the reading and coherence of the text, Yu-Rong admitted that her background knowledge related to the text was still insufficient.

_The expository text:_ Every year in February, around forty days before Easter, parades are held all over Brazil.//

Yu-Rong, a LPR, TA: [p-a-r-a-d-e]…I do not know its exact meaning….mm…I think it might refer to something people do to celebrate.

Ru-Rong, a LPR, IRI: After reading the text several times, I think it refers to something people do to celebrate because, in the text, it refers to Brazil and something like music and dancing. Also, I heard of something people in Brazil do to celebrate and this helps me to have this idea. But I still do not know its exact meaning; it may be due to my low proficiency in
English, my lack of vocabulary and grammar knowledge, or my lack of sufficient background knowledge.

5.4.2 The interplay of MRSs in learning to read between text type and L2 proficiency

Although there is not much difference regarding strategy use with text type, as shown in Table 5.8 below, the HPRs (53%) in this study displayed more frequent metacognitive strategy use than the LPRs did (48%) across the ability levels and text types. In addition, several observations were made regarding the strategy use by students of different proficiency levels with different text types.

Table 5.8 Type and frequency/percentage of overall MRSs by the HPRs and LPRS across text types

<table>
<thead>
<tr>
<th>Types of the MRSs in learning to read used by the HPRs and LPRs across text types</th>
<th>Frequency/Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Narrative Text</td>
</tr>
<tr>
<td></td>
<td>LPRs</td>
</tr>
<tr>
<td>Raw</td>
<td>%</td>
</tr>
<tr>
<td>1. Self-questioning</td>
<td>48</td>
</tr>
<tr>
<td>2. Comprehension monitoring</td>
<td>5</td>
</tr>
<tr>
<td>3. Skimming for main ideas</td>
<td>1</td>
</tr>
<tr>
<td>4. Deciding what to read closely and what to ignore</td>
<td>3</td>
</tr>
<tr>
<td>5. Self-correcting</td>
<td>2</td>
</tr>
<tr>
<td>6. Paying attention to topic sentences</td>
<td>0</td>
</tr>
<tr>
<td>7. Scanning</td>
<td>2</td>
</tr>
<tr>
<td>8. Picking out key words</td>
<td>2</td>
</tr>
<tr>
<td>Subtotal</td>
<td>63</td>
</tr>
<tr>
<td>Total</td>
<td><strong>219</strong></td>
</tr>
</tbody>
</table>

Raw refers to the absolutely frequency of the students’ mention of a strategy.

Note: Some percentages total to slightly more or less than 100 due to rounding.

Key: Low Proficient Readers (LPRs); High Proficient Readers (HPRs)

Key: MRSs = Metacognitive reading strategies

Firstly, the two groups did not use similar strategy types across ability levels and text types because the strategy of ‘paying attention to topic sentences’ was never used by these LPRs for both texts (see the highlighted) and there is no difference between
text type regarding frequency results. However, the difference between text types in relation to this strategy was observed during the protocol analysis of this study, even though the frequency of use of these HPRs is from a few particular participants. Besides, both groups preferred ‘self-questioning’ for both texts even though there was a slight difference in self-questioning use (see the highlighted). However, a difference in use of this strategy with text types was observed during the protocol analysis. In contrast, for the HPRs, ‘comprehension monitoring’ was used more frequently with the expository text than the narrative text (see the highlighted) and their use of monitoring in relation to the feature of the expository text was observed during the protocol analysis. Moreover, despite the fact that there is not much difference in strategy use of ‘skimming for main ideas’ regarding text type between these HPRs and LPRs in terms of frequency results, the difference between text type in relation to this strategy use was observed during the protocol analysis of the present study and so this was discussed and remained here even though the frequency of use is from a particular few participants. Thus, these strategy types mentioned above are presented below with the excerpts taken from the participants’ verbal reports in the TA and the IRI sessions, along with the original text content provided. This is best to illuminate how these strategies were used by these high and low proficient readers to read the texts of the narrative and expository types.

5.4.2.1 Skimming for main ideas

As seen from the example below, a HPR, Li, seemed to perceive a difference in the reading comprehension question types between the narrative and expository texts while trying to obtain the main ideas in both texts quickly since she thought that the questions were usually specifically related to the main ideas of the text content. Thus, the excerpts below illuminated the difference perceive by her regarding the reading comprehension question types between the narrative and expository texts.
Li, a HPR reading the expository texts, TA: I decided to read the comprehension questions first. These include the best title for the article, what the writer reveals about Washington’s tent, what she was asked to do about the tent, and the time when Washington’s tent was used.

Li, a HPR reading the expository text, IRI: To read the comprehension questions that follow the reading passages enables me to get what the text is mainly about first because the questions usually reveal the most important part of the reading and I can try to focus on those portions of the text to get the gist of it. The aim is to skim for the main ideas of the text I am to read. I think the article I’ve read this time is much more difficult than that I read last time. Take this reading comprehension question as an example, what can you learn from the article? In this case, I have to finish reading the whole article in order to understand the article as a whole. That is because this article involves the reader not only understanding the main ideas but also thinking of the subordinated ideas used to give information, descriptions, and explanations. In this case, it is like an expository text. Compared with the first article I read, I mean the narrative one about Washington’s tent, I think it deals with time, place, characters, and a resolution to a problem. It is more like a narration because it is full of an account of something that happened. In this case, you can more or less get the main ideas quickly by reading the comprehension questions.

5.4.2.2 Paying attention to topic sentences

As illuminated in the excerpts below, Yeh referred to a unique feature of the narrative text like a story full of descriptions about the sequence of related events while he was looking for topic sentences; knowing topic sentences could facilitate the comprehensive process in grasping the gist or the main ideas.

The narrative text: No one was sure how the hole had been made and where the missing piece of cloth be at that time.//

Yeh, a HPR, IRI: Mm... I think the topic sentence is important for reading comprehension. For example, while I was reading the text, I was looking for the topic sentence because it can reveal what the text is mainly about. In this case, after I finished reading the first paragraph, I found that the topic sentence in this text was the last sentence of the first paragraph and it reveals that no one was sure where the missing piece of Washington’s’ tent might be at that time so that I think the text is mainly about the missing piece and its discovery. That is because the text is about how the missing piece from Washington’s tent was discovered and it is like a story full of descriptions about the sequence of related events. I mean to find the missing piece.
By contrast, Yang referred to the expository text as including a particular topic with the supporting information about it, as commented by her: “The topic is about Brazil and the focus is about the Parade held in Brazil. That’s why I said the topic sentence is the first sentence and it is about the parade held in Brazil”. Also, she transferred this knowledge she had learnt in class to help her. Her excerpts reveal how this unique strategy was utilized with the expository text.

**The expository text**: Every year in February, around forty days before Easter, parades are held all over Brazil. In some of them, the participants compete for prizes. Rio de Janeiro, the best-known city in Brazil holds several competitive parades.

**Yang, a HPR, TA**: …every year in February, around forty days…parades are held all over Brazil….I am thinking about what the topic of the article is and…I think it should be about the parades held in Brazil.

**Yang, a HPR, IRI**: I usually try to find the topic sentence or think what the text is mainly about. So, while reading this article, I found out that the information is all about the parade held in Brazil. In this case, based on my knowledge, I think the topic sentence is the first sentence of the first paragraph because my senior high English teacher taught me that topic sentences include a topic and a focus. So, the topic is about Brazil and the focus is about the Parade. That’s why I said the topic sentence is the first sentence and it is about the parade held in Brazil.

### 5.4.2.3 Comprehension monitoring

During the protocol analysis, I found that the HPRs were monitoring their comprehension frequently with the expository text. Also, their better L2 proficiency enabled them to use this strategy effectively. Their monitoring was accompanied by analyzing structural relations within sentences in the expository text even though they also assessed the coherence of the interpretation related to what they were reading by reflecting back and finding clues from context. As commented by Yang, a HPR, in the TA: “I am thinking whether the word as has a meaning equivalent to that of the word because. It seems to me that there is a cause and effect relation between clauses”. Her
comments revealed that she tended to assess comprehension of the expository text content more often by analysing structural relations within sentences than by examining its relationship with other parts of the text, even though this was observed in the TA.

The expository text: The competition is very tough as the weakest school will not be able to compete in the following year.

Yang, a HPR, TA: as...the weakest school will not be able to compete in the following year...I am thinking whether the word as has a meaning equivalent to that of the word because. It seems to me that there is a cause and effect relation between two clauses...the weakest school will not be able to compete in the following year because the competition is very tough...I think it is coherent in this sentence.

5.4.2.4 Self-questioning

A close analysis of their verbal reports further indicated that differences in this strategy use related to text type existed between how the HPRs and LPRs questioned themselves while reading both texts. Noticeably, the LPRs’ lack of lexical resources constrained them from obtaining a better understanding of both texts. As shown in the example in relation to the expository text, a close inspection of individuals’ verbal reports showed that a HPR, Kay, and a LPR, Dia, tended to have their background knowledge relevant to what they had read activated while questioning the meaning of the word parade, even though they still paid attention to the contextual clues.

The expository text: Every year in February, around forty days before Easter, parades are held all over Brazil.

Kay, a HPR, TA: ...parade... what meaning is it?

Kay, a HPR, IRI: I was thinking whether it means the parade held in Brazil or not because in the text it says that it is held in Brazil and people dance and play music. I mean I watched the news related to this on TV.
The expository text: Every year in February, around forty days before Easter, parades are held all over Brazil.//

Dia, a LPR, TA: I am thinking what the meaning of the word [p-a-r-a-d-e-s] is...er...I think it might refers to an activity because it is held in Brazil even though I do not know its exact meaning.

Dia, a LPR, IRI: I still do not know exactly what activity it is but it seems to me that it is a carnival because I have heard of it being held in Brazil. However, in this text, the activity is the parade so it is not a carnival...I mean I have learnt the English word ‘carnival’ and know its spelling and meaning but I do not know the word parade because I have never learnt it. In this case, in the text, I can only know it refers to a kind of activity because I have heard of it being held in Brazil.

In contrast, regarding the narrative text, a close examination of individuals’ verbal reports showed that although a HPR, Grace, questioned the meaning of the word inspect and a LPR, Bia, questioned the meaning of the word reunited to check whether or not they had understood the word unknown to them, they both tended to refer to the semantic relations between portions of the text or the related events leading to coherence while reading the narrative text.

The narrative text: This led to an invitation for Loreen to inspect some sections of cloth in that museum’s collection. //Among them was a piece that looked promising.//

Grace, a HPR, TA: ...inspect......trying to think whether its meaning is to look into things carefully in order to check or not...

Grace, a HPR, IRI: I think this word means to look into things carefully in order to check because based on the passages I read previously I know Loreen was hired to study the tent very closely and she found a piece looked similar with that piece missing from Washington’s tent...I mean it is easy to know its meaning... like the related events leading to semantic relations.

The narrative text: Since then, the tent and the missing piece have been reunited and Loreen Finkelstein has been credited with solving old mystery.//

Bia, a LPR, TA: since then, the tent and the missing piece have been reunited... reunited... I am thinking whether this word has the meaning of being brought together or not. Loreen Finkelstein has been...has been credited with solving an old mystery... I roughly understand
that the missing piece and the tent were brought together but I still do not know what has been credited with and mystery means.

Bia, a LPR, IRI: I was thinking whether the word reunited has the meaning of being brought together or not because this article is mainly about how the missing piece from the tent was found. I mean it is full of the account of the related events about how to find the missing piece from the tent. So, I question its meaning on the basis of the related events reading to semantic relations between the sentences.

5.4.3 The interplay of CRSs in learning to read between text type and L2 proficiency

Although there is not much difference in strategy use related to text type, based on the available data, as shown in Table 5.9 below, in general, the LPRs (51%) displayed more frequent strategy use than the HPRs (49%) for both text types across the ability levels and text types, with 28% versus 22% for the narrative text and 23% versus 27% for the expository text. However, several observations were made concerning learners of different reading proficiency levels and text types.

<table>
<thead>
<tr>
<th>Cognitive Reading Strategy Types</th>
<th>Frequency/Percentage</th>
<th>Narrative text</th>
<th>Expository text</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LPRs</td>
<td>HPRs</td>
<td>LPRs</td>
</tr>
<tr>
<td>1. Translation</td>
<td>66</td>
<td>11</td>
<td>30</td>
</tr>
<tr>
<td>2. Re-reading</td>
<td>46</td>
<td>7</td>
<td>29</td>
</tr>
<tr>
<td>3. Guessing meaning from context through inferences</td>
<td>13</td>
<td>2</td>
<td>24</td>
</tr>
<tr>
<td>4. Suspending a reading problem</td>
<td>21</td>
<td>3</td>
<td>13</td>
</tr>
<tr>
<td>5. Using cohesive ties</td>
<td>8</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>6. Contextualization</td>
<td>1</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>7. Using background knowledge</td>
<td>3</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>8. Summarizing parts of text</td>
<td>3</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>9. Activating prior knowledge</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10. Word-solving behaviour</td>
<td><strong>10</strong></td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>11. Anticipating text contents</td>
<td>0</td>
<td>0</td>
<td>8</td>
</tr>
</tbody>
</table>
These HPRs and LPRs in this study did not use similar strategy types across text types and proficiency levels. For example, ‘anticipating text content’ and ‘visualizing text information’ were only used by these HPRs with the narrative text and so this pattern deserves attention even though the frequency of use of these HPRs is from a particular few participants (see the highlighted). Meanwhile, although there is a slight difference in using ‘translation’ for both the HPRs and LPRs, they seemed to use it frequently with both texts (see the highlighted). Also, the findings revealed that these LPRs seemed to frequently use the strategy type of ‘re-reading’ with the narrative text (see the highlighted); Besides, the strategy types of ‘using cohesive ties’ and ‘word-solving behaviour’ were discussed and remained here as findings (see Section 5.1). The strategy type of ‘using cohesive ties’ was mentioned more frequently with the expository text by these HPRs (see the highlighted). However, it is worthy of note that during the protocol analysis of this study, some observations in relation to the unique features of the narrative and expository texts were made when these HPRs and LPRs were using these above-mentioned cognitive strategy types. Thus, these strategy types are exemplified with excerpts taken from the participants’ verbal reports in the TA and IRI sessions, with the original text content provided, to show how similarly or differently they were used with the texts of the narrative and expository types.

5.4.3.1 Translating L2 into L1

Although these HPRs and LPRs regardless of their English proficiency predominately used translation as a strategy to improve reading comprehension in both
texts of the narrative and expository types, when their verbal reports were carefully examined, I only found a difference in their use of this strategy between both texts made by the HPRs only because the LPRs’ use of translation to understand both texts was hindered due to their relatively lower proficiency in L2 (see section 5.3.3.1 for detailed analysis of the typical LPRS using this).

As exemplified below, Kay, a HPR, tended to focus on the structural relations within the sentences in order to establish the relationship among the ideas presented in the expository text (e.g. *as* used to join two clauses) while she was translating the difficult portions of the text written in L2 into L1.

**The expository text:** Other groups join in later as the parade moves along.//

**Kay, a HPR, TA:** other groups join in later… join in later as the parades move along … I think it means that other groups join in later *as*… I am thinking how to translate this word *as*… I think it means when the parade moves along…

**Kay, a HPR, IRI:** Mm… I was thinking what the meaning of the word *as* is in Chinese. That is because I could understand these two sentences if they are separated. So, I was thinking of the different usage of the word *as* and, in this context, I think it has a meaning equivalent to that of the word *while* or *when* by translation and it is used to join two clauses.

On the other hand, as shown below, when it came to the narrative text, a HPR, Tian, tended to focus on the semantic relations leading to coherence from the related events in the text. This helped her to maintain the flow and coherence of the text while translating.

**The narrative text:** In 1778, George Washington was commanding troops during America’s Revolutionary war.// At night, he slept in his personal tent.// For almost a hundred years, that historical tent has been on display in a national park.//

**Tina, a HPR, TA:** Er… I think it means that in 1778, George was commanding… during America’s Revolutionary War. … I forgot the meaning of this word *troops*. At night, he slept in his personal tent… er… *For almost a hundred years*… I think it means that for almost a hundred
years… tent… *that historical*… er..........I am thinking of what the word *historical* means and trying to translate it into L1, but basically speaking, it is a comparatively old tent and connected to the history in the past because it has been on display in a national park for almost 100 years after Washington used it.

**5.4.3.2 Re-reading**

Although re-reading may have allowed these LPRs time to reflect on and enhance the narrative text content which they did not understand, when their verbal reports were examined carefully, I found no features most associated with the narrative text. Also, their narrative text comprehension was not enhanced because they seemed to be perplexed by constantly encountering the unfamiliar words. Take a LPR, Bia, as an example; although she mentioned re-reading the difficult portions of the narrative text if *her purpose was to make sure that she could understand what was essentially meant*, her language proficiency was a hindrance This is presented in her TA and IRI sessions below.

**The narrative text**: To confirm her suspicion, she traced its outline and later compared it with the hole in the tent.//

**Bia, a LPR, TA**: *To confirm her suspicion... confirm... suspicion... trace...* I do not know these words. I am going to re-read this sentence to make sure what it means....

**Bia a LPR, IRI**: In the text, it says to compare it with the hole because she was to find the missing piece of the tent, based on what I read in the text previously. But I still cannot understand what this sentence basically means even though I had tried because of too many unknown words.

sentence and that’s why I said to take people in.

**5.4.3.3 Using cohesive ties**

Although I observed that these HPRs in this study tended to refer to some cohesive ties such as the grammar words of reference items and conjunction items, and lexical cohesion (see section 5.3.3.7 for definitions) when their verbal reports were carefully examined, I found a difference in use of this strategy seemed to be
distinctively greater with the expository text (4%), when compared to the narrative text (1%). Also, they never mentioned the conjunction items while reading the narrative. Therefore, grammar words seemed to gain more importance in the expository text. However, they paid attention to not only the surface structure but also the deep-level semantic relations, when using this strategy, if they encountered difficulty in comprehending both texts. This will be clarified below.

**Reference cohesion**

As observed in the experts below, Grace considered the context while establishing what the reference to the word of *outline* was through inferences because she did not regard it as a discrete portion of the text. Instead, she was able to maintain the flow of the reading and coherence of the text via connecting what she was currently reading with what she had read previously from the larger discourse. The same was the case when establishing the reference to the word *them*. The following excerpts of their TA and IRI further illuminate how the strategy was used by the HPRs in both texts.

**The narrative text:** To confirm her suspicion, she traced its outline and later compared it with the hole in the tent.

**Grace, a HPR, TA:** In order to confirm her suspicion... eh... she *outline*... eh... *its outline*... compared it with the hole in the tent... Oh I think the word *outline* means the shape of the hole in the tent.

**Grace, a HPR, IRI:** She traced it and compared it with the hole, I think the word *outline* refers to the shape of the hole in the tent.

**The expository text:** Every year in February, around forty days before Easter, parades are held all over Brazil. In some of them, participants compete for prizes.

**Kay, a HPR, TA:** ... *in some of them, participants* ... *them* which one... participants or parades...I am not sure whether it refers to the participants or the parades...
Kay, a HPR, IRI: I am not sure whether it refers to either the participants or the parades. However, from the rest of the sentence, I think *them* refers to the parades because *participants* compete for prizes in some of the parades. I think this makes sense.

**Lexical cohesion**

As observed in the experts below, Yeh and Tina, formed logical relations between propositions in context because they seemed to make use of lexical cohesion (e.g. semantic relations between a number of words by considering part of speech) to infer the meaning of an unknown vocabulary item and so to make connections within both texts. The following excerpts of theirs in the TA and IRI further illuminate how the strategy was used by the HPRs in both texts.

*The narrative text:* One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent. //

Yeh, a HPR, TA: …visiting… mm… I am thinking what the phrase *the head of another museum* means…. I think *the head* refers to a person……I mean when you mention(verb) something (noun), there must be a person (noun) for you to talk (verb) to so that I think ‘the head’ refers to a person in the text.

*The expository text:* Therefore, the parade committee decided that for the future parade they would not announce the starting time. //

Tina, a HPR, TA: er… *the parade committee* …people who organize the parade? I am not sure.

Tina, a HPR, IRI: I think *parade committee* refers to people who organize the parade because the verb is ‘decide and there must be a decision (noun) made by people. That’s why I think the decision was made not to announce the starting time by people who organize the parade.

**Conjunctions**

As illustrated below, Yeh’s report was typical of those HPRs. He considered the context in which ‘*come to a halt*’ is used and paid attention to the cause and effect between sentences in order for the flow and coherence to occur while guessing words: “There is a conjunction ‘because’ used to show the reason why these parades also take
hours to finish”. This is illuminated in his TA and IRI below while reading the expository text.

**The expository text:** However, these parades often come to a halt and also take hours to finish because so many people want to take part.//

Yeh, a HPR, TA: …*come to a halt…come to a halt…come a halt…* I do not know what this phrase means…keep reading…

Yeh, a HPR, IRI: I still cannot get its meaning but this phrase must have a negative meaning parallel to ‘delay’ because there is a conjunction ‘because’ used to show the reason why these parades also take hours to finish.

5.4.3.4 **Anticipating text contents**

As illuminated below, a typical HPR, Kay, made predictions and in her IRI, she claimed that she made the prediction based on semantic relations leading to coherence in the narrative text content due to its causal structure like a story full of related events.

This is evidenced in both her TA and IRI below.

**The narrative text:** One day when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent.// This led to the invitation for Loreen to inspect some sections of cloth in that museum’s collection.://

Kay, a HPR, TA: I think she mentioned the missing piece from Washington’s tent one day when she was visiting another museum and I think Loreen discovered the clues and was invited to inspect some sections of cloth in that museum’s collection.

Kay, a HPR, IRI: I made a prediction. If she hadn’t found clues, how could she have been invited to inspect? Also, this text is about finding the missing piece from Washington’s tent based on the information given in the text like a story full of the related events. In this case, I think she discovered the clues.

5.4.3.5 **Visualizing text information**

As exemplified below, a HPR, Yeh referred to thinking of the plot during the TA sessions. In the IRI, he claimed that because he was using a mental image to think of the plot, he was able to understand what the narrative text was about, especially as the context was full of accounts, like a story. Here are his extracts to exemplify how this
strategy was used.

The narrative text: In 1778, George Washington was commanding troops during America’s Revolutionary War. At night, he slept in his personal tent. For almost a hundred years, that historical tent has been on display in a national park.

Yeh, a HPR, TA: I think it is a story about….I am thinking of its plot.(Yeh, a HPR, TA)

Yeh, a HPR, IRI: Because it is a story full of related events if I can understand the plot, it is easy to understand what I am reading.

Finally, it is worthy of note that there was not much difference in use of the strategy type of ‘word-solving behavior’ regarding text type, partly because it was regarded as being helpful in both texts for the LPRs, and partly because several instances of word solving behaviour were observed in these participants’ verbal reports for both texts, but they never mentioned using word collocation (except using, synonyms, orthography, and morphology) while reading the narrative in comparison with the expository text during the protocol analysis of this study. In this case, it can be inferred that vocabulary knowledge seemed more essential for reading the expository text and that the knowledge in relation to word collocation that the HPRs possessed was much better than that possessed by the LPRs. This deserves attention and remains here as findings, even though this difference might be from particular participants.

5.5 Conclusion

In brief, this chapter has dealt with the analysis and interpretation of the findings from the TA protocols and the IRI interviews that served as the principal sources of data. The findings revealed that these participants had a substantial metacognitive awareness and control of the process of learning to read and actively invoked 23 reading strategies in this regard. Three of them were classified as supporting, eight as meta-cognitive, and twelve as cognitive strategies. Based on the available data, the quality and quantity of reading strategy use was associated with L2 reading proficiency, as learners’ high language proficiency could influence the choice, usefulness, and
flexibility of the strategies utilized. In other words, the findings indicate an interaction between the readers’ proficiency level and their reading ability and the impact of the interaction of such on their strategy use, especially for the LPRs. However, caution is advised in interpreting the findings regarding this association even though there is some interpretation of the reasons for and ways in which strategies are employed between these HPRs and LPRs due to the exact nature of this study (frequency counts) and the small number of the participants. Also, an association between language proficiency level and strategy use was observed because several strategies that these HPRs used were never used by these LPRs but caution again is advised in interpreting this causality due to the length of the text, the small number of the participants, and the exact nature of this study even though students’ higher language proficiency can also influence choice of strategies (Gu et al., 2007). Meanwhile, the same is the case when these learners’ use of reading strategies was checked across text types and proficiency levels. However, regarding text types, I have to admit that the available data did not reveal a big distinction between text types in relation to strategy use because most of the differences are related to sentence structure level and vocabulary level and few of the differences are related to text structures. Thus, the next chapter will discuss these findings in relation to the research questions to provide readers with a unique profile of these Taiwanese first year university EFL learners’ metacognitive awareness and use of reading strategies with consideration given to different proficiency levels and text types.
Chapter 6  
Discussion and interpretation of the current research

6.1 Introduction

The aim of this chapter is to discuss the themes about the metacognitive knowledge of reading strategies that Taiwanese first year university EFL learners reported using. The discussion is related to and interpreted in the light of the theoretical and practical stance with reference to other studies and relevant literature dealing with similar concepts.

6.2 The key findings of the study

Based on the broad concept of metacognition within the information-processing model, the data of this exploratory case study situated in the interpretive stance clearly showed that these 12 Taiwanese first year university EFL learners had a substantial awareness and control of their cognitive activities while reading, which in turn entailed their use of 23 reading strategies in learning to read consisting of SRS, MRS, and CRS. The information provided demonstrated that reading in this EFL context is a complex process and that the importance of knowledge and control (metacognition) should not be neglected especially related to the meta-strategic reading processes and the relationship with reader factors and text factors: L2 proficiency levels and texts of the narrative and expository types even though it is impossible to draw a direct link between strategy use and proficiency level and a strong link between text type and strategy use over the text as a whole due to the exact nature of the study. Meanwhile, this study provides the empirical support for other research findings in relation to learners’ meta-strategic knowledge and their use of such strategies that are crucial for L2 reading in an EFL context, while revealing some other areas, issues or knowledge that deserve attention. Thus, in what follows, I will highlight and discuss the emergent themes related to these learners’ meta-strategic knowledge and use and the relationship of such with proficiency levels and texts of the narrative and expository types. Also,
other knowledge or issues that influenced these learners’ meta-strategic reading processes will be presented. This will be more clarified in the sections that follow.

6.2.1 Taiwanese first year university EFL Learners’ metacognitive awareness and use of reading strategies in L2 learning to read

As we have seen, the data revealed that these learners’ metacognitive awareness about reading is the combination of conscious monitoring and awareness of strategic reading processes and the utilization of reading strategies in learning to read. In other words, they were able to adjust their reading pace, according to the difficulty level of the text they were reading, manipulate everything in their reading, evaluate the usefulness and appropriateness of the strategy selected, and orchestrate the reading strategies if necessary when failure was detected in their reading comprehension. The reading strategies used by these learners were divided into three categories: supporting reading strategies (SRSs), metacognitive reading strategies (MRSs), and cognitive reading strategies (CRSs). The empirical findings supported the taxonomies of Mokhtari and Sheory (2001) and Malcolm (2009) regarding metacognitive awareness and use of reading strategy by L2 learners in a university context like Taiwan. However, of the strategies uncovered, some of them deserve attention and discussion because they gave rise to several issues related to strategy classification due to its miscellany. This will more clarified below.

First of all, it should be noted that many of the strategies involved a combination of different strategies (Oxford, 1990). Therefore, these learners did not display all of the same strategy types; instead, they used the following types that are not included in their classification, for example, ‘using cohesive ties’ (CRS), ‘scanning’ (MRS). The reason is that the former is mainly used with the strategy type of ‘guessing meaning from context’ and the latter is mainly used with the strategy type of ‘going back and forth in the text’ in my study even though both strategy types of ‘guessing text meaning’
and going back and forth in the text’ are included in their classification. My conjecture is that the exclusion of these two strategies is due to a lack of predominance of strategy use, as suggested by Baker and Boonkit (2004).

In addition, the categories do overlap (Rubin, 1975; Oxford, 1990). For example, although the strategy types of ‘anticipating text content’ and ‘guessing text meaning’ are considered cognitive strategies in my study because they involve readers working directly with the text to aid comprehension through reasoning, they might also be considered metacognitive strategies, as suggested by Mokhtari and Sheorey (2001) and Malcolm (2009), if they involve readers planning what to do to start reading. The same is the case with the strategy types of ‘self-questioning’ and ‘translating L2 into L1’. In my study, ‘self-questioning’ is considered a metacognitive strategy and ‘translating’ is considered a cognitive strategy because the former requires learners to monitor and check comprehension while reading and the latter requires learners to directly work with the text through analyzing contrastively between languages. However, both of them might also be considered supporting strategies if they are simply regarded as mechanisms through which learners as readers employ to aid their reading comprehension (ibid).

Finally, I agree with Grenefell and Macaro (2007)’s suggestion that some behavior might indicate more than one strategy. For example, in the taxonomies of metacognitive awareness of reading strategies in relation to L2 learning settings developed by Mokhtari and Sheorey (2001) and Malcolm (2009), the behaviour of ‘determining or deciding what to read’ is considered a metacognitive strategy as it requires readers as learners to decide what to read through selective attention and self-initiation. However, in my study, the strategy types of ‘skimming for main ideas’, ‘scanning’ and ‘deciding what to read closely and what to ignore’ are categorised as metacognitive strategies because readers as learners are involved in a kind of thinking
process of planning and checking, through selective attention and self-initiation, in order to decide what to read and to aid comprehension. In such case, some behaviour by readers as learners through selective attention and self-initiation might involve more than one strategy. This part of the findings endorsed this position. However, they also add that as a result of this, it makes assessing difficult and it is inevitable that classification continues to be various.

6.2.2 Utility of strategic knowledge in L2 learning and reading

These learners, based on their reported frequency, put text meaning in the first place because they had a strong awareness of their use of such strategies as decoding the text message through ‘translation L2 into L1’ (CRS) and ‘re-reading’ (CRS). Shih (1991) postulated that in the Taiwanese EFL context, grammatical rules and product-oriented process are highly emphasized in Taiwan where teachers often focus on the literal translation of a text basically to undertake meaning construction. With this in mind, their strong reliance on using such strategies might have been a transplant of their reading teachers’ classroom practice, i.e. EFL teachers’ explicit instructional focus on grammatical and sentence analysis might be reflected in their reading behavior. The students might also be influenced by their knowledge of EFL learning objectives—to improve their overall language skills. This raised the concern of how L1 cultural background and different literacy experience influenced L2 reading strategy use (Parry, 1996). Noticeably, although researchers (Anderson, 1991; Block, 1986; Carrell, 1989) posit that re-reading a more difficult portion of the text allows readers a chance to reflect on what they have read and what they are reading at that moment in order to link ideas between different portions of the text coherently for better comprehension of it to occur, Zhang (2001) suggests that too frequent use of a re-reading strategy could impede the reading speed and the coherence of what is read. This deserves attention even though it was not uncovered in my study.
Moreover, reading is a very complex process that requires many different skills. Hancock (1998) believes that in reading, comprehension involves understanding the vocabulary, seeing relationships among words and evaluating the context. Unsurprisingly, these EFL learners, as suggested by Zhang (2001), tended to remediate their reading by guessing meaning through inferences (e.g., shifting their attention to other items or propositions in the text regarded as context clues to infer meanings of the unknown words or phrases). Meanwhile, this further showed the importance of the lexical knowledge and vocabulary attached to L2 reading as the basic building material for comprehension among EFL learners (Zhang, 2001). What is more interesting, though, is that this part of the findings echoed that of Yang (1993a, 1993b as cited in Oxford & Bedell, 1996, p. 56), who finds that, “guessing meaning is common among Taiwanese undergraduate learners but less common among Puerto Ricans”. This may testify to a tendency that Taiwanese EFL learners at university level tend to do so. Meanwhile, this further raised the main concern of Hsiao and Oxford (2002) and Zhang (2003) that the connection between the strategy use and the cultural context in which it takes place, for this is an important theme in the LLS research. It is relevant to this current study to some extent; taking place in the Taiwanese research context is culturally distant from the Western context like the Puerto Rican one.

6.2.3 Meta-strategic reading as comprehension monitoring

Theoretically, as documented in the literature, Flavell (1985) defines the ability to monitor reading comprehension and allot appropriate strategic actions as metacognition. These learners were observed to be able to monitor and check their comprehension while reading through strategic actions. They had an awareness of using the strategy types of ‘self-questioning’ (MRS), ‘comprehension monitoring’ (MRS), and ‘deciding what to read closely and what to ignore’ (MRS) to remediate their reading comprehension. In the literature, the importance of ‘self-questioning’ is
recognized because researchers (Chen & Mostow, 2009; Carrel, 1987) believed that ‘self-questioning’ bolsters metacognitive awareness and helps students to monitor their own reading comprehension in some strategic ways. In my study, participants’ use of this strategy enabled their remediating of the reading process through reading the comprehension questions to get the main ideas of the text. Thus, self-questioning seems to be an effective approach to improve text comprehension.

As noted above, meta-strategic reading is closely related to comprehension monitoring. Garner (1994) states, ‘comprehension monitoring’ is regarded as a reflection of learners’ ability to accurately assess the information within their own cognitive system. For instance, these learners were able to assess and monitor the text information while engaged in cognitive activities like reading through finding clues from the context or using translation. This part of the findings further indicate an important issue proposed by Yang (2006), who argues that there is conceptual overlap between comprehension monitoring strategies and reading strategies because a cognitive reading strategy may not turn into a comprehension monitoring strategy unless readers themselves are actively engaged in the reading process and use it as a remedial or intentional action to aid them in assessing their own reading comprehension. With this in mind, knowledge of a reading strategy is not considered metacognitive unless it is actively used in a strategic manner to ensure that a goal is met; namely, simply possessing knowledge of reading strategies without actively utilizing this information to oversee reading comprehension is not metacognitive (Livingston, 1997).

The ability of metacognition in relation to strategic reading, as we have seen in the literature, enables learners as readers to understand how strategically a reading task is performed for better reading comprehension to occur (Zhang, 2001; Li & Munby, 1996). The results in my study seemed to support this position because the participants
understood how strategically they had to perform in order to remediate their failures in reading comprehension if they were to obtain a general text comprehension through ‘deciding what to read closely and what to ignore’ (e.g. skipping words or phrases not essential to the key text information after assessing their comprehension). However, this highlighted the main concern of Aebersold and Field (1997) because they think that this strategic knowledge requires readers to determine whether an unknown word or phrase is not essential to the key information if their reading purpose is to get a general understanding of the text content (ibid). In addition, theoretically regarded, strategy awareness and use is especially likely to occur in situations that stimulate a lot of careful and highly conscious thinking (Flavell, 1992) and metacognition involves not only the awareness of whether or not comprehension is occurring but also the application of one or more strategies in conjunction with other strategies (Baumann, Jones, & Seifert-Kessel, 1992). For example, the participants varied their reading strategies according to how well they understood the material and how difficult the material was. To compensate, they explored strategies and invented ‘using filler words’ (SRS) to get a rough idea of the text content after they failed to ‘guess meaning from context through inferences’ (CRS). However, it is noticeable that this part of the findings seemed to suggest the fact that reading success involves not only sufficient reading vocabulary size for word recognition but also strategic awareness since the absence of one of these elements is not regarded as conducive to successful reading comprehension in terms of the metacognitive aspect of learning to read, as discussed by Afflerbach et al. (2008).

6.2.4 Role of linguistic knowledge and background knowledge in L2 learning and reading

These Taiwanese learners’ reports on their meta-strategic knowledge and their use of such knowledge as strategies showed that they perceived the importance of the
knowledge of linguistic properties in reading comprehension (e.g. lexical resources, vocabulary knowledge, grammatical structure and knowledge, and cohesive ties) and background knowledge. In the literature, cohesive ties, such as lexical cohesion, conjunction items, and reference items, play a central role in reading comprehension because cohesion refers to the relations of meanings (semantic relations) that occur in a text to hold discourse together (Holliday & Hasan, 1976). These learners paid attention to the structural and semantic relations within the text between sentences and used linguistic knowledge of such mainly to establish meaning of the unknown words or phrases from the context. The results would suggest the importance of readers’ knowledge of such in L2 strategic reading if they are to synthesize meanings between a number of words that occur in a text to hold the discourse together in order for comprehension to occur (Schmitt, 2000). What is more important, though, is that the participants’ grammar knowledge enabled awareness and appropriate use of grammar words, such as reference items and conjunction items, to facilitate reading comprehension with consideration given to text cohesion. Therefore, these findings emphasize the significance of lexical and grammatical knowledge in L2 or EFL reading. This is because knowledge of such is related to the strategies linked to the linguistic elements associated with the bottom-up process in L2 reading, as suggested by Macaro and Erler (2008), and metacognition in learning to read refers to how readers control their knowledge of their cognitive resources in the reading (Temur & Bahar, 2011).

In addition, the study confirmed Temur and Bahar’ (2011) research findings that ‘paraphrasing’ (SRS) is regarded as a commonly used strategy type for university level EFL learners. Its effectiveness in reading comprehension is also recognized (Kletzien, 2009). These learners used their own words and phrasing to translate the difficult reading material in conjunction with the knowledge of grammatical structure in order
for the better meaning construction of the text content to occur. There is a likelihood that when readers’ ability in the language reaches a certain level, this meta-strategic knowledge and use could increase their reading comprehension (Wenden, 1998). Also, these learners frequently ‘suspended a reading problem to solve it later’ (CRS) when their comprehension of the text short-circuited but they were willing to explore their meta-strategic knowledge. They activated this knowledge in relation to reading comprehension, for example, word-solving behaviour (vocabulary knowledge) (CRS) and background knowledge (CRS). Some researchers have emphasized the importance of vocabulary knowledge and regarded it as one of the key elements of reading comprehension (Laufer, 1997; Nation, 2001; Alderson, 2000). These learners had a clear awareness of vocabulary knowledge, such as orthography, synonyms, morphology, and word collocation, and used them as a cognitive strategy type of word-solving behaviour in order to understand the text better. These findings therefore suggest that the strategies relevant to the knowledge of linguistic elements or properties in the text are a necessary prerequisite for a better understanding of the text (Zhang, 1997, as cited in Zhang, 2001; Rao, Gu, Zhang, & Hu, 2007) because vocabulary knowledge helps students with decoding, which is deemed an important part of reading comprehension (Qian, 2002). What is more important, though, is that the findings would support the position that the readers’ awareness and control of the reading processes that are regarded as cognitive activities centre upon metacognition, “metacognitive awareness of, or perceptions about, strategies and the relationships among awareness or perception of strategies, strategy use, and reading comprehension” (Waxman & Pardon, 1987; Pardon & Waxman, 1988; Barnett, 1988; Carrell, 1989a; cited in Carrell et al., 1989, p.648). Similarly, in L2 research, background knowledge about a subject or theme is an important aspect in successful reading comprehension (Li & Munby, 1996; Block, 1986; Cheng, Hsu, & Chern, 2012). For example, the study
of Lee (1986) indicates that readers’ ability to recall the text content is enhanced when they are presented with the relevant background knowledge. Also, Hammadou (1991) posits that background knowledge affects the comprehension processes because it enables readers to construct meaning through a thinking process that involves reasoning beyond the text through generalization and explanation. The findings from the current study would indicate that readers’ background knowledge affects the comprehension process and that recall and comprehension are not the products of the text alone (Chou, 2011).

6.3 L2 proficiency and L2 meta-strategic reading and learning

Metacognition, thought of as comprising learners’ metacognitive awareness about strategic reading and control, involves thinking about the reading process, planning for reading, and monitoring comprehension. Metacognitive readers oversee, supervise, regulate, and evaluate the reading process and know to use effective strategies to verify what is read and also orchestrate specific steps or actions in problem-solving during comprehension monitoring (Wenden, 1991; O’Malley & Chamot, 1990). The findings of the present study indicate an association between strategy use and language proficiency, but caution is also advised in interpreting the findings because the exact nature of this study could not reflect a tendency in relation to strategy use over these HPRs and LPRs, even if there is some interpretation of the reasons for and ways in which strategies are employed, due to limitations of the research study, which include sample size and the use of frequency counts. However, qualitative data has provided some further indication of how strategies are employed by different L2 learners during different tasks. This was reflected in their understanding of what, when, where, and how they used these strategies divided into three categories of SRSs, CRSs, and MRSs. The HPRs in this study seemed to have a clear awareness of the effectiveness and appropriateness of the strategies they used. The LPRs in this study appeared to have
‘short-circuited’ their deployment of effective reading strategies for meaning-making (Clark, 1980; Zhang, 2001). These HPRs, in comparison, were not so much confined to their linguistic boundaries. Take, for instance, their appropriate strategy awareness and uses of ‘comprehension monitoring’ (MRS), ‘skimming for main ideas’ (MRS), and ‘picking out key words’ (MRS); the HPRs were obviously more effective and efficient than their low proficiency counterparts in that they were able to examine the relationship between the unknown parts and other parts of the text content for meaning construction by virtue of their better reading proficiency levels. This was reflected in the LPRs’ verbal reports on their lack of grammatical knowledge and lexical resources. Thus, this part of the findings seemed to show that, due to their relatively lower L2 proficiency, the LPRs could not utilize the aforesaid strategic knowledge for effective meaning-making to some extent.

6.3.1 Role of linguistic knowledge and other knowledge in L2 strategic reading and learning

L2 proficiency level in this study seemed to again have an impact upon strategic reading, especially regarding the awareness of linguistic knowledge of cohesive ties, and word-solving behaviour and other knowledge, e.g. background knowledge. Previous research findings have stressed the importance of using background knowledge in both L1 and L2 reading (Li & Munby, 1996). However, this did not appear to be advantageous for the LPRs in this study. Take, for instance, their awareness and use of the strategy types of ‘self-questioning’ (MRS) and ‘suspending a reading problem to solve it later’ (CRS); the available data showed that the HPRs’ relatively higher L2 proficiency enabled them to use the contextual clues to activate the relevant background knowledge and associate the background knowledge with the text while engaging in self-questioning or solving the reading problem suspended. In contrast, their low proficient counterparts felt much more challenged and failed to do so owing to
their deficiency in lexical resources and grammatical knowledge. This might indicate that these HPRs’ comparatively better L2 proficiency, which could also arm them with necessary background knowledge in their daily L2 learning experience. In other words, before L2 readers become familiar with their language as a system in L2, their strategic reading will not be of much help (Carrell, 1991). What is more important, though, is that Zhang (2001) posits that if readers do not have background knowledge, their comprehension might suffer. This part of the findings endorsed this position to some extent, especially for the LPRs.

Researchers have acknowledged the important role of vocabulary knowledge (e.g. synonyms, orthography, morphology, and word collocations) in L2 reading comprehension (Nation, 1990; Schmitt, 2000). These participants referred to some of the instances while reading. Joshi and Aaron (2000) find that vocabulary knowledge is a strong predictor of reading ability when factoring reading speed with decoding and comprehension. However, the LPRs’ knowledge of such seemed limited to some extent because they never mentioned the knowledge of word collocation that the HPRs had learnt and used. This indicated that classroom instruction had a bearing on L2 readers’ metacognition provided that metacognition refers to “one’s knowledge concerning one’s own cognitive processes and products and anything related to them” (Flavell, 1976, p. 232). Nevertheless, it was unclear whether these LPRs were unable to report clearer awareness of it because of their different perceptions of the relevance of these strategies or whether this finding was due to the methodological limitation of the small number of the participants. What is more interesting, though, is that this part of the findings to some degree supported the position of Hsu (2010) that the knowledge of word collocation is an indication of EFL proficiency level in relation to reading comprehension among Taiwanese EFL learners. On this basis, it can be surmised that the LPRs were unable to report clearer awareness of its knowledge and use due to their
relatively lower L2 proficiency. Meanwhile, although these HPRs and LPRs had an awareness of using synonym, morphology and orthography, the available data to an extent showed that the HPRs appeared to outperform their low proficient counterparts due to their comparatively higher L2 proficiency. In this case, their strategic reading was not hindered. However, the LPRs were observed to feel much more challenged when they did not have sufficient lexical resources and grammatical knowledge in the English language and this exacerbated their comprehending the English texts. Thus, this concurred with the position, “strategic knowledge is important but understanding the necessary linguistic elements is equally important and decoding factors are crucial” (Bernhardt & Kamil, 1995 as cited in Zhang 2001, P.281). In other words, when readers’ EFL proficiency reach a certain linguistic threshold, this meta-strategic knowledge and use could facilitate reading comprehension (Carrell, 1989).

Employing the cognitive strategy type of ‘using cohesive ties’ as a way to interpret a word or phrase is referred to briefly in some of the previous strategy lists found in the literature. In Anderson’s (1991) list, for instance, ‘using contextual clues leading coherence to interpret a word or a phrase’ exists as a strategy type. Also, Cohen and Upton’s (2007) coding of reading strategies includes a strategy type referring to the use of conjunction items. In the present study, the HPRs frequently used cohesive ties, such as reference items, lexical cohesion, and conjunction items, leading to coherence mainly to guess the meaning of unknown words or phrases. The HPRs used the above-mentioned cohesive ties as resources through which to synthesize the text content into the larger discourse in order to infer the meaning of unknown words or phrases. In contrast, the LPRs tended to refer to the cohesive ties as isolated units instead of the context because of their lack of lexical and grammatical knowledge. This suggests that the LPRs pay more attention to surface structure when they have difficulty comprehending deeper-level semantic relations due to their relatively lower L2
proficiency (Block, 1992). Meanwhile, these findings also suggest two aspects. The first aspect agrees with previous research on the relationship between reading comprehension and metacognition because, while reading, metacognition consists of the knowledge and regulatory skills used to control one’s reading process; that is to say, the results of my study seem to suggest that readers’ metacognitive awareness of strategic reading is necessary, but a basic command of linguistic properties is equally important, as the lack of either element will hinder the effective use of strategy for comprehension regulation to occur, as suggested by Bernhardt and Kamil (1995). The second aspect concurs with the results of previous reading strategy studies. This is in line with the view of Oded and Walters (2001) that readers with a high proficient level, generally speaking, tend to process text at a deep level while readers with a low proficient level tend to stick to the surface level. Simply stated, the former are likely to synthesize simple propositions between passages into a larger discourse and the latter to analyze the linguistic units into discrete portions of the content. The findings once again indicate interactions between strategy use and language proficiency level because the latter is considered to have an impact upon readers’ choices of strategies and how they use them (Gu et al., 2007).

Finally, unlike their LPR counterparts, the readers with high proficiency in this study tended to be constructively responsive readers because they were not confined to lexical processing, such as translating L2 into L1 (CRS), or rereading (CRS) by virtue of their relatively higher L2 proficiency because two of the HPRs activated the strategic knowledge learnt and remediated their reading by means of paying attention to the text structure organization and searched for topic sentences in order to grasp the gist of the text. This part of the findings would suggest that learners could be changing with the change of the learning environment in which learning takes place because instruction had a bearing on their metacognition. Furthermore, a link between reading and writing
instruction should be established since that the belief of some researchers is that linking writing to learning to read in its own right can be an effective or productive method; that is to say, instruction on either reading or writing would facilitate outcomes in the other areas, as noted by Pagnucco and Sutters (1996).

6.3.2 Situations where meta-strategic reading took place

Theoretically regarded, meta-strategic reading refers to the regulation or control readers have over their reading comprehension processes, through which their strategic actions are activated and used in the situations that demand those (Mohamed et al., 2006). Parts of the findings from the present study lent support to this position. Several instances of their verbal reports on the strategic awareness and use of ‘skimming for main ideas’ (MRS), ‘picking out key words’ (MRS) revealed that readers with different proficiency levels realized the situations where they had to read the comprehension questions or pick out the key words in the text if they expected to obtain the main ideas or connect the chunks of key information of the text. However, the LPRs were observed to be much more confined by their insufficient lexical resources and grammatical knowledge, when compared to the HPRs. In this case, the latter’s relatively higher proficiency in the target language might have armed them with the necessary linguistic knowledge to use these strategies effectively and appropriately (Zhang, 2001). Additionally, the available data showed that the HPRs tended to be flexible strategy users, when compared to the LPRs, because they tended to have a strong awareness of using the effective strategy types of ‘scanning for particular information’ (MRS) and ‘decide what to read closely and what to ignore’ (MRS), as suggested by Aebersold and Field (1997), in different situations (e.g. to save time and locate the particular quickly either before or during the reading process in the test-taking situations; to consider the situations by reading the sentence without the word and link what they were reading to what they had read already to see whether they could obtain a general text
understanding or not). Interestingly, this part of the findings further uncovered the connection between strategy use and test-tasking, so attention should be paid to this particular area because sometimes the strategies learners apply are not directly connected to language learning but are characteristic features of the human brain when it comes to the strategies which are used by learners in a test-taking situation (McDonough, 1999; Abidin & Mohammadi, 2011).

6.3.3 Awareness and use of strategic knowledge in L2 learning and reading

While these HPRs and LPRs frequently reported their metacognitive knowledge and use of such strategies as decoding the message in the text, either through ‘translating L2 into L1’ (CRS) or ‘re-reading’ (CRS), which suggests that they preferred these strategies for meaning making, based on the available data, the HPRs tended to be not only ‘code breakers’ but also “meaning makers’ (Luke & Freebody, 1997 as cited in Zhang, Gu, & Hun, 2008, p. 264); i.e. they knew better how to use these strategies because they tended to check the usefulness of them (e.g. considering the context while translating and re-reading the difficult portion of the text for meaning-making) rather than solely relying on decoding the linguistic data due to better L2 linguistic knowledge. The findings therefore indicate that their superior linguistic knowledge paved the way for them to do so (Zhang, 2001) and that the linguistic elements in an L2 are as important as the strategy knowledge the learners have if “cognition refers to knowledge and skills one has and their use and meta-cognition refers to awareness and conscious control over those”, as noted by Tumer and Bahar (2011, p.421). What is more interesting, though, is that the data seemed again to further indicate to some extent that, by virtue of their better L2 linguistic knowledge, the HPRs tended to be the ‘global users’; i.e they knew better which strategies they have and could use them more effectively in order for comprehension to occur, e.g. several instances of their frequent utility of the strategy types of ‘deciding what to read closely’ (MRS) to obtain a general
idea of the text message (Aebersold & Field, 1997; Block, 1992) and ‘picking out key words’ (MRS) thought to be conducive to the key text information comprehension (Li & Munby, 1996). Meanwhile, it would be worthy of note that though these learners generally had clear metacognitive awareness and use of reading strategies, these LPRs seemed to be blocked by their insufficiency of it to some extent because their high proficient counterparts tended to be ‘meaning-getters and veters’ (Zhang, 2001, p.279); i.e. they had clear and strong awareness of using the following strategies regarded as those that competent readers tend to use while controlling their reading comprehension processes at different times to better comprehend the readings, e.g. ‘anticipating text context’ (CRS), ‘visualizing text information’ (CRS), ‘paying attention to topic sentences’ (MRS), and paraphrasing (SRS) (Zhang, 2001; Li & Munby, 1996; Kletzien & Dreher, 2004; Wu, 2003). In contrast, these LPRs never used them. This might be due to these HPRs’ higher L2 proficiency, which could also have provided them with the necessary linguistic knowledge to activate the metacognitive awareness of utilising them. Although this reveals an association between strategy use and language proficiency, because higher language proficiency can also influence choice of strategies (Gu et al., 2007), the issue of the direction of effect is a subject of some debate which requires further research. Meanwhile, although the findings showed that these LPRs never used these strategies, my conjecture is that this might be due to their strong reliance on linguistic knowledge rather than on checking the usefulness of the strategies. Instead, they focused their attention on decoding the linguistic data, e.g. translating the L2 into the L1 (CRS), or ‘rereading’ (CRS). However, for the LPRs, it was still unclear whether their lack of awareness and use of these aforesaid strategy types was due to their lower L2 proficiency; i.e. they repeatedly referred to the unknown words and their insufficient knowledge of the target language as a hindrance to their comprehension in their verbal reports, or because of their different perceptions of the relevance of these
strategies, or because these strategies were deployed by them to support other strategies, they are less consciously aware of them. Thus, based upon these results, it can be inferred that reading in an L2 is both a language problem and a reading problem, as discussed by Alderson (1984), because the HPRs knew better which strategies could be used more effectively in order for comprehension to occur owing to their better L2 proficiency. Moreover, Goh (1998) and Zhang (2001) reported that EFL learners in Chinese context had a stronger preference for cognitive strategies in their strategic learning, and that their activation of strategy awareness and use was severely constrained by their lack of enough linguistic proficiency. In other words, when they were required to complete an actual linguistic task, they were inclined to use strategies that are cognitively less demanding and skip and ignore the textual information due to their lack of proficiency in the target language (Zhang, 2001; Stanovich, 1980). In such case, using strategies of ‘translating L2 into L1’ (CRS), ‘re-reading’ (CRS), and ‘suspending a reading problem to solve it later’ (CRS) seemed to be the norm for the LPRs. The verbal reports of the LPRs on their actual strategic reading comprehension endorsed this position.

Although some researchers have indicated that successful or competent readers are able to use contextual clues to guess the meanings of unknown words or phrases while reading (Li & Munby, 1996; Block, 1986; Carrell, 1989; Zhang, 2001), others have questioned the utility range of this, because guessing meaning from context in its own right will not successfully help comprehension in a constrained context (Clark, 1980; Laufer, 1997). It might be suggested that the LPRs in this study did not use it as appropriately and flexibly as their HPR counterparts did, even though they both frequently preferred this strategy type. The findings showed that they did not reach the necessary linguistic threshold that could enable them to successfully use this strategy (e.g. their lack of grammatical knowledge, too many unknown words, and difficult
sentence structures of the text). This part of the findings seemed to concur with previous research (Gu & Johnson, 1996, Laufer, 1997). Meanwhile, guessing is strongly advocated as an effective strategy by researchers, but the participants, particularly these LPRs, appeared incapable of using contextual clues to guess meanings. In such cases, using the strategy types of ‘translating L2 into L1’ (CRS), ‘re-reading’ (CRS), ‘suspending a problem to solve it later’ (CRS) frequently tended to be the norm for these LPRs. Laufer (1997) has presented three kinds of difficult situations pertinent to the use of this strategy: words that the readers do not know, words that the readers think they know, and words that the readers cannot guess. These are considered the possible constraints on EFL readers and these in turn lead to the factors of non-existent contextual, unusable contextual, partial, and suppressed clues. My findings seem to support this view, for example their understanding of the unknown words was wild guesses, speculations or a recall of their meaning as they decoded the passages and regarded them as isolated units. The repeated findings suggest that comprehension monitoring as meta-cognition happens when readers reach a certain level of linguistic threshold, which in turn enables them to remediate their reading process by means of the application of any strategy for comprehension to occur, as indicated by Yang (2002). What is equally important, though, is that the participants’ strategic knowledge very often was confined to lexical knowledge and the importance of vocabulary in L2 reading comprehension.

Contrary to the results of Zhang (2001) study, my study uncovered the relationship between L2 leaners’ meta-strategic knowledge and their actual use of the strategy in specific reading tasks. For instance, the strategy type of ‘using filler words’ (SRS) invented by readers with different proficiency levels; the LPRs tended to be more likely to resort to this than the HPRs did because they constantly encountered linguistic obstacles, which in turn constrained them from using ‘guessing meaning from context
through inferences’ effectively even though they did try to do so. The findings suggest that even if the reader has good strategic knowledge of how to approach reading tasks (e.g. knowing when, where and how to utilize certain strategies), the specific problems in comprehension did not seem to be tackled completely and successfully. Similar findings have been reported in several studies (Carrell, 1991; Zhang, 2001; Baker & Brown, 1984; Afferbach et al., 2008). Besides, there seemed to be a likelihood that knowing when, where and how to utilize certain strategies cannot guarantee full comprehension of the text being read unless the reader has reached a certain linguistic threshold because, in the current study, both groups of the HPRs and LPRs resorted to using filler words and this evidence further endorsed this argument of Gu and Johnson (1996) and Wenden (1998).

6.3.4 Mismatch between tasks and strategy knowledge and use in L2 learning and reading

The most obvious part of this study for EFL reading instruction derives from the findings that some strategies learned in English classes may not be adequate or applicable to L2 reading tasks. This was reflected in the misuse of the strategy type of ‘paying attention to topic sentences’ by one of these HPRs and the misuse of the strategy type of ‘morphological knowledge as word-solving behaviour’ to tackle the unknown word ‘out-line’ and de-sign by two of these LPRs. This might suggest that due to the demanding nature of L2 reading, the knowledge received from the teaching of a specific reading strategy in the L2 strategic reading class may not be necessarily productive. Meanwhile, based on the aforesaid, it is also worthy of consideration that a limited vocabulary size, as well as a lack of sufficient knowledge of word meanings, often hinders the LPRs from understanding the meaning of the text because they did not realize that this knowledge was not applicable to every word (the lack of a clearer reflection about using their morphological knowledge), which caused misunderstanding
of the meaning of a word that they thought they knew. In such case, this raised the two factors that Qian and Schedl (2004) discussed: breadth of vocabulary and depth of vocabulary. The former refers to the size of vocabulary that a person knows and the latter relates to how well the person knows a word. These two factors play an important role in reading comprehension in my study for the low proficient learners because they are more likely to come across words with which they are not familiar. What is more important, though, is that strategy training and awareness training are equally important because the absence of the other is considered a hindrance to the use of task-specific strategies in terms of strategy utility range. More immediately, EFL instructors should encourage their students to vary their reading strategies as the reading requires. Research has shown that readers have to employ a wide range of strategies in order to read efficiently (Grabe, 1991; Forresst-Pressley & Waller, 1984). Meanwhile, research has shown that a limited vocabulary size (deficiency in lexical resources) and inadequate knowledge of word part meanings prevents learners from understanding the meaning of the text, especially for these LPRs (Parker, Hasbrouck, & Denton, 2002).

6.4 The interplay of proficiency level and text type in L2 meta-strategic reading and learning

Meta-strategic reading refers to the cognitive resources that readers possess about their strategic reading (knowledge) and how readers control these (regulation). Researchers have indicated that strategies used by readers for different text types vary according to how they process them (Meyer, Young, & Bartlett, 1989 as cited in Meyer & Ray, 2011) because their regulation in reading entail strategies to be used while reading different text types (Wise, Carrell, & Gajdusek, 1998). The findings of my study indicated that these leaners of different proficiency levels monitored and controlled their reading processes while reading the narrative and expository texts and deployed remedial strategies categorised into SRSs, CRSs, and MRSs to overcome
their comprehension difficulties. Most of the differences regarding text types are related to sentence structure level and vocabulary level rather than the text as a whole, although a few of the findings were related to different text structures. Whilst it is true that in my study the L2 proficiency seemed to have an impact on these learners’ meta-strategic knowledge and use in both texts, frequency count of strategy use across ability levels and text type did not reflect a tendency over the whole group. Thus, caution in relation to the interpretation of the exact nature of the relationship between text type and strategy used is advised.

6.4.1 The interplay of linguistic knowledge, utility of strategic knowledge, text type, and proficiency in L2 meta-strategic reading and learning

The total use of the supporting reading strategy by these LPRs was higher than these HPRs across text types and proficiency levels. This did not corroborate the findings of Yau’s (2005) and Paris, Wasik and Turner’s (1996) studies, in which the HPRs employed more reading strategies than the LPRs. Similarly, contrary to the findings of Anderson’s (1991) study, the two groups did not use similar reading strategy types across the text types and proficiency levels. These LPRs did not use the strategy type of ‘paraphrasing’ with both texts, which good readers use (Meijer, Veenman, & van Hout-Wolters, 2006; Pressley & Afflerbach, 1995). This might indicate that the HPRs generally tended to read with efficiency, monitor their reading process, adjust their reading pace, and were more varied in their strategy type use because they used different strategy types at different times when needed by virtue of their better L2 proficiency (Zhang, 2001). Also, the main reason for this might have been due to these LPRs’ limited L2 language proficiency; i.e. they had limited vocabulary knowledge and complained about the sentence or grammatical structure in both texts beyond their level. However, caution is also advised in interpreting this part of the findings because it may also be due to different perceptions of the relevance of
this strategy, the length of the text, or the nature of the task, which constrained them to use it, or it is utilized by them to support the other strategies. In such cases, they are less consciously aware of it if the reading strategies used by learners during the comprehension monitoring process as metacognition indicates how they conceive a task, what textual clues they attend to, how they make sense of what is read, and what they do when they do not understand (Block, 1986). What is more noticeable, though, is that this is not in keeping with Yau’s (2005) study, in which the LPRs preferred ‘paraphrasing’ in both texts. My conjecture is that the proficiency level of the participants in my study is much lower than those in her study. This stemmed from the fact that their main problem was the unknown vocabulary, as in Jimenez et al.’s (1996) study, and in mine, the available data showed that they repeatedly referred to it in their verbal reports as a hindrance to their comprehension.

Theoretically regarded, ‘learning to read not only requires adequate levels of analysed knowledge but also results in attainment of still higher levels of such knowledge (Bialystok & Ryan, 1985, p. 213). Seeing that grammar was as big a challenge as lexical constraints, linguistic knowledge might be, in LPRs’ minds, regarded as the basic building material for comprehension. The LPRs, in particular, said that they lacked lexical resources and grammatical knowledge so that they might have felt much more challenged. This is reflected in the fact that, for both text types, the LPRs frequently resorted to filler words. This part of the findings seemed to confirm the importance of L2 proficiency and its relationship with the use of strategies because, before readers reach proficiency in L2, they will not be of much help with L2 reading even if the readers have good metacognitive knowledge and use of the strategies in L2 (Perkins et al., 1989 as cited in Zhang, 2001). What is equally important, though, is that this part of the findings seemed to concur with the view of Cutting, Young, Eason, Geist, and Goldburg (2012), who maintain that narrative texts are concerned with sequence of
events and they are more cohesive than expository texts regarding text feature, because
the LPRs’ strategy use of ‘using filler words’ was coupled with unique features of the
narrative texts to help them with text comprehension even though the text
comprehension was still not successful. The main reason might have been the fact that
the narrative text selected for the present study concerned the finding of the missing
piece from Washington’s tent, so the students might have paid attention to how it was
discovered, as they mentioned the sequence of related events leading to coherence like a
story. This is consistent with the view of Horiba (2000), that the narrative text contains
a sequence of related events leading to coherence like a story so that readers tend to
resort to the causal relations between related events for meaning-making.

In terms of awareness and use of metacognitive reading strategies, the total use of
them by the HPRs was higher than that by the LPRs in both texts and this difference is
in keeping with earlier studies (Baker, 2002; Zhang, 2001; Sheorey & Mokhtari, 2001).
However, these HPRs and LPRs did not use the same metacognitive strategy types for
narrative and expository texts. This is contrary to Yayli’s (2010) study, in which the
participants of different proficiency levels reported using the same strategy types for
both texts. Moreover, the strategy type of ‘self-questioning’ was frequently preferred by
these HPRs and PRs for both texts. This contradicts Yang’s (2002) study, because these
learners, regardless of their reading proficiency level, actively participated in the
reading process while reading both texts. However, the LPRs’ unfamiliarity with the
target language constrained them from engaging in strategic reading even though they
were constantly doing so for both texts. This is in line with Zhang’s (2001) study, in
which a lack of linguistic proficiency in the target language constrained the participants’
use of metacognitive strategies even though they tried to engage in reading strategically.

Moreover, these LPRs displayed more frequent cognitive strategy use than these
HPRs for both text types. This does not corroborate the findings of Yayli’s (2010) study,
in which the HPRs displayed more frequent cognitive strategy use. Probably, the main reason, in my study, might have been the fact that the impact of LPRs’ reading model on reading strategy use was overridden by their limited L2 language proficiency and processing skills. This was reflected in their predominate strategy uses of ‘translating L2 into L1’ (CRS), and ‘re-reading’ (CRS), while processing the narrative and expository texts, because they have a tendency to use strategy types that are less cognitively demanding and used them less flexibly, appropriately and effectively for better comprehension to occur, as suggested by Zhang (2001), due to their lower EFL proficiency, even though the HPRs also used these strategies. However, the unique features associated with either the narrative or the expository text were not reflected in their meta-strategic use of ‘translating’ and ‘re-reading’ and this may be due to the methodological limitations (e.g. the small number of the participants, the length of the text, and the exact nature of the study) even though the available data showed that this resulted from their low proficiency in the target language. Meanwhile, this study also echoed Janssen et al.’s (2006) study because these HPRs and LPRs did not use similar cognitive strategy types across text types and proficiency levels. The LPRs never ‘visualized text information’ and ‘anticipated text content’ while processing the narrative text. However, based on my observations, there was less metacognitive awareness of the reading process for LPRs and this may have stemmed from the fact that their relatively lower L2 proficiency could not arm them with necessary strategic knowledge from their L2 learning experiences. Whilst this is supported by Gu et al. (2007) that students’ higher language proficiency can also influence choices of strategies, the association in this study is open to further interpretation and research.

6.4.2 The interplay of background knowledge, other knowledge, text type, and proficiency in L2 meta-strategic reading and learning

The findings revealed that these Taiwanese EFL learners’ verbal reports on their
strategic knowledge and use of reading strategies in the present study showed an association between strategy use and proficiency level and the relationship of such with background knowledge, and other knowledge (e.g. linguistic knowledge: using cohesive ties, word-solving behaviour, and text features). In one study, Pulido (2004) examined the effects of background knowledge on incidental vocabulary gain of words lacking any coherent meaning in context through reading and found that background knowledge does not help students with weaker levels of L2 reading proficiency and limited vocabulary knowledge even though L2 readers with inefficient decoding skills due to inadequate L2 knowledge would resort to their background knowledge more extensively to fill in the gaps in their understanding (Bernhardt, 1986; Stanovich, 1980). Parts of the findings seemed to concur with this because these LPRs’ expository text comprehension was not enhanced due to their limited vocabulary knowledge. This was reflected in their use of ‘filler words’ (SRS) even though they tended to refer to background knowledge while reading the expository text. Meanwhile, this is also in line with Alderson’s (1984) view that reading in the L2 is both a language problem and a reading problem because the absence of either proficiency in the target language or reading strategy knowledge might impact upon their process of learning to read. What is equally important, though, is that parts of the findings to an extent echoed the view of Cutting et al. (2012), Samuelstuen and Braten (2005), and Kuncan and Beck (1996). The structure of the expository text is thought to be less cohesive than that of the narrative and it is generally concerned with a particular subject, so that the expository text requires readers to activate the background knowledge related to the text content in order to understand it better. The main reason for this might have been the fact that the topic of the expository text selected for the current study is about the parades held in Brazil and the students might have had relevant background knowledge related to this, and so activated this while reading. The same was the case to the strategy uses of
‘self-questioning’ (MRS) and ‘comprehension monitoring’ (MRS). The repeated findings to some extent highlight the importance of background knowledge in understanding the expository text and the importance of semantic relations leading to coherence in understanding the narrative even though texts may not clearly fit the characteristics of one text type or another (Cutting et al., 2012).

Contrary to the findings of Yayli’s (2010) study, these HPRs in my study tended to ‘use cohesive ties’ in the expository text; they referred to some grammar words such as conjunction items and reference items and the cohesion between a number of words. They used them as resources for connecting what they were reading with what they had read from the larger discourse. This indicated that they paid attention to both the surface structure and the deep-level semantic relations when they have difficult comprehending texts (Block, 1992). Also, based on the protocol analysis, this difference seems to be distinctively bigger for the expository text, when compared to the narrative. The expository text includes fewer semantic relations leading to coherence than the narrative because these learners never mentioned the conjunction items with the narrative. Thus, grammar words seemed to gain more importance when they expressed how they interpreted the unknown words or phrases (Yayli, 2010) and understanding discourse markers such as connectives and signaling devices significantly contributed to comprehension of expository passages (Sanchez & Garcia, 2009). However, this study cannot make strong claims in this area and this may be due to the methodological limitations of the study (e.g. the length of text, the small number of the participants, or the nature of the task) even though the research reviewed earlier indicated this. Meanwhile, what is equally important and worthy of note, though, is that vocabulary knowledge, contrary to the findings of Best et al. (2008), seemed to be more varied and complicated in the expository text in order to improve its comprehension, when compared to the narrative text, and that the HPRs seemed to have good vocabulary
knowledge to be used to enhance their comprehension of the text (Parker, Hasbrouck & Denton, 2002). This is because the LPRs never used the knowledge of word collocation as a word-solving behavior that the HPRs used with the expository but the narrative text. In such case, this raises the concern of Qian ad Schedl (2004): breadth of vocabulary (the size of vocabulary that a person knows). However, this study cannot make strong claims in this regard and this may be due to the methodological limitations even though this is part of the findings.

Finally, these LPRs in my study were observed to be constrained by their lower proficiency in the target language and they tended to use strategies that are cognitively less demanding (Zhang, 2001) because this was reflected in the strategy type of ‘paying attention to topic sentences’ because it was only used by the HPRs for either text type. Although the findings are in accordance with previous studies, which showed that the LPRs tended to exhibit less metacognitive awareness of their reading process due to limited L2 language proficiency (Zhang & Wu, 2009; Zhang, 2001), reconsideration into this regard is advised to be taken because their lack of this strategy awareness might have been due to their different perceptions of the relevance of this strategy. Meanwhile, an awareness of the distinctive text structure or organization in the narrative and expository texts regarding topic sentences is revealed. As to the expository text selected for my study, the topic sentence was the first sentence because the topic was about Brazil and the focus was on the parade held in Brazil. In other words, a topic sentence includes a topic and a focus, and the information in the text is mainly used to elaborate on the parades held in Brazil. This echoed Medina and Pilonieta’s (2006) view that expository texts focus on providing information about a particular topic and often provide the key information in the topic sentences, with subordinating details supporting the main ideas to follow. In contrast, regarding the narrative text selected in this study, the topic sentence was the last sentence of the first paragraph, because the
text was like a story full of descriptions of related events about the missing piece from Washington’s tent being finally discovered. This story grammar, regarded as a common text structure feature in the narrative, is generally structured in a temporal sequence and consists of a plot and characters like a story, as noted by Medina and Pilonieta (2006). It is therefore clear that these findings indicate that using knowledge of the text structure to understand how the important ideas of a text are inter-related increases readers’ meaning-making, as observed by Meyer and Ray (2011).

6.4.3 The interplay of utility of strategic knowledge, text type, and proficiency in L2 meta-strategic reading and learning

It is well documented in the literature that factors of strategy use, text structure, and proficiency level are related to L2 strategic reading (Wu, 2003; Yoshida, 2012; Yayli, 2010). According to Cutting et al. (2012), texts may not clearly fit the characteristics of one text type or another. In my study, the findings to an extent revealed the interplay of the text structure, strategy use, and proficiency level even though few of the differences are related to text structures as a whole and most of the differences are related to sentence and vocabulary level. Although the association of this interplay was more or less reflected in these HPRs’ comparatively higher L2 proficiency, based on the available data, caution is advised in interpreting this exact nature due to the small number of the participants, the length of the text or the nature of the task. However, take, for instance, their reported meta-strategic knowledge and use of ‘translating L2 into L1’ (CRS), ‘paraphrasing’ (SRS), ‘self-questioning’ (MRS), and ‘comprehension monitoring’ (MRS) , they paid attention to the structural relations between or within sentences while translating difficult portions of the expository text to establish the relationship among the ideas presented in them. This was probably because the expository text selected in my study was about a comparison and contrast of how different kinds of parades are held in Brazil, and so the readers tended to pay attention
to the structural relations between or within individual sentences at the microstructure level to establish the relationship among the ideas presented in the text, according to Wu (2003). In contrast, they paid attention to the causal connections leading to the logical propositions of the narrative text while translating the difficult portion of the text for better comprehension, probably because narrative prose generally describes a story and is structured in a temporal or chronological order so that one event leads to another (Medina & Pilonieta, 2006). In this case, the participants were less aware of the microstructure of the narrative discourse. Instead, they seemed to notice the macrostructure, like characters, plot, climate, and solution to the conflict, and could comprehend the passage easily because the story grammar in narrative text is universal. Therefore, they did not need to translate every word and could interpret the content from the context, as suggested by Wu (2003). A similar case applied to using the strategy of ‘self-questioning’ (MRS) with the narrative. Meanwhile, it is worthy of attention that they tended to refer to the narrative text as a sequence leading to cohesion like a story because it contains the setting, plot, theme, and resolution to a problem while re-phrasing the passages to increase text comprehension (Wu, 2003). In contrast, they tended to refer to grammar words, especially the connectives used to describe how sentences are related to each other while paraphrasing to increase text comprehension because the expository text is less cohesive than the narrative one (Best, Ozuru, Rowe & Mcnamara, 2005). Based upon the aforesaid, the structural relations within and between sentences seemed more varied and gained more importance in expository texts because this type of text may be less cohesive than the narrative one and so readers should pay attention to the structural relations within and between sentences for meaning-making, as suggested by Wu (2003). Conversely, the semantic relations of a sequence of related events like a story leading to coherence in the narrative text seems to be conducive to the improvement in reading comprehension, as suggested by Yayli
(2010). The repeated findings suggest that the strategies for an increase in L2 reading comprehension are affected by the distinct features between narrative and expository texts. The former refers to the story grammar leading to semantic relations or cohesion. The latter refers to either the structural relations of sentences or connectives that join parts of a sentence. What is more interesting, though, is that, these HPRs demonstrated a strong awareness of which strategies could be used with the narrative text. They used the strategy types of ‘visualizing text information’ (CRS) and ‘anticipating text content’ (CRS) that these LPRs never used. Although students’ higher language proficiency can also influence choices of strategies (Gu et al., 2007), caution is advised in interpreting this association due to the exact nature of this study. Meanwhile, L2 readers often visualize or form a mental representation of the narrative texts while reading because their reading of them is accompanied by a sequence of visual images that express their semantic content (Denis, 1982). The findings of my study to some extent endorsed this position; i.e. they realised that if the text context is full of accounts of what happened like a story, by thinking of the plot in their mind, they could get a clear picture of the text content. The repeated results reinforced the link between the strategy use of ‘visualizing text information’ and the narrative text. Also, Horiba (2000) characterized narrative texts as having fairly consistent and predictable semantic causal structures, based on intentional, goal-directed actions. Several instances of anticipating text contents based on the semantic relations derived from the causal link between the related events were observed among these HPRs. My conjecture is that the text selected in my study was mainly full of accounts of a sequence of related events about the discovery of the missing piece of Washington’s tent, which is intentional and goal-oriented. This might suggest the importance of using the strategy of anticipating the succeeding part of the text content in the narrative text as well.
6.4.4 Differences between reading comprehension question types and text types

Although there is not much evidence regarding how text type can influence how a strategic reader comprehends reading texts because many of my findings seemed to relate to sentence and vocabulary level strategy use rather than over the whole text, parts of my findings appeared to reveal a connection between different levels of comprehension between questions types designed for the texts of expository and narrative types. Question types designed for the narrative text are concerned with literal questions and are easy to tackle because the information needed is explicitly presented in the passage. In contrast, the question types designed for the expository text are difficult to tackle because the readers are required to integrate pieces of information presented in the text in order to infer the information needed. This is supportive of the view expressed by Cutting et al. (2012)—the relationship between question types in relation to reading comprehension assessment and texts of different types.

6.5 Conclusion

This current chapter has synthesised the emergent themes, addressed other issues allied to the results obtained from the research questions, interpreted them from different theoretical perspectives and discussed them with reference to the relevant literature. It has helped illuminate the picture and provide insight into what constitutes these 12 Taiwanese first year university EFL learners’ metacognitive knowledge of their use of reading strategies and what affects their strategic knowledge and use. It has also highlighted the factors of proficiency levels and texts of the narrative and expository types and other knowledge or issues that influenced these learners’ meta-strategic reading processes when approaching a reading task and their relationship of such with proficiency levels and text types. While it is these factors and issues, which signify a unique profile of some of the Taiwanese first year university EFL learners, it is impossible to draw strong conclusions about a direct link between strategy use and
proficiency level because the frequency of strategy use might relate to the choices of strategy uses made by individuals rather than frequency use over the whole group. Also, most of the differences in strategy use related to text types seem to relate to sentence and vocabulary level rather than over the text as a whole and so caution is advised in over-interpretation of the findings of smaller scale studies, although such studies can reveal interesting avenues for further research. Thus, the next chapter will set out the limitations of the study and its contribution to knowledge, as well as suggesting recommendations and further research.
CHAPTER 7
Chapter 7  The Conclusions, Implications and Limitations of the Current Research

7.1 Introduction

In this case study, I have demonstrated a range of factors that are pertinent to the design of the study, presented its rationale and significance, described its context, reviewed the literature in the field in relation to metacognition in L2 reading, described the stages of carrying out the study and analysis, and interpreted and discussed the findings. In doing so, I have uncovered what reading strategies in learning to read these Taiwanese first year university EFL learners used meta-cognitively and examined their utility when the factors of different reading proficiency levels and the texts of different types (the expository and narrative texts) were taken into account. The aim of this chapter is to transform the information regarding their metacognitive awareness of strategic reading into statements, with consideration given to different reading proficiency levels and texts of different types, and describe their usefulness in developing a strategic learning space in an EFL reading classroom. This chapter will present the contribution of the study to the literature in relation to the role that metacognition plays in L2 strategic reading when it comes to the awareness and control of cognitive activities during the reading processes through knowing a number of strategies available, when to use these strategies, and how to coordinate between strategies. This chapter will, therefore, include a summary of the main findings of the current study, the research limitations, some pedagogical and methodological implications and recommendations and opportunities for further research.

7.2 A Summary of the main findings and implications

The purpose of this exploratory case study based on the interpretive stance was to explore Taiwanese first year university EFL learners’ metacognitive awareness and use of reading strategies in learning to read and their differences in relation to varying
proficiency levels and text types while they were controlling their cognitive activities like the reading process. The strategies of which they were aware and used are the supporting, cognitive, and metacognitive reading strategies. The individual strategy types which they frequently preferred include ‘paraphrasing’ (SRS), ‘self-questioning’ (MRS), ‘comprehension monitoring’ (MRS), ‘deciding what to read closely and what to ignore’ (MRS), ‘re-reading a word, phrase, sentence or paragraph’ (CRS), ‘translating L2 into L1’ (CRS), ‘guessing meaning from context through inferences’ (CRS), and ‘suspending a reading problem’ (CRS). In addition, the participants tried to aid their comprehension with the help of ‘using cohesive ties’ (CRS) such as conjunction items, reference items and lexical cohesion and ‘using vocabulary knowledge as word-solving behaviour’ (CRS), such as orthography, synonyms, morphology, and word collocations. To compensate, they invented a strategy type of ‘using filler words’ (SRS) to get a rough idea of the unknown words or phrases after they failed to guess their meaning, to aid reading comprehension.

Furthermore, although the findings from the current study showed that these Taiwanese first year university EFL learners’ metacognitive awareness and use of reading strategies were to some extent related to their EFL proficiency levels, this deserves re-consideration due to the limitations of the study. Both the HPRs and LPRS had an awareness of the strategy types of ‘self-questioning’ (MRS), ‘comprehension monitoring’ (MRS), ‘translating L2 into L1’ (CRS), ‘re-reading a word, phrase, sentence, or paragraph’ (CRS), ‘guessing meaning from context through inferences’ (CRS), and ‘suspending a reading problem’ (CRS), and frequently used them during the reading comprehension monitoring processes in order for better comprehension to occur, but the LPRs repeatedly referred to their lack of grammatical knowledge and lexical resources as a hindrance to their reading comprehension monitoring in their verbal reports and so were unable to use these strategies efficiently and effectively. The
findings suggest that reading is both a language problem and a reading problem, especially for the LPRs. The same applies to the strategy types of ‘skimming for main ideas’ (MRS), ‘picking out key words’ (MRS), ‘using cohesive ties’ (CRS), ‘using vocabulary knowledge as a word-solving behaviour’ (CRS), and ‘using background knowledge’ (CRS). In addition, the HPRs seemed to distinguish themselves from the LPRs because they had a higher metacognitive awareness, which enabled them to use more reading strategies than their low proficient counterparts. The strategy types that the HPRs used included ‘paying attention to topic sentences’ (MRS), ‘anticipating text content’ (CRS), and ‘visualizing text information’ (CRS). What is more noticeable, though, is that these learners regardless of their proficiency level invented the strategy type of ‘using filler words’ (SRS) to compensate for their failure to guess meanings from context through inferences. This was to obtain a rough idea of the text content. These findings indicate that knowing when, where and how to utilize certain strategies cannot guarantee full comprehension of the text unless the reader had reached a certain linguistic threshold.

Finally, when their metacognitive awareness and use of reading strategies were checked across text types and proficiency levels, the results for overall strategy use indicated that these HPRs tended to use more metacognitive strategies for both texts. However, the results for overall strategy use indicate that these LPRs displayed more supporting and cognitive strategy use than the HPRs for both texts, because the data revealed that they tended to use strategy types that are less cognitively demanding. This might be due to their relatively lower L2 proficiency. Also, these HPRs and LPRs did not use the same individual types of reading strategy across the text types and ability levels. The strategy types of ‘paying attention to topic sentences’ (MRS), ‘anticipating text context’ (CRS), ‘visualizing text information’ (CRS), and ‘paraphrasing’ (SRS) were never used by the LPRs when reading either text. These
HPRs and LPRs frequently monitored their reading comprehension and used the strategy type of ‘self-questioning’ (MRS) for both texts, but it was of little help to the LPRs due to their low general proficiency level in the language. Meanwhile, there was little evidence for strategy use related to text type and most of the differences were related to sentence structure and vocabulary level rather than the text structure as a whole. However, based on the qualitative available data, a possible link between strategy use and text type can be made even though texts may not clearly fit the characteristics of one text type or another (Cutting et al., 2012). For example, the HPRs tended to refer to the related events leading to coherence like a story, and the plot, setting, theme and resolution in the narrative text, while using the strategy types of ‘anticipating the text content’ (CRS) and ‘visualizing the information’ (CRS) with the narrative text only. Furthermore, these HPRs frequently preferred ‘translating L2 into L1’ (CRS) for both texts and ‘comprehension monitoring’ for the expository text. In contrast, these LPRs preferred ‘re-reading (CRS)’ for the narrative. However, the HPRs tended to pay attention to the structural relations in the expository text and the related events leading to coherence in the narrative text by virtue of their superior EFL proficiency, when compared to their low proficient counterparts. This suggests that the sentence structure of the expository text is more varied. In contrast, the LPRs tended to use the strategy types of ‘using filler words’ (SRS), and ‘word-solving behaviour’ (CRS), for both texts. They tended to refer to the background knowledge related to the topic in the expository text and the sequence of related events leading to coherence like a story in the narrative text while using the strategy types of ‘using filler words’ (SRS). More importantly, although they tended to use the strategy of ‘word-solving behaviour’ (CRS), they never used the knowledge of word collocation with the expository text, unlike their high proficient counterparts. In this case, vocabulary knowledge seemed to be more varied and gained importance in the expository text.
Finally, these HPRs tended to use ‘cohesive ties’ (CRS) in the expository text and ‘paraphrasing’ (SRS) in both texts, when compared to their low proficient counterparts. Differences in the use of these strategies in relation to sentence structure level and vocabulary level for the narrative and expository text were observed. Discourse makers, such as connectives, and grammar words, such as conjunction items, seemed to gain more importance in the expository texts because they included fewer semantic relations of related events leading to coherence than in the narrative one.

7.3 Limitations of the study

As with all studies of this magnitude, there are various research limitations, even though the case study revealed some interesting findings that might inform EFL reading and instruction. These limitations are related to the design and methodology of the study and include its nature and the methods used for the data collection.

First of all, due to the purpose of the current research, I made a conscious decision to use the same texts with all of the participants, regardless of their reading proficiency level. I could have chosen to use the level-appropriate texts, and might then have found greater reading strategy use by the LPRs, but this would have made it more difficult to compare the two groups.

Another limitation that might have affected the study resulted from the inherent disadvantage of the think-aloud method. As Ericsson and Simon (1980) stressed, think-aloud data from the working memory will always be incomplete and exclude a number of thought processes which are not held in the working memory long enough to be expressed verbally. In response to these problems, I included the immediately retrospective interviews, as Nunan (1992) suggested that these problems are offset when combined with concurrent data from the working memory. When retrospective questioning is used only to illuminate and expand on the think-aloud results, it may add depth of information about the participant’s thought processes. It is therefore clear that
this factor is unlikely to have had much bearing on the results. Meanwhile, it cannot be denied that some strategy use by the participants might not have been observed due to the fact that some were less verbose than others. It is therefore clear that some of the strategies appearing in the verbal reports data might have been coded into categories more or less than necessary, because this method heavily relies on the participant’s verbal ability (Henk, 1993).

Also, the number of texts selected for the think-aloud sessions is one of the limitations of the study as well. The texts used for this study are confined to expository and narrative text types. Each genre consists of several sub-genres so that the findings could not be applied to other narrative text genres, like biographies, fairy tales, mysteries, short stories and so forth, or other expository texts, such as documentaries, reports, textbooks, persuasive essays, and so on (Meyer & Ray, 2011; Wu, 2003; Medina & Pilonieta, 2006; Cutting et al., 2012). It is therefore clear that, had I done so, I might have found greater reading strategy patterns in relation to the sub-genres of both the narrative text and the expository text.

Next, I must also acknowledge the inherent limitations of this exploratory case study design based on the interpretive stance. It was limited to 12 first year university EFL learners at a private university in central Taiwan, a comparatively small number compared to other, large-scale exploratory studies. Also, the students were from the same ethnic background and had received the same literacy education, which limits the relevance of this research to this particular group. Because of these aforesaid limitations in relation to the paradigmatic, ontological, and epistemological nature of the current study, transferring the findings beyond this particular group should be practised with caution. In other words, the small number of the participants limits the generalisability of the current study. Also, I have to acknowledge that the results obtained from frequency of strategy use have to be interpreted with caution because
some individuals tend to use certain strategies more than others; that is to say, it may be that frequency of use related to individual rather than over the whole group which gives the observed effect.

In order to create a natural reading situation and make it less intimidating, I let the students reflect on their thinking process and engage in their think-aloud sessions as naturally as possible. Yet, one limitation of the think-aloud method is that some mental processes might be non-verbal. Had I video-taped the think-aloud sessions, this would have allowed me the chance to capture non-verbal data, such as physical actions, during the think-aloud activities. However, the participants were asked to listen to audio-tapes of their think-aloud protocols with me immediately after completing them, not only to allow them to explain a certain point or behavior, which seemed incomplete, subvocalized or very odd to me, but also to give me a chance to clarify and check a certain strategic action of theirs. Also, if the participants were observed to pause and remain silent for a long time, laugh, or move their eyes quickly, I gave them a prompt neutrally and encouraged them to speak by saying, “What you are thinking” or “Don’t be afraid to express yourself.” This was to attend to the non-verbal data such as physical actions to some extent, and this approach was thought to be less intrusive (charter, 2003). It is clear therefore that this factor is unlikely to have had much bearing on the results because the study findings did not solely rely on the use of data gathered from one source.

In addition, although I did examine the verbal reports of the individuals with different proficiency levels and included some interpretation of the reasons and ways in which strategies are employed with texts of different types, caution is advised in interpreting the findings in relation to this. The available data showed that most of the differences in text types are related to sentence structure level and vocabulary level and few are related to text structures. In addition, the association between language
proficiency and strategy use is also tentative. The small number of participants in the study and the difficulty of collecting data about metacognitive, supporting, and cognitive strategy use make it difficult to draw more definite conclusions.

Finally, the limitations outlined above advise caution when interpreting the findings of the present case study. However, despite such limitations, this exploratory case study used a naturalistic approach and multiple methods to triangulate the data as far as possible. Thus, the findings revealed in the study might provide practitioners and educational researchers at the research site or in similar contexts with some information about these Taiwanese first year university EFL learners’ meta-cognitive awareness of reading strategies and the idiosyncratic use of them in relation to proficiency levels and the narrative and expository texts, as will be explained in detail in the following sections.

7.4 Pedagogical implications

This exploratory case study, based on the interpretive stance, has produced several significant implications. Theoretically, I focused on metacognition in reading because I believe that, if reading researchers or teachers could uncover EFL learners’ metacognitive awareness and use of reading strategies in learning to read, then they would be in a better position to make an informed choice when teaching L2 reading. In my study, the findings showed that the HPRs were more able to verbalise their own understanding of the reading strategies in learning to read available to them than their low proficient counterparts. This ability may allow teachers a chance to better understand learners’ difficulties in reading. This seems to suggest that the EFL readers should have metacognitive strategic knowledge and use, because if they were shown with the importance and utility of this knowledge (metacognition), they would perhaps start to reflect on their own reading and learning. In other words, I argue for the need to incorporate an opportunity for learners’ metacognitive awareness about their strategic
reading in order further to develop its growth in the EFL reading classroom, because if reading teachers encourage learners to think about their strategic reading process, they might be able to make strategic decisions about their process of learning to read to solve reading comprehension problems. This might create a pedagogical environment that is conducive to the students’ metacognitive growth, as Auerbach and Paxton (1997) and Careell et al. (1989) consider metacognitive awareness and control as the key elements of proficient and strategic reading, which enable readers consciously to control and monitor their reading process and execute appropriate actions to achieve their reading comprehension goal.

Second, the results show that the participants demonstrated an awareness and control of their cognitive activities while reading and that they knew which reading strategies to use, when, and how. In other words, they used cognitive strategies to work directly with the text content, metacognitive strategies to plan or monitor their reading, and supporting strategies to aid them in comprehending the text. The results might imply the importance of both knowledge and control in EFL reading comprehension monitoring processes because both components in the process of learning to read entail the use of reading strategies metacognitively (Block, 1992; Li & Munby, 1996, Singhal, 2001). In so doing, I suggest that the English teachers at the research site should encourage the learners, regardless of L2 proficiency, to think about the strategic reading process in order for strategic decisions to be made when they detect a failure in comprehension. This strategic knowledge and use seems to be the pathway for teachers to locate learners’ L2 reading difficulties and this could also further turn the classroom setting into a meta-strategic learning environment.

Although an association between strategy use and language proficiency is a subject of some debate due to the exact nature of the study, the available data seemed to reveal that reading in an L2, as discussed by Alderson (1984), is both a language and a reading
problem because the LPRs’ unfamiliarity with the target language intercepted their strategic reading even though they also took conscious steps or actions to comprehend what they were reading. This weakness seemed to affect the quantity and quality of the strategies used. In doing so, I suggest that the reading teachers at the research site should incorporate some elements of both linguistic knowledge and strategy instruction into their teaching to provide the LPRs with a chance to be meaning-getters and veters because Carrell’s (1991) findings suggest that informed training in the use of strategies for problem-solving in reading comprehension for unsuccessful readers can be useful in helping them to improve their reading ability, leading to potential improvements in their overall English proficiency in the long-run. Alternatively, reading instruction focusing on developing FL students’ decoding skills can be conducted concurrently with strategy-based instruction so that the provision of reading strategies is possible in the process of learning to read.

As we have seen, metacognition is an important feature of effective reading and reading instruction (Israel, 2007), as is metacognitive awareness of the reading strategies one uses. In particular, reading strategies employed by readers, their metacognitive awareness, and reading proficiency are closely related. To this end, another practical concern is that it would be worth teaching the strategy types revealed in this study regardless of their frequency counts because most of them are thought to be useful and effective, as discussed by Zhang (2001), Singhal (2001), Iwai (2011), Block (1992), and Li and Munby (1996), in L2 reading, such as ‘skimming for main ideas’, ‘comprehension monitoring’, ‘anticipating text content’, ‘scanning’, ‘using background knowledge’, ‘guessing meaning’, ‘self-questioning’, ‘picking out key words’, ‘using word-solving behaviour’, ‘using cohesive ties’, etc. However, it might be also necessary to take the factor of proficiency level into account because if the teachers at the research site are aware of the students’ reading ability, they might have the opportunity to
provide a tailored reading programme to some extent. In this case, the controlled practice can guide the learners to select the strategies that they consider will most enhance their comprehension of the text, as suggested by Zhang (2001). Also, the available data revealed that the LPRs’ deficiency in vocabulary size and insufficient morphological knowledge hindered them from better comprehending the texts. I suggest that the teachers at the research site should teach the meanings of new words to their students or encourage them to read more to increase the breadth and depth of their vocabulary knowledge for reading comprehension, partly because sufficient vocabulary knowledge of word meanings is conducive to better comprehension while reading, as suggested by Joshi (2005), and partly because EFL learners’ morphological awareness can be acquired through lexical processing and their knowledge of such become more distinct as their vocabulary expands (Chen, 2010). More importantly, according to Qian (2002), “having a larger vocabulary gives the learner a larger database from which to guess the meaning of the unknown words or behavior of newly learned words, having deeper vocabulary knowledge will very likely improve the results of the guessing work” (p. 518), because in my study the participants’ use of the strategy ‘guessing meaning from context through inferences’ was hindered due to their lack of vocabulary size, especially for the LPRs.

Next, although the study investigated the interplay of reading strategies, reading proficiency levels, and text types, the data seemed not to suggest a strong link between strategy type and text type; i.e. most of the differences in strategy use related to text type are relevant to sentence structure level and vocabulary level use and few of them are related to text type. However, based on the available data, I suggest that the English reading teachers at the research site could incorporate both the linguistic elements and strategy instruction in their L2 reading instruction across text types, especially for LPRs, to help them to become not only code-breakers but also the meaning-makers, like their
high proficient counterparts, as suggested by Zhang et al. (2008). Also, based on the literature indicated earlier, the strategy types considered to be taught to learners include the typical ones associated with the narrative text, such as ‘anticipating text content’ (Horiba, 2000) and ‘visualizing text information’ (Denis, 1982) and the typical ones associated with the expository text, such as using background knowledge (Cutting et al., 2012). However, the data revealed that the LPRs seemed to lack sufficient background knowledge related to the expository text. In this case, I suggest that teachers should encourage students to read more in order to build up new background knowledge about multiple subjects. After all, research has indicated that background knowledge is the basis upon which readers interact with the text they are reading (Garner, 1994). What is equally important, though, is that the data revealed that the expository text includes fewer semantic relations leading to coherence than the narrative one, so the grammar words such as connectives and discourse markers leading to text coherence and structural relations within and between sentences seemed to gain more importance in the expository text, as noted by Yayli (2010), than in the narrative one. Vocabulary knowledge appeared to gain more importance and make a greater contribution to expository text comprehension because word collocational knowledge was only used to comprehend the expository text even though both texts involved the use of orthography, synonyms, and morphology. In this case, in classroom settings, great effort is needed to make learners aware of the importance of grammar words such as connectives and discourse makers to increase the text coherence in order to enhance comprehension of expository text. The same is the case with the instruction of collocational knowledge (e.g. the combinations of verbs and prepositional phrases uncovered in this study), especially for the expository text, even though this combination is one of the many (Benson, Benson & Ilson, 1997). This is because there is good evidence that the knowledge of morphological properties indicates and predicts good reading
comprehension performance (Chen, 2011).

Also, the reading teachers should spend much more time on instructing students in grammar and vocabulary knowledge, especially, for the LPRs, because they are generally less proficient than the HPRs, based on their verbal reports. This is to equip them with the necessary linguistic threshold, which enables them to better comprehend the texts of the narrative and expository types, since that L2 reading differs from L1 reading in that L2 readers “start to read in the second language before achieving the kind of grammatical maturity and the level of oral vocabulary that L1 readers attain before they begin to read” (Shiotsu, 2009, p. 16). Thus, L2 learners must learn how phrases are constructed and cases are assigned to the constructed phrases in a new language (Koda, 2007). Alternatively, they should encourage more reading in general in order to increase vocabulary size to better comprehend both texts, especially for LPRs.

Also, in classroom settings, teachers need to instruct meanings of new words to impart knowledge as word-solving behaviour to students in order that they could tackle unknown words or phrases while comprehending expository texts because researchers regard vocabulary knowledge as a crucial element of effective text comprehension (Nation, 2001; Laufer, 1997; Grabe, 1991). Meanwhile, word collocational knowledge and morphological knowledge are thought to be closely related to EFL reading comprehension at university level in Taiwan (Hsu, 2010; Chen, 2011). To that end, reading teachers at the research site are encouraged to increase their students’ awareness of prefixes and suffixes that change the meaning of words, and a sequence of words that co-occur to convey a specific meaning, especially for the LPRs, because they were observed to lack such knowledge in my study. I also suggest teaching the strategies revealed in this study because they are thought to be useful and important strategy types, regardless of L2 proficiency and texts of different types, such as ‘using background knowledge’, ‘picking out key words’, ‘skimming for the main ideas’, ‘paying attention
to topic sentences’, ‘self-questioning’, etc. The same thing applies to the features of the narrative and expository texts because knowing the characteristics of the different text types facilitates reading comprehension (Wu, 2003). If learners of different proficiency levels are informed of the explicit elements of a sequence of related events leading to semantic coherence like a story, such as a plot, theme, setting, and resolution most associated with narrative text, and the explicit elements of expository text, such as the structural relations within the sentences and the connectives and discourse markers in a text used to hold the discourse together in a coherent way, learners of different proficiency levels can pick up some of the strategies which are foreign but of great value for them to use them with both texts of the expository and narrative types that they are reading while detecting any failure in text comprehension.

It is equally important to incorporate teaching of the five logical relations of expository texts, such as collection, causation, response, comparison, and description, even though the text structure of the expository text selected for this study is a comparative one, since Joe (1996) commented that, aside from grammar and vocabulary instruction, reading instruction should incorporate the teaching of text structure in order to facilitate reading comprehension. In doing so, the English teachers at the research site should make it explicit to the learners that the aforesaid structure of expository text consists of macrostructures followed by microstructures consisting of details and examples that support the macrostructure. In this case, instructors can use conceptual mapping to outline the structure rules for each type, therefore helping students to differentiate between macrostructures and microstructures.

Noticeably, the complexity of reading acquisition as a problem-solving process is well-documented in the literature for both L1 and L2 (Grabe, 2004). In this case, EFL teaching and learning is much more complicated than one study of this kind can encompass. I therefore suggest that the English classroom teachers at the research site
should adopt a teacher-researcher role to teach or train learners in the effective use of strategies during real reading tasks. Approaches would include concurrent or introspective think-aloud sessions (Ericsson & Simon, 1993) and retrospective journal-keeping (Parry, 1996). These approaches may help to explore further the kinds of meta-strategic knowledge that the students possess or need to develop (Wenden, 1998). Once the students’ misconceptions have been uncovered, teacher intervention will become more valuable. Besides, the teachers can encourage their students to share their positive experiences of using these strategies. If the teachers find it difficult to modify their learners’ fallible meta-strategic knowledge, they should take the initiative in facilitating the students’ use of the reading strategies they think the most effective.

Although vocabulary instruction is very common in foreign language classrooms in Taiwan, most textbooks in General English only provide explicit instruction of relatively basic English vocabulary (Chou, 2010). Gu and Johnson (1996) suggest that linguist ceiling might play in the comprehension process, even at the intermediate levels. In my study, these LPRs and HPRs used filler words to compensate for the unknown words or phrases even though the HPRs, classified into the intermediate level, did it infrequently. In such case, teachers at the research setting ought to encourage learners regardless of their proficiency level to do extensive readings because most language learners in Taiwan are not exposed to the target language outside the classroom as often as they would if they were in the United Kingdom or other English speaking countries. Therefore, it is even more important that in their leisure time, they spend time reading, not only for the enjoyment of the language, but also to gain vocabulary knowledge.

Meanwhile, the participants also revealed the situations or contexts where students can cope better through their use of the strategies such as ‘skimming for main ideas’, ‘deciding what to read closely and what to ignore’, ‘picking out key words’, and ‘scanning particular information’. One way of doing so in L2 learner training is that the
teachers at the research site should help them think about reading processes and pair their meta-strategic knowledge with their use of strategies in real reading situations because, in Baker and Brown’s (1984, p. 376) words, “the importance of employing problem-solving, troubleshooting routines “to enhance comprehension should always be made explicit”.

Another important pedagogical implication of this study for EFL instruction derives from the finding that there seemed to be the mismatch between the strategy types of ‘paying attention to topic sentences’ and ‘using morphological knowledge as the word-solving strategy’ learnt in English classes and their use during the given reading task in the current study. This suggests that the teaching of a specific reading strategy in an English class may be unproductive. Carrell (1991) argued that effective L2 reading pedagogy must include not only training and practice in the use of task-specific strategy i.e. instruction in orchestrating, overseeing, and monitoring strategies, but, more importantly, information about the significance and outcome of the strategies and the range of their utility because research has shown that readers must employ a wide range of strategies in order to read efficiently and that their ability to vary their strategies as the reading requires impacts upon their efficiency in reading (Grabe, 1991; Forrest-Pressley 1984; Li & Munby, 1996). It is therefore clear that the appropriateness and effectiveness of strategy use in contexts where such strategies can produce the best results should be a priority in strategy and awareness training.

Last but not least, Halliday and Hasan’s (1976) main concern, cohesion, is a linguistic property contributing to coherence. Cohesion creates text coherence or texture, as they call it. The concept of texture displays the feature of being a text. It is obvious that all languages have texts and so do certain linguistic features that create texture. As we have seen in my study, the HPRs seemed to be able to produce better reading comprehension in both texts because they were able to pay attention to not only the
surface structure (sentential level) but also the deep-level semantic relations from the larger discourse (textual level) due to their relatively linguistic knowledge in L2, while using cohesive ties (e.g. reference and conjunction items and lexical cohesion). It is therefore clear that grammatical features of syntax (sentential level) (e.g. the rules about how words are arranged and connected to make phrase and sentences) are fundamental building blocks for a better understanding of semantic relations from word meanings to sentential meanings leading to coherence in the text to occur (textual level). It is therefore evident that I suggest the teaching of grammatical knowledge through which learners can be armed with the necessary linguistic knowledge if they would like to use cohesive ties as strategies, especially for the LPRs.

7.5 Methodological implications

The results of this study were obtained from the think-aloud protocols and immediately retrospective interviews. I not only counted the frequencies of strategy type use for the quantitative analysis to see how frequently a certain strategy type was used by the participants and its possible relationship between different proficiency levels and text types but also carefully inspected their verbal reports to examine how differently or similarly a certain strategy type was used, with consideration given to different proficiency levels and text types for qualitative analysis. The aim was to analyze the data in a holistic way. It must be acknowledged, however, that the number of participants is small (N = 12), and therefore replication studies on a large-scale with a larger sample size using inferential statistical tests are required to examine or confirm the findings of the current research, even though this study yields useful information regarding the patterns of reading strategies that Taiwanese first year university leaners of English used meta-cognitively.

Given the fairly small number of the participants, 12 students, the qualitative analysis of the data has proved valuable. Therefore, it is suggested that future
comparative studies could have a longitudinal or ethnographic design, which would keep track of the students’ growth or change in meta-cognitive awareness and use of reading strategies with consideration of the factors of proficiency levels, text types or other factors investigated.

There is also a potential implication for theory and research regarding the use of different methods for the data collection. As a case in point, data about learners’ meta-cognitive awareness and use of reading strategies should be collected from several sources, not just one. Although I combined think-aloud protocols with immediately retrospective interviews to clarify any incomplete, odd or subvocalized thoughts of the participants, I suggest that future research might consider using the methods of participants’ learning journals, unstructured or in-depth interviews, and observation to collect additional important data that might otherwise be overlooked during the think-aloud sessions.

7.6 Suggestions for further research

The study of learning to read English as a foreign language or L2 will continue to develop as long as language researchers and applied linguists seek to understand different aspects of learning to read and maintain their quest for more effective instructional approaches with their increasing emphasis on learner-centred instruction and learner empowerment; namely, teachers making learners aware of other factors related to learning to read English as a foreign language or L2 will help them to think about their learning and reading processes. Thus, several aspects in relation to learning to read revealed by the current study might assume a greater role in teacher preparation if they are further investigated.

First of all, since that the current research took account of the cognitive aspect, future studies might be interested in analyzing the sociocultural aspect and its impact on literacy learning. That is because what is being increasingly emphasized in the
recent models of literacy education is process orientation. Kern (2000) reminds us of the fact that “reading and writing are always socially-embedded activities involving relationships, shared assumptions, and conventions as well as individual, personal acts involving imagination, creativity, and emotions” (p. 111). Therefore, a sociocultural perspective should be given equal importance to linguistic and cognitive ones in such studies so that they may better reflect the multiple facets of literacy.

Secondly, in this study, the learners capitalized on their vocabulary knowledge (e.g. orthography, synonyms, morphology, and word-collocation) to tackle vocabulary reading problems for better reading comprehension to occur. Further research may involve investigating vocabulary and its relationship with reading, since vocabulary knowledge is referred to as one of the key elements of effective reading and seen as a main factor of reading comprehension (Nagy, 1998 as cited in Bauman, 2009a). What is more important, though, is that another further research study on lexical patterns reflected by collocations should not be neglected because collocational knowledge is closely related to Taiwanese EFL learners’ text comprehension in reading and it is an indicator of the EFL proficiency level. That is particularly because, when compared with native English speaker competency, Taiwanese EFL learners, in general, were found to have great difficulty in producing appropriate lexical collocations due to their insufficient collocational knowledge (Liu, 1999; Huang, 2001; Hsu, 2010). The same case applies to the morphological awareness. This part of the findings facilitate more postulations among researchers for understanding learners’ morphological awareness in relation to vocabulary development between reading comprehension due to LPRs’ insufficient knowledge of such, particularly in EFL context like Taiwan, a continued exploration of the value of morphological awareness to reading comprehension through vocabulary development is worth pursuing if the relationship of such is recognized in my study.
Thirdly, two of the HPRs in this study transferred their knowledge of ‘paying attention to topic sentences’, associated with writing, and used it as a metacognitive strategy to locate the gist of the article they were reading. This suggests that linking writing to reading texts can promote reading comprehension to some extent, as noted by Pagnucco and Sutters (1996); however, further investigation into the link between reading and writing is needed in order to establish whether or not this is the case. What is more important, though, is that the topic of reading and writing connection is an international issue of major concern in the field of L2 learning but it is rarely explored in Taiwan, so that research into this area is required, as suggested by Chern (2006).

Next, the findings further revealed the differences between the comprehension questions and text types. The answers to the questions about the narrative text were easy to find because the question types for this kind of text require readers to recall the literal information that is explicitly presented in the text to some degree; however, the answers to the questions about the expository text were difficult to find because the questions types for this kind of text require readers to integrate various pieces of information presented in the text in order to infer the details needed. It is therefore suggested that further investigation into this area should be conducted because the extant literature has established that the characteristics of texts or questions influence comprehension but less is known about possible text and question interactions, as suggested by Cutting et al. (2012).

In the literature, it is documented that there is a link between cohesion and coherence, and this link is associated with the linguistic properties (e.g. reference items, conjunction items and lexical cohesion) that create semantic links (cohesion) within or between sentences within a text leading to text coherence (Halliday & Hasan, 1976; Hasan, 1984). This was reflected in my study that strategic reading comprehension process is closely related to ‘cohesive ties’. If linguistic properties are the fundamental
building blocks that create the pattern of semantic relations (cohesion) and the inability to perceive this pattern is associated with lack of linguistic features, which, in turn, leads to the failure in text comprehension during the strategic reading process, as suggested by Yayli (201), further research into this area needs to be conducted to establish whether it is the case or not even though it is not with this area of reading that this current research is primarily concerned.

In addition, further research might focus in depth on the differences between text types and strategy use to tease out whether these differences are to be found at sentence and vocabulary level only or whether different L2 learners do take account of different structure features of the different text types because the participants tended to refer to semantic relations leading to coherence like a story in the narrative text and the structural relations within or between sentences in the expository text while using strategies if faced with the difficulty in comprehending them.

As noted in the current study, parts of the findings revealed were contrary to previous studies, such as the strategy types of ‘paraphrasing’ and ‘using cohesive ties’, because, unlike what Yau (2005) and Yayli (201) suggested, they were most preferred by the HPRs rather than the LPRs. Also, it is believed that the expository text is less cohesive than the narrative text due to the deficiency in text cohesion (Best, et al., 2005). However, there seemed to be no features associated with the narrative and expository texts revealed by the LPRs when it came to the strategy types of re-reading and translating the L2 into L1. Further investigation is needed to establish if these are the cases. The same thing applies to the strategies of ‘visualizing text information’ and ‘anticipating text context’ because they were used by the HPRs with the narrative text only.

Furthermore, I have to pick up certain strategy types revealed in my study because they are the main concerns of other reading strategy researchers and these strategy
types were found to be important and effective, if used appropriately. They are the strategy types of ‘deciding what to read closely and what to ignore’ and ‘guessing meaning of the unknown word and phrase from context through inferences’. Aebersold and Field’s (1997) main concern is that one of the most useful, overarching strategies used to deal with unknown words or phrases encountered while reading is to skip any of these that are not essential to the key information in the text. However, this requires the readers to determine whether they are vitally important to the readers’ purpose in reading the text or not; that is to say, if they are reading to get a general idea of a text, then they can probably skip unknown words that are regarded as not key words. This decision also highlights the importance of knowing how to determine whether an unknown word or phrase is not essential to the key information if the purpose of reading is to get a general idea of what being read (ibid). In this case, further research into the contexts in which this strategy is used and its link with reading purpose is required. In all likelihood, Nation (1990) comments that guessing unfamiliar words from context clues is viewed as an essential and vital skill that readers can use to compensate for their difficulty in comprehending texts due to the deficiency in the size and range of their vocabulary. Still, Nation and Clark (1980) indicate that there has been very little useful guidance about how to employ strategies and techniques to guess the meaning of words from the context in the research. Thereby, it is suggested that further research into this area is required.

Another area of interest that requires further investigation is the development of a theory of grammar strategies in learning, as proposed by Oxford and Lee (2007), because in my study these LPRs seemed to repeatedly refer to their lack of grammatical knowledge as a hindrance to reading comprehension. In this case, they urgently suggested that researchers need to develop a theory of grammar strategies as a way to propel the grammar strategy field from its hidden nook into the light.
Also, the strategy type of ‘scanning the information’ was used either before or during the reading to locate or check a specific piece of information in order to answer the comprehension questions. This part of the findings revealed a particular aspect of the connection between learning strategy use and the context in which it takes place in order to fulfill a reading goal. In this case, further investigation into the situations, contexts or different phases of the reading process in which a strategy is used would need to be conducted in order to have a global understanding of EFL learners’ strategic reading processes if metacognition in relation to either reading comprehension or strategic reading is a goal-oriented process, which involves readers actively applying certain strategies and varying the strategies applied by them appropriately and necessarily when the need arises to fulfill a reading goal during their reading, as noted by Koda (2005) and Mohamed et al. (2006).

As noted in the current study, the participants mentioned that they tended to scan the information of the text related to the reading comprehension questions in order that they could save time and locate the particular information in the text quickly to answer the questions during a test-taking situation. This gave rise to the issue of strategy use in test-taking situations, for considerable studies have indicated that, in the areas of L2 and foreign language reading tests, there are certain types of strategies of which test takers are aware and use during a test-taking course (Hirano, 2009 as cited in Abidin & Mohammadi, 2011). Hence, research on this area should be further explored to establish if this was the case.

In addition, when compared to the Puerto Rican undergraduates in the Western contexts of learning, the undergraduates in the Taiwanese context considered culturally distant from the Western one of traditional research tended to ‘guess meaning from context through inferences’. This shed light on the unique connection between learning strategy use and the context in which it takes place because the connection of such has
recently emerged as a main theme of the learning strategy research in terms of different cultures and contexts (Baker & Boonkit, 2004). With the aforesaid in mind, further investigation into the connection of such in relation to learning to read would be needed to establish if learning strategies and comprehension monitoring are the terms most commonly associated with metacognition, as suggested by Afflerbach et al. (2006).

Also, the findings in my study revealed that the interplay of strategy use, culture backgrounds and difference literacy experiences influenced L2 reading, and so further research into this particular aspect of L2 reading strategy use should be established to see whether it was the case or not since this is main concern of Parry (1996).

The current study also revealed several issues related to the difficulties in classifying learners’ metacognitive awareness and use of reading strategies in learning to read (see section 6.2.1). This implies that strategy classification continues to be various and miscellaneous. However, this picture could be filled out with further research into L2 learners’ metacognitive awareness and use of reading strategies in learning to read for a comprehensive taxonomy to be developed, especially related to the EFL context in general and in particular in Taiwan, or in order for L2 learning and reading strategy researchers to be provided with a chance to observe whether they could add or modify the existing taxonomies for better research results to occur.

Equally important, this case study looked into the metacognitive awareness and use of reading strategies in learning to read of this particular group of 12 Taiwanese first year university EFL learners, who were enrolled in a fundamental English reading and writing course during the first year of their 4 year university studies in order for them to be prepared to pass the preliminary test of the intermediate level of GEPT as the graduation requirement, and explored the differences in their strategy uses between those who reached the graduation requirement (HPRs) and those who did not (LPRs), along with consideration given to texts of the narrative and expository types. The
purpose of this was to promote the role of meta-strategic knowledge and use to be incorporated into teaching English reading in the research site and similar contexts due to the rigid syllabus and the teaching approach of GTM resulting from the test-oriented course. However, further research into whether the incorporation of strategic reading, with consideration given to factors of proficiency levels and texts of the narrative and expository types, will enable the learners to improve strategic reading and enhance reading comprehension so as further to pass the preliminary test of the intermediate level of GEPT as the graduation requirement is worth pursuing, which is not the main concern of this study.

Finally, it is also worth investigating whether too frequent use of a re-reading strategy could impede the reading speed and the coherence of what is read, as suggested by Zhang (2001), in order to establish whether this was the case or not even though this was not uncovered in my study. Meanwhile, in the literature, the issue of whether reading in an L2 is a reading problem or a language problem has always been a contentious one, as discussed by Malcolm (2009). Some argue that it is a language problem, whereas others argue that it is a reading problem, meaning that students perform poorly in L2 reading because they do not have good L1 reading strategies (ibid). Although my results seemed to confirm that reading is both a language and reading problem, especially for the LPRs, because their low familiarity with the target language appeared to short-circuit their reading ability, which in turn prevented them from using the reading strategies of which they aware effectively, efficiently and appropriately, even though they possessed strategic awareness, further investigation is required to establish if this was the case because this association is a subject of some debate due to the exact nature of this association (Gu et al., 2007).

**7.7 Final conclusion to the study**

This present exploratory case study, based on the interpretive stance, contributes
to the growing body of research on learners’ metacognitive awareness and use of reading strategies in learning to read in an EFL context, like Taiwan. The research questions posed in the study have been addressed by adopting a naturalistic approach, involving both a quantitative analysis of the frequency counts of reading strategy use and a qualitative analysis of their verbal reports. The available findings from this study provide an unique profile of how these Taiwanese first year university EFL learners’ metacognitive awareness and use of reading strategies in learning to read and the differences in their use of strategies resulted from different proficiency levels and text types. Although the results also provide classroom practitioners, curriculum designers and planners at the research site with insights through which they can understand how strategic the reading process is related to different EFL proficiency levels and text types, reconsideration into this regard needs to be taken, partly because the available data show that most of the differences in strategy use in relation to text type are related to sentence structure level and vocabulary level and few are related to text structures and partly because the association between language proficiency and strategy use is of some debate because of a lack of accurate data relating to the distinctions in the reasons and ways in which they are employed with leaners of different proficiency levels due to the exact nature of this study (frequency results) and the small numbers of participants. However, based on the available data, raising the strategic awareness and strategic use in this regard among the EFL first year university learners at the research site is suggested. This is to make them aware that their own process of learning to read entails the use of reading strategies meta-cognitively with texts of different types (e.g. especially the strategy use in relation to sentence structure level and vocabulary level between text types) while controlling and monitoring their cognitive activities, like the reading process. Meanwhile, the reading teachers at the research site should incorporate the basic decoding skills into reading strategy instructions to enhance their
students’ reading ability and comprehension, especially for the LPRs. Finally, my hope is also that the results of this study can not only help to strengthen reading instruction in EFL learning and reading contexts but also contribute to the broader picture of metacognition in language learning in general and learning to read in particular within the Taiwanese context.
REFERENCES
Ahuvia, A. (2001). Traditional, interpretive, and reception based content analysis: Improving the ability of content analysis to address issues of pragmatic and theoretical concern. Journal Social Indicators Research, 54 (2), 139-172


Crotty, M. (1998). *The foundation of social research: meaning and perspectives in the*


teach*rs. London: Arnold.


Sage.


Tsai, C. C. (2012) The reading strategies used by senior high school students to deal

Tsai, C. F. (1995). A study of the extracurricular English reading habits and attitudes of students at one vocational high school and the National Taiwan Junior College of Physical Education. *Journal of National Taiwan College of Physical Education*, 6, 111-156.


Appendix A: Taxonomies of learning strategies

- Rubin’s 1981 classification: She identified two broad categories: direct learning strategies that contribute directly to the learning processes; and indirect learning strategies that have an indirect effect on learning process.

1. **Direct Learning Strategies**:
   a. Clarification / Verification
   b. Monitoring
   c. Guessing/Indirect Inferencing
   d. Deductive Reasoning
   e. Practicing
   f. Memorising

2. **Indirect Learning Strategies**:
   a. Creating opportunity for practice
   b. Production tricks

- Rubin’s 1987 classification: She further developed and classified three types of strategies used by learners that contribute to language learning directly or indirectly. These include learning strategies, communication strategies, and social strategies.

1. **Learning Strategies**: They are comprised of the main two types, referring to the ones that contribute directly to the development of the language system language learners acquire and construct:
   a. **Cognitive Learning strategies**: They refer to the learning steps or operations learners use for problem-solving activities that involve the direct analysis, transformation, or synthesis of learning materials. There are six main cognitive learning...
strategies learners use directly to contribute for better language learning:

- Clarification/Verification
- Monitoring
- Guessing/Indirect Inferencing
- Deductive Reasoning
- Practicing
- Memorising

b. **Metacognitive Learning Strategies:** They refer to the strategies used by learners to regulate, oversee, and self-direct language learning. These strategies involve various processes to plan, prioritise, or self-manage processing of learning, and to set goals for language learning.

2. **Communication Strategies:** They are thought to be less directly related to language learning because the focus of which is on the process of participating in a conversation and getting meaning communicated or clarified regarding what the speaker intend to convey. These strategies are employed by the speakers when faced with some difficulties in getting their meaning across or when confronted with misunderstanding by a co-speaker.

3. **Social Strategies:** They are those activities in which learner are engaged so that learners are provided with the opportunities to be exposed to and practise their acquired or learnt knowledge. Although the strategies of these types allow learners the chance of the exposure to target language, they indirectly contribute to learning since they do not
directly involve or lead to the obtaining, storing, retrieving, and using of language.

- O’Malley et al.’s 1985 classification: The nature and purpose of metacognitive, cognitive and social affective strategies, according to O’Malley et al., are:
  
  1. Metacognitive strategies: They are executive processes used in planning for learning, thinking about the learning process while taking place, monitoring of one’s production or comprehension, and evaluating learning after the completion of an activity. They also include the additional strategies such as advance organizers, directed attention, selective attention, self-management, functional planning, self-monitoring, delayed production, self-evaluation.
  
  2. Cognitive strategies: They are related to the direct manipulation of the material itself to be learned and are including repetition, resourcing, translation, grouping, note taking, deduction, recombination, imagery, auditory representation, key word, contextualization, elaboration, transfer, inferencing.
  
  3. Social-affective strategies: They are related either with interacting with another one to assist learning, as in cooperative learning or asking questions for clarification, or using affective control to assist in learning tasks.

- Influenced by Rubin (1975), Oxford (1990) took the process of classification a step further. She offered a useful and comprehensive classification scheme of the various strategies employed by language learners. Within the broad context of language learning, they can be referred to as the following.
I. The direct strategies

All direct strategies require mental processing of the language, but the three groups of memory, cognitive, and compensation strategies do this function differently and for different purposes. Memory strategies, for instance, have a highly specific function, which assist learners with the information store they acquire and retrieve it when necessary or needed. Cognitive strategies enable learners to understand and produce new language by many different means. Compensation strategies are believed to enable learners to use language in spite of their deficiency in the knowledge needed.
a. Memory strategies

They are the techniques that help the learner to remember and retrieve information. This set of strategies is based on its classification, on the information processing theory. This theory states that the act of human information processing consists of 4 stages: selective attention of the incoming data, comprehending it, storing it, and retrieving it. Thereby, actions for remembering the language are parts of the learning procedures and require mental processes along with the cognitive ones. They reflect very simple principles, such as arranging things in order, making associations, and retrieving. These principles all involve meanings. These include mental images through grouping and associating, semantic mapping, using keywords, employing word associations, and placing new words into a context. The following table summarises those strategies in which the left column shows strategies and the right examples of those strategies:

<table>
<thead>
<tr>
<th>Direct Strategies</th>
<th>Memory strategies</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1. Creating mental linkage</td>
<td>Grouping/Associating or Elaborating/placing new words into a context</td>
</tr>
<tr>
<td></td>
<td>2. Applying images and sounds</td>
<td>Using imagery, Semantic mapping, Using keywords, Representing sounds in memory</td>
</tr>
<tr>
<td></td>
<td>3. Reviewing well</td>
<td>Structured reviewing</td>
</tr>
<tr>
<td></td>
<td>4. Employing action</td>
<td>Using physical response or sensation/Using mechanical techniques</td>
</tr>
</tbody>
</table>

297
b. **Cognitive strategies**

Simply speaking, these are regarded as mental processes which make a contribution to language learning. They are used by learners to transform or manipulate the language. They are comprised of the following four sets, as tabulated below, with examples given.

<table>
<thead>
<tr>
<th>Cognitive strategies</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Practicing</td>
<td>Repeating/Formally practicing with sounds and writing systems/Recombining/Practicing naturalistically</td>
</tr>
<tr>
<td>2. Receiving and sending messages</td>
<td>Getting the ideas quickly/Using resources for receiving and sending messages</td>
</tr>
<tr>
<td>3. Analysing and reasoning</td>
<td>Reasoning deductively/Analysing expression/Analysing contrastively: Translating or Transferring</td>
</tr>
<tr>
<td>4. Creating structure for input and output</td>
<td>Taking notes/Summarizing or Highlighting</td>
</tr>
</tbody>
</table>

In stressing the importance of those strategies, Oxford (1990) postulates that they are essential in learning a new language. The strategies of such are various, ranging from repeating to analysing expressions to summarising.

c. **Compensation strategies**

The strategy of this type enables learners to use the new language for either comprehension or production despite limitations in knowledge. They are
employed by learners to compensate for an inadequate repertoire of grammar and, especially, of vocabulary. This type of strategy is very similar to the communications strategies suggested by Rubin (1975), since the focus of both of them is on the process of participating in a conversation and getting meanings across or clarifying what the speaker intended. Communication or compensation strategies, thereby, are utilised by speakers when faced with some difficulty due to the fact that their communication ends outrun their communication means, or when confronted with misunderstanding by a co-speaker. The compensation strategies are ten, which clustered into two sets, as tabulated and summarised below, with examples given.

### Direct strategies

<table>
<thead>
<tr>
<th>Compensation strategies</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Guessing intelligently</td>
<td>Using linguistic clues/Using other clues, such as knowledge from context, situation, text structure, personal information, etc.</td>
</tr>
<tr>
<td>2. Overcoming limitations in speaking and writing</td>
<td>Switching to the mother tongue/Getting help/Using mime or gesture/ Avoiding communication partially or totally/ Selecting the topic/ Adjusting or approximately the message</td>
</tr>
</tbody>
</table>

### Indirect strategies

The following section deals with the indirect strategies that underpin the business of language learning. Indirect strategies, according to Oxford (1990), are metacognitive, affective, and social categories. Metacognitive strategies allow learners to regulate, control, and oversee their own cognition; affective strategies
help them to regulate emotions, motivation, and attitudes; and social strategies help students learn through interaction with others.

**a. Metacognitive strategies**

They are referred to as behaviours undertaken by learners to plan, focus, and evaluate their own learning. Those strategies include three strategy sets. They are summarised in the table below, along with examples of each of the specific strategy types provided.

<table>
<thead>
<tr>
<th>Indirect strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Metacognitive strategies</strong></td>
</tr>
<tr>
<td>1. Centring your learning</td>
</tr>
<tr>
<td>2. Arranging and planning your learning</td>
</tr>
<tr>
<td>3. Evaluating your learning</td>
</tr>
</tbody>
</table>

**b. Affective strategies**

Affective factors have proven to play a crucial role in language learning. Learners can gain control over these by using affective strategies. These factors might have a positive or negative effect on the process of learning, and the successful use of those strategies might positively lead to better learning (Oxford, 1990). They are summarised and tabulated below, with examples given.
c. Social strategies

Language is a form of social behaviour. According to her, it is communication, and communication occurs between and among people. Social strategies help develop this idea. These strategies involve other individuals in the learning process and refer to cooperation with peers, questioning, asking for correction, and feedback, for example, while reading, a language learner may ask another individual for feedback about his or her reading processes. The table shown below gives a brief account of those strategies:

<table>
<thead>
<tr>
<th>Indirect strategies</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social strategies</strong></td>
<td><strong>Examples</strong></td>
</tr>
<tr>
<td>1. Asking question</td>
<td>Asking for clarification/ Asking for correction</td>
</tr>
<tr>
<td>2. Cooperating with others</td>
<td>Cooperating with peers/ Cooperating with proficient users of the new language</td>
</tr>
<tr>
<td>3. Empathising with others</td>
<td>Developing cultural understanding/ Becoming aware of others’ thoughts and feelings</td>
</tr>
</tbody>
</table>
Appendix B: An example of the student background questionnaire

<table>
<thead>
<tr>
<th>No.</th>
<th>Question</th>
<th>Answer</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Name</td>
<td>Yang x x (pseudonym name: Tina)</td>
</tr>
<tr>
<td>2</td>
<td>Age</td>
<td>21</td>
</tr>
<tr>
<td>3</td>
<td>Gender</td>
<td>Male</td>
</tr>
<tr>
<td>4</td>
<td>Discipline</td>
<td>Accounting Information</td>
</tr>
<tr>
<td>5</td>
<td>Year of University Studies</td>
<td>Freshman</td>
</tr>
<tr>
<td>6</td>
<td>When Stated to learn English</td>
<td>Primary school</td>
</tr>
</tbody>
</table>

This student background questionnaire was adopted from Karbalaei (2010).
Appendix C: Symbols used in transcribing the think-aloud protocols

1. The italicized and underlined words refer to the English reading passages or English words in the English reading passages the student read out.
2. The italicized and underlined words within the round bracket refer to the meaning of the English reading passages the student translated into L1/Chinese.
3. The (……) refers to the pause the student made.
4. The (::::::) refers to the sound of stretching of words the student made.
5. The oh, eh and mm hm refers to the interjections made by the student or the researcher.
6. The bold letters with hyphens in between within the square brackets refer to the words the student spelt out.
7. The letter ‘I’ refers to the prompts the researcher verbalized in Chinese.
8. The letter ‘S’ refers to the thoughts about the English reading passages the student verbalized in Chinese.
9. Bold letter in the brackets refer to something considered as strategies.
Appendix D: Symbols used in transcribing the immediately retrospective interviews

1. The italicized words refer to the thoughts conveyed by the researcher in Chinese.
2. The normally lettered words refer to the thoughts the student verbalized in Chinese.
3. The (……) refers to the pause the student made.
4. The words underlined and italicized refer to the English words in the English reading passages the student or the researcher read out.
5. The er and mm hm refers to the interjections made by the student or the researcher.
6. The letter ‘I’ refers to the researcher.
7. The letter ‘S’ refers to the student.
8. Bold letter in the brackets refer to something considered as strategies.
Appendix E: An excerpt of the transcript of the pilot study from a male high proficient learner reading the narrative text

**Jay’s Think-Aloud Protocols**

S: *(In 1778, George Washington was commanding)* [Translating L2 into L1] 
**troops**......**troops** [Re-reading] ....eh…

I: You paused. Tell me what you are thinking.

S: I am thinking what meaning of the word **troops** is. [Self-questioning]

I: Tell me what you want to do.

S: Keep reading to see whether I can get its meaning or not. [Suspending a reading problem]

I: Mm hm.

S: *(during America’s Revolutionary War.)* [Translating L2 into L1]

I: Mm hm.

S: *At night, he slept in his personal tent.*

S: *(I think it means that at night, he slept in his personal tent.)* [Translating L2 into L1]

I: Mm hm.

S: *For almost a hundred years, that historical tent has been displayed in a national park.*

S: *(The historical tent has been on display in a national park for almost a hundred years.)* [Translating L2 into L1]

I: Mm hm.

S: *(Unfortunately, for most of that time it was to some degree…by a large hole in its roof.)* [Translating L2 into L1] **ruined**....**ruined** [Re-reading]....

I: You paused. Tell me what you are thinking.

S: I am thinking what the word **ruined** means. [Self-questioning]

S: I think it has the meaning equivalent to that of the word **damage** because of a large hole in the roof. [Word solving behaviour]

S: *No one was sure how the hole had been made and where the missing piece of cloth might be at that time…(no one was sure how the hole had been made at that time and where the missing piece….eh.........)* [Translating L2 into L1]

I: Tell me what you are thinking.

S: I do not know the meaning of the word **cloth** but I think it is a part of the tent.

I: Tell me what you want to do.

S: I decided to keep reading and see what it means. [Suspending a reading problem]

S: *In 2002, the tent was acquired by a non-profit instruction which planned to display it in a new museum machine.*

S: *(In 2002, the tent was acquired displayed by a non-profit institution in a new*
museum.) [Translating L2 into L1]

S: Due to the importance of the tent, the company hired Lo::ree::n Fin::kelstein, an expert in historical object, to carefully clean it…….eh….

I: You paused. Tell me what you are thinking.

S: I am thinking how to translate it into L1. [Translating L2 into L1]

S: While she was working, she also studied the tent very closely….studied…..

I: You paused. Tell me what you are thinking.

S: I am thinking what the word studied means here…….eh… [Self-questioning]

Jay’s immediately retrospective interviews

I: You said to keep reading to get the meaning of the word troops. Can you tell me what it means after reading?

S: I think it refers to soldiers or a group of soldiers because Washington was a leader during America’s Revolutionary War. Also, in the text, commanding means to order someone to do something so that I think it refers to soldiers or a group of soldiers.

I: You said that Washington was a leader during America’s Revolutionary War. Can you explain why?

S: That is because he is an important person in America’s history.

I: So, do you use background knowledge to help you with the comprehension in the unknown part? [Using background knowledge]

S: Yes, I do.

I: Also, do you use the context to help you with the comprehension because you said that in the text, commanding means to order someone to do something?

S: Yes, I do. [Guessing meaning from context through inferences]

I: Can you explain why you got the meaning of the word ruined?

S: That is because in the text it says a large hole in its roof. In this case, I inferred its meaning from the context. [Guessing meaning from context through inferences]

I: Mm hm.

I: You said that you do not know the meaning of the word cloth but you think it is a part of the tent. And you decided to keep reading to get its meaning. Can you tell me what it means after reading?

S: Er….I think the main point is to find the missing piece from the tent so that it is not important as long as my overall comprehension of the text is not hindered, I chose to ignore it. [Deciding what to read closely and what to ignore]

I: Mm hm.

I: Do you translate the English passages into your language for better comprehension?

S: Yes, I do. That is because translation helps me with better comprehension with the text content read. Another reason is that English is not my mother language if I want to understand I have to do it this way.

I: You said that the word studied does not mean to learn about a subject………..
Appendix F: An excerpt of the transcript the pilot study from a male high proficient learner reading the expository text

Jay’s Think-Aloud Protocols
S: *Every year in February, around forty days before Easter parades are held all over Brazil.*
S: *(I think it means that the parades are held in Brazil every year in February around forty days……eh……).* [Translating L2 into L1]
R: You paused. Tell me what you are thinking.
S: I don’t know the meaning of the word *Easter*.
I: Tell me what you want to do.
S: I keep reading and come back to it later. [Suspending a reading problem]
S: *Other groups join in later as the parade moves along.*
S: I think it means that other groups join in the parade immediately after it moves along. [Paraphrasing]
S: *However these parades …(these parades)* [Translating L2 into L1] ……eh…
I: You paused. Tell me what you are thinking.
S: I don’t know the meaning of the phrase *come to a halt*…..
I: Tell me what you want to do.
S: Keep reading to see. [Suspending a reading problem]
S: *(take hours to finish the parade because so many people want to take part.)* [Translating L2 into L1]
I: Mm hm.
S: *(Therefore, the parade)* [Translating L2 into L1]……co::mmi::ttee….I do not understand its meaning. What does it mean? [Self-questioning]…*(for future parades they decided not to announce the starting time)* [Translating L2 into L1]
S: *The number of people was larger than the area could accommodate*
S: I think it means the number of people was so large that the place couldn’t accommodate. [Paraphrasing]

Jay’s Immediately Retrospective Interviews
I: You said that you did not understand its meaning—*Easter*? Have you got its meaning?
I: I notice that you did self-questioning. Do you think it helpful with reading comprehension?
S: Yes, I do. This allows makes me to think what I have read and what I am reading. Also, I can try to activate what I know about the text content being read.
I: I noticed that you rearranged this reading passage *other groups join in later as the*
parade moves along and use different word but with the same sense to comprehend it. Can you tell me why?
S: That is because this sentence is long and complicated to me. In this case, I used my own words to understand it from the context as a whole.
I: Did you have it re-phrased?
S: Yes, I did.
I: You said that you don’t know the meaning of the phrase—come to a halt. Have you got its meaning?
S: …come to a halt….come to a halt [Re-reading]….come to a halt [Re-reading] …I don’t know its meaning.
I: You said that you did not know the meaning of the word committee. Have you got its meaning?
S: …eh….a particular group of people? … [Self-questioning]
I: Can you explain why you think it his way?
S: That is because of the suffix—ee. [Word solving behaviour] In this case, the parade committee might refer to the people organizing the parade, I guess.
I: Can you explain it in a clear way?
S: I mean the suffix—ee—is added to the end of a word to have its meaning changed and its meaning is a person. In this case, I think it refers to people who organize the parade. Also, normally speaking, the starting time is announced by people who organize the parade. [Using background knowledge]
I: Mm hm.
I: Can you try it again to get its meaning---come to a halt?
S: OK……
S: …so many people want to take part and also take hours to finish….I think it has the negative meaning…
I: Why?
S: Because there is a however used to connect two opposite ideas between sentences, I think it has the negative meaning here.
S: come to a halt……
S: Is it about delay? [Self-questioning]
I: Why do you think this way?
S: That is because it says (other groups join in immediately after the parade moves along)…. (so many people to take part one after another and it takes hours to finish so I think it means delay or not moving.)
I: Do you mean there is a however between sentences, which makes you to guess the meaning?
S: Yes, I do. [Using cohesive ties]
I: noticed that you used different words but with the same sense to comprehend this……
Appendix G: An excerpt of the transcript of the pilot study from a male low proficient learner reading the expository text

**Leo’s think-aloud protocols**

S: (every year in February)… [Translating L2 into L1]
I: Tell me what you are thinking.
S: I don’t quite understand what this phase means… around forty days before Easter
I: Tell me what you want to do.
S: I decided to keep reading and come back to it later. [Suspending a reading problem]
S: I do not know the meaning of the word, parades.
I: Tell me what you want to do.
S: Keep reading to see whether I can get its meaning or not. [Suspending a reading problem]
S: are held all over Brazil…
S: In some of them ……(in some of them) [Translating L2 into L1]
S: I don’t understand the meaning of these two words participants and compete. I decided to keep reading to come back to it later. [Suspending a reading problem]
S: For prizes? I do not know what it means.
S: [R-i-o d-e J-a-n-e-r-o]…It’s a city name, isn’t it? [Self-questioning]
S: (the best-known city in Brazil) [Translating L2 into L1]
S: (hold several) [Translating L2 into L1] competitive parades I think the competitive parades refer to a certain kind of activity…
I: Mm hm.
S: In one, dance groups from the top twelve samba schools are in competition with each other.
S: Does it mean that the dance groups from the top twelve samba schools are in competition with each other…? [Self-questioning]
S: (They expected this would) this… I am thinking of what the word this refers to [Self-questioning] and I think it refers to the decision they made not to announce the starting time.

**Leo’s Immediately Retrospective Interviews**

I: You said that you did not know the phrase around forty days before Easter and decided to keep reading and come back to it later? Can you tell me what it means?
S: I think Easter refers to a holiday so that it means around forty days before a holiday.
I: Why do you know it is a holiday?
S: I recalled it.
I: Do you know what holiday exactly it is?
S: I think it refers to the Easter holiday.
I: Why do you know it refers to the Easter holiday?
S: I associated it with the Easter eggs because it is the activity people normally do on that day. [Using background knowledge]

I: You said that you did not know the meaning of the word parade and decided to keep reading and come back to it. Can you tell me what it means now?
S: I still cannot get its exact meaning but I roughly know that it might refer to a kind of activity.
I: Can you tell me why?
S: That is because it is held all over Brazil so that I think it might be an activity. Also, to my knowledge, in Brazil there is a carnival held every year. [Using background knowledge]

I: So, you know it refers to a kind of activity but you don’t know what exactly it means, do you?
S: No, I don’t.
I: You paused and thought of what them refers to in the phrase—in some of them? Can you tell me what them refers to?
S: I think it refers to the activity, the parade, because them is a pronoun and used to refer to the previously mentioned plural noun. In this case, I think it refers to parades even though I do not know its exact meaning. [Using cohesive ties]

I: You said that you decided to keep reading and come back to these two unknown word participants and compete. Have you got their meaning?
S: I do not know both of them.
I: How about the word prizes?
S: I think it refers to something given to someone who is successful in a competition.
I: So, you know a prize refers to something given to someone who is successful in a competition. But you still do not know what the word, compete, means, do you?
S: No, I don’t.
I: You said that Rio de Janiero refers to a city. Can you tell me why?
S: I do not know exactly what its name is but I know it refers to a city because the phrase that follows is used to give the additional information to it…er… I mean the appositive. [Activating prior knowledge]

I: It seems that you are uncertain of the meaning of the phrase—in competition with each other. Tell me what you are thinking.
S: I think it refers to the competition in which they join because they design a performance using hundred dancers in order to compete. In this case, I think it means the competition in which they join.
I: So, did you use the context clues to help you with this?
S: Yes, I did. [Guessing meaning from context through inferences]
I: You said this referring to the decision they made not to announce the starting time...
Appendix H: An excerpt of the transcript of the Pilot Study from a male low proficient learner reading the narrative text

Leo’s think-aloud protocols
S: *Global Washington*... a proper noun *was commanding*...er does it mean commanding [Self-questioning] *troops* [Re-reading] eh........
I: Tell me what you are thinking.
S: I do not know its meaning.
I: Tell me what you want to do.
S: Keep reading to see whether I can get its meaning or not. [Suspending a reading]
I: Mm hm.
S: *(during America’s Revolutionary War)* [Translating L2 into L1]
I: Mm hm.
S: *(at night, he slept in his personal tent)* [Translating L2 into L1] *er... he slept in his personal tent...so Global Washington was a person’s name*....[Guessing meaning from context through inferences]
I: Mm hm.
S: For almost a hundred years, that historical tent has been displayed in a national park.
S: After a hundred years, the historical tent was displayed in a national park.
I: Mm hm.
S: Unfortunately...for most of that time it was.....(unfortunately to some degree it was ruined) [Translating L2 into L1] in its roof....roof...[Re-reading] er....does it mean roof? [Self-questioning] Anyway, it got some damage.
I: Mm hm.
S: No one was sure how the hole had been made and where the missing piece of cloth might be at that time.....(no one was sure) [Translating L2 into L1]...er...it seems to me that there was something missing....eh..........[Using filler words]
I: Tell me what you are thinking.
S: I do not know the meaning of the word *[c-l-o-t-h]* but I think it is a part of the tent.
Anyway, I decided to keep reading and see what it means. [Suspending a reading problem]
S: Due to the importance of the tent, the company *er... hired Lo::ree::n Fin::kelstein, an expert in historical object, to carefully clean it.* I am thinking how to translate it into L1. [Translating L2 into L1]

Leo’s Immediately Retrospective Interviews
I: I found that you misread George Washington as Global Washington. Can you tell me why?
S: I made a mistake carelessly.
I: Why you said it is a proper noun?
S: That is because it is written with first letter capitalized. In this case, I think it might be a place or a person name. [Word solving behaviour]
I: You asked yourself whether the meaning of the word commanding means to order someone to do something. Can you tell me what it means after reading?
S: I think it means to order someone to do something from the context because he was in the war.
   I: Do you use the context to help you with the comprehension?
S: Yes, I do. [Guessing meaning from context through inferences]
I: Do you question the meaning of the reading passages while reading?
S: Yes, I sometimes do. I mean if I am not sure of its meaning.
I: Do you find it helpful?
S: Yes, I think so. That is because this can help me to think the unknown part of the text over again or find the clues from context to comprehend it at least.
I: You said that you would like to keep reading to see whether you can get the meaning of the word troops. Can you tell me what it means?
S: I still do not know what it means and this word does not appear in the text that follows so that I think it is not important. I just ignore it. [Deciding what to read closely and what to ignore]
I: So, you mean it is not important, isn’t it?
S: Yes, it is.
I: Why do you know it is not important?
S: Just feel.
I: Mm hm.
I: Why did you say that George Washington is a person’s name?
S: That is because he slept in this personal tent. In this case, it is a person name.
I: Did you get its meaning because of his sleeping in his personal tent?
S: Yes, I did. [Guessing meaning from context through inferences]
I: You asked yourself the meaning of the word roof but immediately after this you said that it got some damage, anyway. Can you tell me why?
S: Er….I was thinking whether to get its exact meaning or not at that moment.
I: Can you tell me what it means now?
S: I am still not sure of its meaning. I just know that the tent was damaged at that time.
I: Can you tell me why you said it got some damage anyway?
S: That is what I can understand about this reading passage.
I: You said that you would like to keep reading to get the meaning of the word cloth?
I: Can you tell me what it means?
S: No, I can’t. I just know it is a part of the missing piece from the tent.
I: You said that you were thinking how to translate this reading passage into L1 ........
Manners are the ways in which people behave in various situations with other people. If they behave properly, we say that they have good manners, and if they behave badly, we say that they have bad manners. However, what are good manners in one society may be bad manners in another. For example, in one society, it may be good manners for an old man to open a door for a young woman because men should be polite to women in this way; on the other hand, in another society it may be better manners for a young woman to open a door for an old man because young people should be polite to old people in this way. So when you travel to another country, you should learn what are considered good manners there. If you use good manners, you will be a welcome visitor.

31. The word “behave” in line 1 is closest in meaning to
   A. think
   B. read
   C. have
   D. act

32. According to this passage, which of the following statement is true?
   A. Good manners are more important in some societies than in others.
   B. Ideas about good and bad manners vary from one society to another.
   C. Good manners in one society are sure to be bad manners in another.
   D. In one society, good manners may also be bad manners.

33. What does the writer imply in this passage?
   A. When you visit another country, you may need to behave differently from the way you behave in your own country.
   B. People in some societies do not correctly understand what are good and bad manners.
   C. No matter where you go, you will find that it is good manners for young people
to treat old people politely.

D. Our ideas about manners are basically the same as those of people in other societies.

Appendix J: The directions for think-aloud method

Dear all,

Now we are going to do a reading comprehension task. You will be given two types of reading materials. One is called the narrative type. The other is called the expository type. The exercise is quite similar to the reading task you have taken before or you have experienced before, but there is a further step for you to take. For this research, you have to speak out everything you think of during the reading process so that the researcher (I) can investigate how you accomplish the reading tasks. For example, you might read aloud the literacy items and when you skip some of the words or phrase, you have to tell me where you are stopping. When you stop to think of the reading comprehension questions, you have to tell what is in your mind then. Moreover, whenever you finish reading a paragraph, you can stop and tell me what you are thinking of. However, before the task starts, in order to get you familiar with the procedures, the researcher can demonstrate it for you and give you a passage for practice. This is to train you with the skills needed for thinking aloud. During the demonstration and practice, you still can ask questions and after the practice, you will be recorded formally. Above all, please try your very best to tell me whatever comes to your mind, especially for what you do when you have the difficulties in reading comprehension and how you deal with the difficulties you encounter in reading comprehension during the reading processes for the better reading comprehension. Please note the following:

1. Your think-aloud protocols will be tape-recorded and strictly kept confidential.
2. All of the participants involved in this think-aloud will be kept anonymous via coded numbers.
3. Normally speaking, the think-aloud will keep 30-40 minutes long. However, it might be longer if necessary.
4. You are allowed to stop at any time during the think-aloud or you can erase any part of the tape you like.
5. You are allowed to withdraw from the think-aloud at any time.

6. All of the data gathered are used for academic purposes only.

Thanks for your help and cooperation.

Ping-Yu, Liu
PhD student
Graduate School of Education Exeter University, UK
Appendix K: The narrative text used for collecting the think-aloud protocols and the immediately retrospective interviews

The Narrative Text

Questions 34-37

In 1778, George Washington was commanding troops during America’s Revolutionary War. At night, he slept in his personal tent. For almost a hundred years, that historic tent has been on display in a national park. Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof. No one was sure how the hole had been made and where the missing piece of cloth might be at that time.

In 2002, the tent was acquired by a non-profit institution which planned to display it in a new museum. Due to the importance of the tent, the company hired Loreen Finkelstein, an expert in historical objects, to carefully clean it. While she was working, she also studied the tent very closely. One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent. This led to an invitation for Loreen to inspect some sections of cloth in that museum’s collection. Among them was a piece that looked promising. To confirm her suspicion, she traced its outline and later compared it with the hole in the tent. They matched perfectly. Since then, the tent and missing piece have been reunited, and Loreen Finkelstein has been credited with solving an old mystery.

34. Which is the best title for this article?
   A. Demonstration Planned for Washington’s Tent
   B. Debate Focuses on Washington’s Ten
   C. Washington’s Tent to be Withdrawn from Exhibit
   D. Part of Washington’s Tent Finally Discovered

35. When did Washington use the tent?
   A. While he was away on camping trips
   B. While he was a key military leader
   C. While his house was under repair
   D. While he shopped for a better one

36. What does the writer reveal about Washington’s Tent?
   A. It belongs to his relatives.
   B. It will stay in its old location.
   C. It was significantly damaged.
   D. It didn’t satisfy Washington’s needs.

37. What was Loreen Finkelstein asked to do with the tent?
   A. To test its strength
   B. To set it up
C. To mend the hole
D. To remove dirt from it
Appendix L: The expository text used for collecting the think-aloud protocols and the immediately retrospective interviews

The Expository Text

Questions 38-40

Every year in February, around forty days before Easter, parades are held all over Brazil. In some of them, participants compete for prizes. Rio de Janeiro, the best-known city in Brazil, holds several competitive parades. In one, dance groups from the top twelve samba schools are in competition with each other. Each of the schools designs a performance using several hundred dancers. The whole parade lasts for around 80 minutes and is held in a specially-built area with seats for 88,500 people. The competition is very tough as the weakest school will not be able to compete in the following year.

Brazil’s other pre-Easter parades are non-competitive ones, held in local neighborhood areas, and anyone can participate. A group of musicians move through the streets with people dancing behind them. Other groups join in later as the parade moves along. However, these parades often come to a halt and also take hours to finish because so many people want to take part. Around 50,000 people attended the parade in one area last year. The number of people was larger than the area could accommodate. Therefore, the parade committee decided that for future parades they would not announce the starting time. They expected this would reduce the number of people in the parade to ten or fifteen thousand.

38. What aspect of Brazil’s parades can readers learn about from this article?
   A. How parades are organized
   B. How the dancers are chosen
   C. How the custom reflects Easter
   D. How parades affect public opinion

39. Which of the following is true about the competitive parade?
   A. One losing school won’t enter the next contest.
   B. The audience can dance behind the parade.
   C. Two cities host them together.
   D. It lasts for more than two hours.

40. What problem for local parades is described in the article?
   A. They are too expensive to hold.
B. The music and dance are old-fashioned.
C. The neighborhood areas get crowded.
D. People are getting less interested in them.

(Resources Taken from Intermediate Level Test of GEPT Published by The Language Training & Testing Center, Taiwan (2011).)
Appendix M: The directions for immediately retrospective interviews

Dear all,

The interview is carried out immediately after the think-aloud and the purpose of this interview is to capture the information on strategies that think-aloud could not reveal, especially to elicit the specific strategies not voiced by you and on pauses in the think aloud session or on fragments of the think aloud session that sounded incomprehensible, very incomplete or very odd. All that you have to do is to take an extra step to elaborate on those points and make explanations for them as possible as you can while listening to your think-aloud protocols put on the tape. Please note the following:

1. Your interview protocols will be strictly kept confidential.
2. All of the participants involved in this interview will be kept anonymous via pseudonyms.
3. Normally speaking, the interview will keep 30-40 minutes long. However, it might be longer if necessary.
4. You are allowed to stop at any time during the interview or you can erase any part of the tape you like.
5. You are allowed to withdraw from the interview at any time.

Thank you for your help and cooperation.

Ping-Yu, Liu

PhD student

Graduate School of Education Exeter University UK
**Appendix N: An Inventory of the metacognitive awareness and use of reading strategies in learning to read identified from participants’ verbal reports in the think-aloud (TA) and immediately retrospective interview (IRI) sessions across the two text types**

<table>
<thead>
<tr>
<th>Strategies</th>
<th>Definitions</th>
<th>Examples</th>
</tr>
</thead>
</table>
| 1. Paraphrasing                   | The reader re-phrases or re-stats the context, using different word but with the same sense. | *The Expository Text (sentence 13): The number of people was larger than the area could accommodate.*  
“I think it means the place could not take people in because the number of them was too large.”  
(Kay, TA) |
| 2. Using filler words             | The reader uses a filler word such as *something* rather than *synonyms* or *different words with the same meaning* to replace a word, phrase, or clause that she or he does not know while reading. | *The Narrative Text (sentence 12): To confirm her suspicion, she traced its outline and later compared it with the hole in the tent.*  
“No, I haven’t. But I think she did something because she tried to find the missing piece of the tent even though I still do not know what the phrase means.”  
(Ru-Rong, IRI) |
| 3. Going back and forth in the text | The reader reads the information in the text back and forth to better understand it via linking the present information to the other parts of the text so as to find a particular part of the text related to the reading comprehension question he or she is doing. | *The Narrative Text (sentence 4-5): Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof. No one was sure how the hole had been made and where the missing piece of cloth might be at that time.*  
“I am reading the text back and forth and trying to think whether there is a connection between the missing piece from Washington’s tent and the hole in the roof of the tent so as to get the answer to question 36.”  
(Bia, IRI) |
<table>
<thead>
<tr>
<th>Metacognitive reading strategies</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Self-correcting</td>
<td>The reader monitors what he or she is reading and does the self-correction if he or she makes the incorrect interpretation while reading to understand the text better.</td>
<td>The Expository Text (sentence3): Rio de Janierio, the best known city in Brazil, holds several competitive parades. “I think Rio de Janiero is a person’s name...er...no...it is a city’s name and it is the best known city in Brazil.” (Grace, TA)</td>
</tr>
<tr>
<td>2. Comprehension monitoring</td>
<td>The reader monitors his or her comprehension while reading to assess the accurate information of the text such as a word, a phrase, or a sentence.</td>
<td>The Narrative text (sentence 9): One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington’s tent. “I am thinking whether my understanding of the phrase ‘head of another museum’ is coherent or reasonable in this sentence. That is because I use my Chinese understanding equivalent to that of the phrase to have it interpreted in the sentence written.” (Grace, TA)</td>
</tr>
<tr>
<td>3. Scanning</td>
<td>The reader scans the text quickly to find the particular information of the text after he or she self-initiates to read the reading comprehension questions.</td>
<td>“That is because the reading comprehension question is about the problem caused by the local parades and I can get the particular information related to this question if I directly go to the part of the text with the word ‘local’ written in it and read it.”(Li, IRI)</td>
</tr>
<tr>
<td>4. Self-questioning</td>
<td>The reader asks himself or herself questions while reading to check whether he or she</td>
<td>The Narrative Text (Sentence 1): In 1778, George Washington was commanding troops during America’s Revolutionary War. “Does this sentence mean that</td>
</tr>
<tr>
<td>5. Picking out key words</td>
<td>The reader assesses the degree of his or her understanding of the text being read and pay attention to the importance of the content-specific words if he or she expects to better understand the text being read.</td>
<td>“Because this word ‘tent’ is repeatedly-used in the text and the important ideas expressed in the text are related to the word ‘tent’, I think I have to understand what it means first if I want to understand the text is mainly about.” (Yang, IRI, the narrative text)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>6. Skimming for main ideas</td>
<td>The reader self-initiate to read the reading comprehension questions first in order to read the text quickly so as further to get the main ideas of the text being read.</td>
<td>“This enabled me to get what the text is mainly about first because the questions given usually reveal the most important part of the reading and I can try to focus on those portions of the text content to get the gist of the text content. This was to skim for the main idea of the text that I was to read.” (Li, IRI, the narrative text)</td>
</tr>
<tr>
<td>7. Paying attention to topic sentences</td>
<td>The reader plans his or her reading process and self-initiates to look for the topic sentence first because he or she expects or plans to get the gist of the text being read.</td>
<td>“My English teacher taught me to look for the topic sentence in the first paragraph if I want to get the gist of the whole reading. Originally, I thought the topic sentence was the first sentence of the first paragraph; however, after I finished reading the first paragraph, I think that the topic sentence is the last sentence of the first paragraph rather than the first sentence of the paragraph.”</td>
</tr>
<tr>
<td>Cognitive reading strategies</td>
<td>The reader assesses the degree of his or her understanding of the text being read and decide what to read closely and what to ignore; that is to say, they focus the attention to skip unknown words or phrases considered not important or essential to the general or overall reading comprehension. <strong>8. Deciding what to read closely and what to ignore</strong></td>
<td>That is because the text is mainly about the missing piece from Washington’s tent and part of Washington’s tent finally discovered.” (Yeh, IRI in relation to the narrative text)</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1. Re-reading</td>
<td>The reader re-reads a portion of the text such as a word, a phrase, a sentence either aloud or silently so as to better understand what he or she reading. <strong>The Expository Text (sentence 13):</strong> The number of people was larger than the area could accommodate. “Er…accommodate…accommodate…accommodate… I am re-reading to think what this word ‘accommodate’ means.” (Yeh, TA)</td>
<td><strong>The narrative text (sentence 1):</strong> In 1778, George Washington was commanding troops during America’s Revolutionary War. “I forgot what the word ‘troops’ mean.” (Tian, TA) “I do not think the word is so important that I have to get its exact meaning because the main idea of the text is about the part of the missing tent finally discovered; therefore, as long as the breakdown in the comprehension does not hinder my understanding of the text as a whole I chose to ignore it.” (Tina, IRI)</td>
</tr>
</tbody>
</table>
| 2. Guessing meaning from context through inferences | The reader uses the context clues; that is to say, he or she use the words or sentence surrounding the unknown words or phrases to infer the meaning of the unknown words or phrases. **The narrative text (sentences 14):** Since then, the tent and missing piece have been reunited and Loreen Finkelstein has been credited with solving an old mystery. “When I read the sentence for the
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **3. Suspending a reading problem** | The reader skips an unknown word, a phrase, or a sentence in spite of the lack of full understanding of it and expects to figure out the meanings in the context later. | **The narrative text (sentence 1):**  
In 1778, George Washington was commanding troops during America's Revolutionary War. “I forgot what the word ‘troops’ mean. I decided to keep reading.” (Tina, TA) |
| **4. Translating L2 into L1** | The reader expresses a meaning of the English word, phrase, clause, or sentence in Chinese to aid his or her comprehension in the text she or he is reading. | **The Expository Text (sentence 7):**  
The whole parade last for around 80 minutes and is held in a specially-built area with seats for 88500 people. “整個遊行大約持續八十分钟，並且被舉行在一個有八萬八千五百人可坐的特別建造的區域。” (Li, TA) |
| **5. Using background knowledge** | The reader uses his or her knowledge of the world not contained in the text in attempt to clarify the meaning of the vocabulary or to relate the information in the text to personal experience so as to | **The Narrative Text (sentence 3):**  
For almost a hundred years, that historical tent has been on display in a national park. “That was because a national park is a place where people can go and look at something shown. In this case, I think the phrase ‘on display’ in the text means something shown to be seen by people.” (Kay, IRI) |
<table>
<thead>
<tr>
<th>6. Summarizing parts of text</th>
<th>The reader summarizes the main ideas of parts of the text</th>
<th>The Expository Text (Sentences 13, 14, 15): The number of people was larger than the area could accommodate. Therefore, the parade committee decided that for future parades they would not announce the starting time. They expected this would reduce the number of people in the parade to ten or fifteen thousand. “I think that these last three sentences mainly mean that the committee decided not to announce the starting time of the future parades and expect to reduce the number of people in the parade.” (Yeh, TA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Anticipating text contents</td>
<td>The reader anticipates text contents to be read based on the previously-stated content.</td>
<td>The Narrative text (sentence 9 and 10): One day, when she was visiting the head of another museum, she mentioned the piece that was missing from Washington's tent. This led to an invitation for Loreen to inspect some sections of cloth in that museum's collection. “I think she is to find the missing piece from Washington's tent because she mentions it to the head of another museum and is invited to inspect some sections of cloth in that museum's collection.” (Grace, TA)</td>
</tr>
<tr>
<td>8. Using cohesive ties</td>
<td>The reader uses the linguistic properties</td>
<td>The Narrative Text (sentences 9): One day, when she was visiting the head of another museum, she</td>
</tr>
</tbody>
</table>
contributing to coherence in the text read such as the reference items, the conjuncture items, and the lexical cohesion to help with the comprehension in the text he or she is reading.

mentioned the piece that was missing from Washington’s tent. 

lexical cohesion

“I am thinking what the phrase ‘the head of another museum’ means here….er….and I think ‘the head’ refers to a person….er….how to explain….er…I mean when you mention (verb) something, there must be a person (noun) for you to talk to so that I think ‘the head’ refers to a person in the text.” (Yeh, TA)

The Expository Text (sentences 1-2):

Every year in February, around forty days before Easter, parades are held all over Brazil. In some of them, participants compete for prizes.

reference

I am thinking what ‘them’ refers to here and I think it must refer to ‘the parades’ in the previous sentence. (Grace, TA)

The Expository Text (sentences 15 and 16): However, these parades often come to a halt and also take hours to finish because so many people want to take part.

conjunction

“I still cannot get its meaning but I think this phrase must have a negative meaning parallel to ‘delay’ because there is a conjuncture ‘because’ used for showing the reason why these parades also take hours to finish.” (Yeh, IRI)
<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Visualizing text information</td>
<td>The reader tries to form the picture of the plot or setting of the reading text he or she is reading in the mind.</td>
<td><strong>The Narrative Text (sentences 1-2):</strong> In 1778, George Washington was commanding troops during America's Revolutionary War. At night, he slept in his personal tent. “I am imagining the plot and setting of the text I am reading because it seems to me that it is a story.” (Yeh, TA)</td>
</tr>
<tr>
<td>10. Activating prior knowledge</td>
<td>The reader uses the grammar knowledge, such as syntactic knowledge, grammatical structure, and parts of speech to increase his or her understanding of a portion of the text being read.</td>
<td><strong>The Narrative Text (sentence 4):</strong> Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof. “Mm...I think this sentence means that it is broken with a hole in its roof because of the passive voice (the auxiliary followed by the participle) in the sentence even though I don’t know understand the exact meaning of the word ‘ruined’.” (Dolly, TA)</td>
</tr>
<tr>
<td>11. Contextualization</td>
<td>The reader connects the new information with the previously-stated text contents to better understand what he or she has been reading as a whole.</td>
<td><strong>The Narrative text (sentences1-3):</strong> In 1778, George Washington was commanding troops during America’s Revolutionary War. At night, he slept in his personal tent. For almost a hundred years, that historical tent has been on display in a national park. “I am thinking how to connect the ideas between these sentences... Mm...So I think George Washington’s personal tent has been on display in a national park for almost a hundred years as it was used by him during America’s Revolutionary War.” (Dolly, TA)</td>
</tr>
</tbody>
</table>
| 12. Word-solving behaviour | The reader assesses his or her understanding of the text being read and uses vocabulary knowledge of synonym, morphology, word collocation, and orthography to help with the comprehension of the text he or she is reading. | The narrative text (sentence 4): Unfortunately, for most of that time it was somewhat ruined by a large hole in its roof.  
using synonym  
“I think the meaning of the word ‘being ruined’ is equivalent to that of the word ‘being damaged’ given in choice C so that I think the answer is C in this case.” (Li, IRI)  
The Narrative Text (sentence 10): This led to an invitation for Loreen to inspect some sections of cloth in that museum’s collection.  
using morphology  
“I think the word ‘inspect’ can be broken into two parts. The ‘in’ refers to toward inside and the ‘spect’ refers to seeing or looking. So I think it means looking at something carefully in order to check it.” (Tina, TA)  
The Expository Text (sentence 10): However, these parades often come to a halt and also take hours to finish because so many people want to take part.  
using word collocation  
“I think it means these parades often stop suddenly and also take hours to finish because so many people want to... take part... so familiar... I think it is a phrase instead of isolated words. I learnt about this phrase and I think it means to be involved in these parades here. I mean they have to co-occur and they are the fixed...” |
```
combinations and have their own meaning.” (Yeh, TA & IRI)
The Expository Text (sentence 1): Every year in February, around forty days before Easter, parades are held all over Brazil.
using orthography
This word *Easter* is written with the first letter capitalized and in the text it says around forty days....In this case, I think it is a holiday instead of a name or a place. (Dolly, TA)
```
Appendix O: An excerpt of the transcript of the think aloud protocols and immediately retrospective interviews of a female high proficiency learner reading the narrative text

**Tina’s think-aloud protocols**
S: …an expert in pre-historical …er….historical objects in order to carefully clean it.
S: *While she was working, she also studied the tent very closely*...(while she was working, she looked at the tent closely—carefully).
I: Mm hm.
S: *One day, when she was visiting….. the head…er...*
I: Tell me what you are thinking.
S: I am thinking of what the phrase of *the head of another museum* means and trying to translate it into L1.
S: I think it refers to a person in the museum.
I: Mm hm.
S: *This led to an invitation for Loreen to… this led to this person I mean the expert in historical object to… inspect…eh…*
I: Tell me what you are thinking.
S: I don’t quite remember the meaning of the word inspect.
I: Tell me what you want to do if you have forgotten.
S: I chose to leave it first and read the following portions of the text content…….
I: You paused. Tell me what you are thinking.
S: I am thinking whether the missing piece is in the museum’s collection or not.
I: Mm hm.
S: *Among them was a piece that........(among them...a piece looked) promising....*

**Tina’s immediately retrospective interviews**
I: I noticed that you had a hesitation when were you trying to translate the word historical. Can you tell me why?
S: I know its meaning but I tried to find the Chinese meaning best equivalent to that of English to see whether it is coherent in this context or not and this led to the hesitation. And I think it means the time or history in the past.
I: Can you tell me why you noticed the incoherence of the Chinese translation?
S: That is because I am used to doing the translation while reading if I have the breakdown of the comprehension… I mean…sometimes I am not familiar with the words or sometimes the grammar is not easy for me to translate the passages into L1.
I: Can you tell me whether it is coherent or not in this context?
S: Er...I think it is coherent because the tent was the object left during America’s Revolutionary War. In this case, it is connected to the past or history.
I: Can you tell me what the meaning of the word historical is if you want to translate it
into Chinese?
S: Historical…I think.
I: So you chose this meaning, didn’t you?
S: Mm hm.
I: So you do translation while reading, don’t you?
S: Yes, I do.
I: Why do you think the translation is not coherent in the context?
S: Because when I am reading the passages, the understanding is done in Chinese, this can help me ensure whether my understanding of the passages is correct or not. However, if I still cannot get its meaning, I keep reading the following sentences to help me with the understanding.
I: You said that you were thinking how to translate the phrase of the head of another museum. Can you tell me what it means?
S: Eh…I still cannot know what it means exactly but I think it must refer to a person visited by Loreen Finkelstein because when you mentioned something there must be a person for you to talk but I chose to ignore it because the main point is to find the missing piece.
I: You said that it was a name but you did not know how to make the sound of the word. Can you explain it why?
S: I know it is a person’s name because it is written with the first letter of each word capitalized.
I: You said you would keep reading when faced with the unknown—inspect? Can you tell me what the meaning of the word is and what you did to get its meaning?
S: I used my vocabulary knowledge to tackle this vocabulary problem. That is because I know that this word can be separated into two parts. In other words, in has the meaning of ‘toward the inside’ and spect has the meaning of ‘looking or seeing’. In this case, I think it means to look at something carefully in order to check it.
I: Do you think it helpful or not?
S: I think it is helpful with this word…
I: Can you explain it in a clear way?
S: I mean not every word can be separated like this so that I think large vocabulary size is still needed………
I: Why did you know that the missing piece was in that museum’s collections?
S: Because she inspected some sections of the cloth in that museum’s collection, I think the piece that was missing from Washington’s tent is there.
I: So, did you anticipate the text content to read?
S: Yes. I did.
I: I noticed that you question the meaning of the word promising and said that the meaning of the word promising was equivalent to that of the word ‘similar’………..
Appendix P: An excerpt of the transcript of the think aloud protocols and immediately retrospective interviews of a female high proficiency learner reading the expository text

**Tina’s think-aloud protocols**
S: *Every year in February, around forty days before Easter…*
I: Tell me what you are thinking.
S: *(Easter holiday…, forty days before Easter holiday)*
S: *Parades are held all over Brazil (I think it means that there are parades held all over Brazil).*
S: *In some of them, participants……eh…*
I: Tell me what you are thinking.
S: I am thinking what *them* refers to here… and I am not sure of whether it refers to the participants or the parades…
S: *Compete for prizes I think it might be a competition something like this…er…(participants compete for prizes).*
S: *Rio de [J-a-]janiero (Rio de Janiero the best known city in Brazil, holds several competitive parades)*
I: Mm hm.
S: *However, these parades often come to a halt …eh…these parades*
I: You paused. Tell me what you are thinking.
S: I am thinking what the meaning of *come to a halt* is… I think it is a phrase instead of the isolated words…mm…and it means a sudden stop.
I: Mm…
S: *And also take hours to finish because so many people want to take part (take hours to finish because so many people want to take part)*
S: *Around 50000 attended the parade in one area last year (around 50000 attended the parade in one area last year)*
S: Mm….*accommodate… I do not know what this word means.*
I: Tell me what you want to do.
S: I will re-read it……..

**Tina’s immediately retrospective interviews**
I: *You said that you were not sure of what *them* refers to in the phrase, in some of them? Can you tell me what it refers to after reading?*
S: Mm…Originally, I was thinking whether it refers to either the participants or the parades. However, from the rest of the sentence, I think *them* refers to the parades because *participants* compete for prizes in some of the parades. I think it makes sense.
I: So, did you assess your comprehension from context?
S: Yes, I did. Sometimes, I use the context to assess my comprehension.
I: You said that *come to a halt* is a phrase instead of the isolated words. Can you explain this clearly?
S: That is because I learnt about this phrase and this sequence of words means a sudden stop.

I: *Can you explain what you mean by ‘this sequence of words’*?
S: I remember my English teacher told us that there were some English words that are fixed and combined. I mean they have to co-occur and they are the fixed combinations and have their own meanings.

I: *Do you think this knowledge is important in L2 reading?*
S: Yes, I do. It is helpful for me to aid L2 reading in terms of lexical resources since the combination of English words is habitual and arbitrary.

I: *I noticed that you re-read the whole sentence to get the meaning of the word *accommodate*. Can you explain why and how you re-read the whole sentence?
S: This sentence uses the comparative degree so that I re-read it to clarify whether my understanding of the word is correct or not. In this case, I think it means to take people in.

I: *Can you explain it clearly?*
S: I re-read it because I think I can understand what this sentence basically means. After re-reading it, I thought the focus was on the larger number of people. Also, the passages that come next says to reduce the number of people in the parade so that I think this word *accommodate* has the meaning of taking people in from the context. In this case, the purpose of re-reading is to clarify whether my understanding of what being read is correct or not.

I: *You do re-reading only when you think you can understand what they basically mean, don’t you?*
S: Yes, I do. That is because if you always re-read the sentence, it might take you a lot of time reading. So, my re-reading the difficult portions of the text content is to clarify what they basically mean because I know that I am able to.

I: *Mm hm.*

I: *I noticed that you questioned the meaning of the phrase *parade committee* and you said that you would come back to figure it out later. Can you tell me what it means exactly?*
S: I think it refers to people who organize the parade because only can a decision made by people. In this case, the decision made was not to announce the starting time. Also, normally speaking, the announcement of the starting time is made by people who organize the activity.

I: *Mm hm.*

I: *I noticed that you re-read the whole sentence to get the meaning of the word *accommodate*. Can you explain why and how you re-read the whole sentence........?*
Appendix Q: An excerpt of the transcript of the think aloud protocols and immediately retrospective interviews of a female low proficiency learner reading the Narrative text

**Dolly’s think-aloud protocols**

S: *In 1778, George Washington was* I do not know its meaning *commanding troops*…

I: Tell me what you want to do?

S: Skip it first and come back to figure it out later.

S: *during America’s Revolutionary war (I think it means in 1778 George Washington was during America’s war) Revolutionary*… I don’t know its meaning.

S: *At night, he slept in his personal tent. (At night, he slept in his personal tent)* is it correct?

S: *For almost a hundred years that historical tent has been on display in a national park…* I think for almost a hundred year, Washington’s personal tent has been on display in a national park.

I: Mm hm.

S: I do not know this word—*[U-n-f-o-r-n-a-t-e-l-y]*.

I: Tell me what you want to do.

S: Skip it and try to read the sentence that follows to see whether I can get its meaning or not.

S: *For most of the time, (for most of that time it) ruined ruined* I do not know its meaning but I know something happened *to* the tent because of the passive voice here.

I: Mm hm.

S: *by a large hole in its roof .....roof.....* I don’t know the meaning of the word *roof......[h-o-l-e]* does it have the meaning equivalent to that of the word *horn*?

S: *No one was sure how the h-o-l-e*…..

I: Tell me what you are thinking.

S: I came across this word in the previous sentence---(a large) *[h-o-l-e]* so that I think something happened to the tent. But I still can not get its meaning.

S: *had been made (to make it) and where the missing [p-i-e-c-e] I forgot its meaning….of cloth (clothes) [m-i-g-h-t] I do not know its meaning…. at that time…..(at that time the clothes were lost.)*

S: *(In 2002, the tent) was [a-c-q-u-i-r-e-d] I do not know its meaning.

I: Tell me what you want to do.

S: Skip it and come back to figure it out later.

S: *by a non...the prefix refers to the negative meaning not* p-r-o-f-i-t i-n-s-t-i-t-u-t-i-o-n I do not know the meaning of these two words.

S: Skip it and come back to it later……

S: I think Loreen Finkelstein refers to a person because she cleans the tent carefully.
S: **While she was working, she **………she refers to the person who carefully cleans it.

**Dolly’s immediately retrospective interviews**

I: *You said that you did not know the meaning of the word—unfortunately. Have you got its meaning?*

S: No. I do not know its meaning.

I: *How about this word, ruined?*

S: I still cannot get its meaning.

I: *You questioned yourself about the meaning of the word roof because you think it has the meaning equivalent to that of the word horn. Can you tell me why?*

S: I recalled its meaning and I think it has that meaning.

I: *How about the word hole?*

S: Eh…hole…I still do not know.

I: *You said that something happened to the tent. Can you tell me what happened?*

S: I tried to get its meaning between passages but there are too many unknown words so that I cannot connect the ideas between the passages even though I tried.

I: *Why did you know the meaning of the word display?*

S: Originally, I was not sure of its meaning even though I learnt about the meaning of this word. However, When I kept reading, I found out display might mean to show something public because I read the word museum. This made me to think it this way.

I: *Can you explain it in a clear way?*

S: we know a museum is a place where we can see valuable and important things kept.

I: *So, it is kind of the use of background knowledge, isn’t it?*

S: Yes, it is.

I: *Mm hm.*

I: *You said that the prefix non refers to the negative meaning not. Can you tell me why?*

S: I learnt about it in English class that words can be made up of different parts.

I: *Mm hm.*

I: *You said that you would come back to figure out the words profit and institute. Have you got their meanings?*

S: No, I haven’t. I tried to understand the sentences but there are too many known words. In this case, I cannot guess from the context clues.

I: *So, you mean the lack of vocabulary prevented you from guessing the meaning from context, don’t you?*

S: Yes, I do.

I: *Why did you know that the person who is working is the one who cleans the tent carefully?*

S: *She* is a pronoun, we normally use *she* to refer to a woman, girl, or female that has been already mentioned. This is to make the passage coherent. In this case, she refers to the one who cleans the tent and I think the person who cleans……….
Appendix R: An excerpt of the transcript of the think aloud protocols and immediately retrospective interviews of a female low proficiency learner reading the expository text

Dolly’s think-aloud protocols
S: (I think it means that every year in February around forty days before...... parades are held all over Brazil) ..........Easter....
I: You paused. Tell me what you are thinking.
S: This word Easter is written with the first letter capitalized and in the text it says around forty days....In this case, I think it is a holiday instead of a name or a place.
S: In some of them...
I: Tell me what you are thinking
S: I am not sure of what them refers to in this sentence.
S: prizes I do not quite know what it means.
S: I am not sure of whether [R-i-o] Rio de Janeiro refers to a place, a person, or a prize or not.
S: (The best known city in Brazil to hold several competitive parades in Brazil.)
S: In one, (in one of the competitive parades, dance groups from the top 12) samba
I: Tell me what you are thinking.
S: I do not know what it means.
I: which one?
S: samba
S: (school) but I think I do not know what it means even though I have kept reading so many sentences that come after it.
S: I still do not know what it really means.
I: which one?
S: Rio de Janeiro…
I: Tell me what you want to do.
S: I think I will come back to figure it out later.
S: However…er… This word is used to connect the ideas that are different from the previous statement.
S: (However, these parades often…) I do not know what this phrase come to a halt means.........
S: than the area could accommodate ..... (for people to live...)...so strange...

Dolly’s immediately retrospective interviews
I: You mentioned that you were uncertain of what the word them refers to. Can you tell me what it refers to in the text?
S: It seems to me that it refers to either the participants or the parades.
I: Can you tell which exactly it refers to?
S: I think it refers to the *parades*.
I: Why?
S: That is because *them* is used to refer to a particular group of things when they are already been mentioned. In this case, parades are the things that already been mentioned.
I: You said that you did not quite understand what the word *prizes* means. Can you try again?
S: Mm… I think maybe it refers to a reward you get because participants compete for something.
I: Why?
S: From the rest of the sentence, I got its meaning. I mean they compete…
I: You used the words surrounding it to get its meaning, didn’t you?
S: Yes, I did.
I: *Do you know the meaning of the word* *compete*?
S: I think it is the verb form of the word *competition*.
I: You said that you were not sure of whether *Rio de Janiero* refers to a place or a person’s name. But suddenly, you know it is a city name even though you still do not know what its exact name. Can you tell me why?
S: I think it refers to a city because the information, the best-known city in Brazil, which comes after it is used to give the additional information about the thing comes earlier.
I: You mean the appositive, don’t you?
S: Yes, I do.
I: You said that you would come back to figure *Rio de Janiero* out. Do you know what it means?
S: I only know it is a place name.
I: *You said that you did not know what kind of school it is? Can you tell me what it is?*
S: I am still not sure of what kind of school it is. In this case, I think it is not important in the text so that I chose to ignore it.
I: Why?
S: … just because!
I: Can you try to get what *come to a halt* means?
S: *come to a halt*…mm…however, these parades often I think maybe it has the negative meaning.
I: Why do you think so?
S: That is because of the word *however*. This word is used to either connect two opposite ideas or introduce another subject between sentences. In this case, I think it has the negative meaning but I still do not what it means exactly……
I: You said that the word *accommodate* means to provide a room for someone……
Appendix S: An Example of the Reliability checking

An Example of Calculation Intercoder Agreement on Meta-cognitive Awareness and Use of Reading Strategies in Learning to Read

<table>
<thead>
<tr>
<th>Strategy Types</th>
<th>Coder A</th>
<th>Coder B</th>
<th>Number of codings that agree</th>
<th>Total number of codings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A High Proficient Reader, Tina</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Paraphrasing</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>2. Going back and forth in the text</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Using filler words</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Self-questioning</td>
<td>4</td>
<td>2</td>
<td>4</td>
<td>6</td>
</tr>
<tr>
<td>5. Comprehension monitoring</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6. Deciding what to read closely and what to ignore</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>7. Scanning</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>8. Self-correcting</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>9. Skimming for main ideas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10. Picking out key words</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. Paying attention to topic sentences</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12. Re-reading</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>13. Translation L2 into L1</td>
<td>29</td>
<td>30</td>
<td>58</td>
<td>59</td>
</tr>
<tr>
<td>14. Guessing meaning from context through inferences</td>
<td>7</td>
<td>7</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>15. Suspending a reading problem</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>16. Using cohesive ties</td>
<td>8</td>
<td>9</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>17. Word-solving behaviour</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>18. Contextualization</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>19. Using background knowledge</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>20. Summarizing parts of text</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>21. Activating prior knowledge</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>22. Anticipating text contents</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>23. visualizing text information</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sum = 152</td>
<td></td>
<td></td>
<td></td>
<td>162</td>
</tr>
<tr>
<td>Percent = 93%</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: Supporting Reading Strategy (SRS: No. 1 to 3); Meta-cognitive Reading Strategy (MRS: No. 4 to 11); Cognitive Reading Strategy (CRS: No. 12 to 23)
An Example of Calculation Intracoder Agreement on Meta-cognitive Awareness and Use of Reading Strategies in Learning to Read

<table>
<thead>
<tr>
<th>A High Proficient Reader, Tina</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Number of codings that agree</th>
<th>Total number of codings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paraphrasing</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>2. Going back and forth in the text</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>3. Using filler words</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>4. Self-questioning</td>
<td>6</td>
<td>4</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>5. Comprehension monitoring</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>6. Deciding what to read closely and what to ignore</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>7. Scanning</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>8. Self-correcting</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>9. Skimming for main ideas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10. Picking out key words</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. Paying attention to topic sentences</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12. Re-reading</td>
<td>5</td>
<td>4</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>13. Translation L2 into L1</td>
<td>27</td>
<td>29</td>
<td>54</td>
<td>56</td>
</tr>
<tr>
<td>14. Guessing meaning from context through inferences</td>
<td>7</td>
<td>7</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>15. Suspending a reading problem</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>16. Using cohesive ties</td>
<td>7</td>
<td>8</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>17. Word-solving behaviour</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>18. Contextualization</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>19. Using background knowledge</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>20. Summarizing parts of text</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21. Activating prior knowledge</td>
<td>3</td>
<td>3</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>22. Anticipating text contents</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>23. visualizing text information</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sum =</td>
<td>150</td>
<td></td>
<td>158</td>
<td></td>
</tr>
<tr>
<td>Percent =</td>
<td></td>
<td></td>
<td>94%</td>
<td></td>
</tr>
</tbody>
</table>

Key: Supporting Reading Strategy (SRS: No. 1 to 3); Meta-cognitive Reading Strategy (MRS: No. 4 to 11); Cognitive Reading Strategy (CRS: No. 12 to 23)
An Example of Calculation Intracoder Agreement on Meta-cognitive Awareness and Use of Reading Strategies in Learning to Read

<table>
<thead>
<tr>
<th>A Low Proficient Reader, Dolly</th>
<th>Time 1</th>
<th>Time 2</th>
<th>Number of codings that agree</th>
<th>Total number of codings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategy Types</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Paraphrasing</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2. Going back and forth in the text</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3. Using filler words</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>4. Self-questioning</td>
<td>9</td>
<td>8</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>5. Comprehension monitoring</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>6. Deciding what to read closely and what to ignore</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>7. Scanning</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8. Self-correcting</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9. Skimming for main ideas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10. Picking out key words</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. Paying attention to topic sentences</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12. Re-reading</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>13. Translation L2 into L1</td>
<td>30</td>
<td>30</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>14. Guessing meaning from context through inferences</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>15. Suspending a reading problem</td>
<td>9</td>
<td>9</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>16. Using cohesive ties</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>17. Word-solving behaviour</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>18. Contextualization</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>19. Using background knowledge</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>20. Summarizing parts of text</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>21. Activating prior knowledge</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>22. Anticipating text contents</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23. Visualizing text information</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sum</td>
<td>169</td>
<td>178</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Key: Supporting Reading Strategy (SRS: No. 1 to 3); Meta-cognitive Reading Strategy (MRS: No. 4 to 11); Cognitive Reading Strategy (CRS: No. 12 to 23)
### An Example of Calculation Intercoder Agreement on Meta-cognitive Awareness and Use of Reading Strategies in Learning to Read

#### A Low Proficient Reader, Dolly

<table>
<thead>
<tr>
<th>Strategy Types</th>
<th>Coder A</th>
<th>Coder B</th>
<th>Number of codings that agree</th>
<th>Total number of codings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Paraphrasing</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>2. Going back and forth in the text</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>3. Using filler words</td>
<td>6</td>
<td>6</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>4. Self-questioning</td>
<td>9</td>
<td>8</td>
<td>16</td>
<td>17</td>
</tr>
<tr>
<td>5. Comprehension monitoring</td>
<td>4</td>
<td>5</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>6. Deciding what to read closely and what to ignore</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>7. Scanning</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>8. Self-correcting</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>9. Skimming for main ideas</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>10. Picking out key words</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>11. Paying attention to topic sentences</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12. Re-reading</td>
<td>4</td>
<td>4</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>13. Translation L2 into L1</td>
<td>30</td>
<td>28</td>
<td>56</td>
<td>58</td>
</tr>
<tr>
<td>14. Guessing meaning from context through inferences</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>15. Suspending a reading problem</td>
<td>9</td>
<td>9</td>
<td>18</td>
<td>18</td>
</tr>
<tr>
<td>16. Using cohesive ties</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>17. Word-solving behaviour</td>
<td>5</td>
<td>5</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>18. Contextualization</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>19. Using background knowledge</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>20. Summarizing parts of text</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>21. Activating prior knowledge</td>
<td>4</td>
<td>3</td>
<td>6</td>
<td>7</td>
</tr>
<tr>
<td>22. Anticipating text contents</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>23. Visualizing text information</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sum =</td>
<td>156</td>
<td>172</td>
<td></td>
<td>90%</td>
</tr>
</tbody>
</table>

Key: Supporting Reading Strategy (SRS: No. 1 to 3); Meta-cognitive Reading Strategy (MRS: No. 4 to 11); Cognitive Reading Strategy (CRS: No. 12 to 23)
Appendix T: An excerpt of the total frequencies of strategy use included in the transcript of the think aloud protocols and immediately retrospective interviews

Below is an excerpt of the total frequencies of some strategy use included in the transcript of the think aloud protocols and immediately retrospective interviews performed by Tina, a female Taiwanese first year EFL learner classified in this study as a HPR reading the narrative and expository texts (see the Frequencies of Strategy Use in Appendix S above).

**Tina’s think-aloud protocols in relation to the narrative text**

S: Basically speaking, it is a comparatively old tent and connected to the history in the past because it has been displayed in a national museum for almost a hundred years after Washington used it. [Paraphrasing] 1 S: Unfortunately, for most of the time it was somewhat or to some degree damaged and the damaged part is a big hole in its roof. [Paraphrasing] 2 S: …an expert in pre-historical …er….historical objects in order to carefully clean it. [Self-correcting] 1

**Tina’s immediately retrospective interviews in relation to the narrative text**

I: You said that you forgot the meaning of the word---troops. Can you tell me what you want to do? S: As for me, I always try to infer its meaning from the following sentences. I: Can you tell me its meaning you have inferred? [Guessing meaning from context through inferences] 1 S: umm…I remember it is about trap….or something…but I think the main purpose of reading is to get the overall comprehension. So, in this case, as long as the breakdown in the reading comprehension does not hinder my understanding of the text as a whole, I chose to ignore it. [Deciding what to read closely and what to ignore] 1 I: you said that you were not sure of the equivalent Chinese meaning to the word museum….S: Are you sure of its meaning? S: Yes, but I think sometimes it does not need to find what the exact meaning of the word is because the context in which this word is used can reveal its meaning to some degree I guess. So I sometimes understand its meaning from the context ….I think it might mean a place where people can see the display…like a gallery….or an art hall. [Guessing meaning from context through inferences] 2 I: You said that you were thinking how to translate the phrase of the head of another museum. Can you tell me what it means? S: Eh…I still cannot know what it means exactly but I chose to ignore it because the main point is to find the missing piece. [Deciding what to read closely and what to ignore] 2 I: You said that it was a name but I did not know how to make the sound of the word. Can you explain it why? S: I know it is a person’s name because it is written with the first letter of each word capitalized. 1[Word-solving behaviour] I: You said you would keep reading when faced with the unknown—inspect? Can you tell me what the meaning of the word is
and what you did to get its meaning? S: I used my vocabulary knowledge to tackle this vocabulary problem. That is because I know that this word can be separated into two parts. In other words, *in* has the meaning of ‘toward the inside’ and *spect* has the meaning of ‘looking or seeing’. In this case, I think it means to look at something carefully in order to check it.  

**Word-solving behaviour**

I: Why did you know that the missing piece was in that museum’s collections? S: Because she inspected some sections of the cloth in that museum’s collection, I think the piece that was missing from Washington’s tent is there. I: So, did you anticipate the text content to read? S: Yes. I did.  

**Anticipating text contents**

S: From the sentences that follow, I have the clues; that is to say, it is the matching between two things. So, *outline* might refer to a certain kind of shape because she traced and compared…I guess.  

**Guessing meaning from context through inferences**

I: You said that you did not quite understand the phrase *has been credited with...*but I noticed that you got the correct information from the sentence even though you did not know it. Can you explain the reason why? S: Er…when I read for the first time, I did not quite understand it. However, I roughly got its meaning from the rest of the words surrounding the phrase in the sentence because she solved an old mystery so that I think it is about…she was convinced of solving this old mystery.  

**Guessing meaning from context through inferences**

I: Why the answer to question 35 is B? S: Again based on the information given in the text, in the first paragraph it says he was in a war and slept in his personal tent…from these two sentences I know he was the military leader and only can the leader in the military sleep in his own tent so I chose B.  

**Using background knowledge**

S: What problem for local parades is described in the article? S: The information given in choice A is not mentioned in the text. B is not mentioned in the text, either. D is not mentioned in the text, either. I guess the answer is C even though I do not know what the meaning of the word *crowded* is. That is because in the text it says that the local area is not big enough to take in the people. In this case, I think the neighborhood areas get crowded from the text context.  

**Guessing the meaning from context through inferences**

S: I did the self-correction after I finished reading the sentence that follows.  

**Self-correcting**

…but if I am doing the reading alone, I will not try to understand the exact meaning of the word. Instead, I read the sentence that follows to understand the sentence as a whole to infer. And I think the word *as* is a conjuncture used to giving a reason for something to happen and I do not need to get the exact meaning of the word. That is because I can understand what the whole sentence means and the understanding is done in Chinese S: I think the word *as* is used to give a reason for
something to happen like what the text says the competition is very tough because the weakest school will not be able to compete in the following year. I: Did you infer it meaning from context? S: Yes, I did. 6 [Guessing meaning from context through inferences] I: You said that come to a halt is a phrase instead of the isolated words. Can you explain this clearly? S: That is because I learnt about this phrase and this sequence of words means a sudden stop. I: Can you explain what you mean by ‘this sequence of words’? S: I remember my English teacher told us that there were some English words that are fixed and combined. I mean they have to co-occur and they are the fixed combinations and have their own meanings. 3[Word-solving behaviour] I: I noticed that you re-read the whole sentence to get the meaning of the word accommodate. Can you explain why and how you re-read the whole sentence? S: I re-read it because I think I can understand what this sentence basically means. After re-reading it, I thought the focus was on the larger number of people. Also, the passages that come next says to reduce the number of people in the parade so that I think this word accommodate has the meaning of taking people in from the context 7 [Guessing meaning from context through inferences]. In this case, the purpose of re-reading is to clarify whether my understanding of what being read is correct or not. I: I noticed that you questioned the meaning of the phrase parade committee and you said that you would come back to figure it out later. Can you tell me what it means exactly? S: I think it refers to people who organize the parade because only can a decision made by people. In this case, the decision made was not to announce the starting time. Also, normally speaking, the announcement of the starting time is made by people who organize the activity. [Using background knowledge] 2I: Mm hm. I: How about Brazil’s other pre-Easter? S: the prefix ‘pre’ has the meaning of before and the prefix ‘non’ has the meaning of failure to do something…4[Word-solving behaviour]
Appendix U: An excerpt of the frequencies of strategy use included in the transcript of the think aloud protocols and immediately retrospective interviews

Below is an excerpt of the total frequencies of some strategy use included in the transcript of the think aloud protocols and immediately retrospective interviews performed by Dolly, a female Taiwanese first year EFL learner classified in this study as a low reading proficiency learner reading the narrative and expository texts (see the Frequencies of Strategy Use in Appendix S above).

Dolly’s think-aloud protocols in relation to the narrative text
S: *For most of the time…ruined…* I do not know its meaning but I know something happened to the tent because of the passive voice here. I: Mm hm. S: I came across this word in the previous sentence---*(a large)* [h-o-l-e] so that I think something happened to the tent. But I still cannot get its meaning. S: *planned to display it in a new museum…er…oh...*museum display in a new museum so that I think it means something related to the tent [Using filler words] was planned to display in a new museum. S: *While she was working, she…..*she refers to the person who carefully clean it. S: *the tent very closely……*she also did something [Using filler words] to the tent but I do not know what she did.

S: *One day, when she was visiting the head of another museum,…*one day, when she was visiting another museum), she [m-e-n-t-i-o-n-e-d] I do not know its meaning. I: Tell me what you want to do. S: I am trying to get its meaning…S: This word appears again [p-i-e-c-e] that was missing from Washington’s tent,…I think something missing from Washington’s tent. 5 [Using filler words] S: They matched perfectly…..er…I think it means the tent and the thing that was missing from Washington’s matched but I still do not know what the thing is 6 [Using filler words] even though I know something was missing from Washington’s tent based on the information from the passages I read previously. S: [p-i-e-c-e] I do not know its meaning. S: *have been reunited* re—means again and Loreen Finkestein has been [c-r-e-d-i-t] I do not know its meaning.

Dolly’s immediately retrospective interviews in relation to the narrative text
I: *How about this word, ruined?* S: I still cannot get its meaning. I: *How about the word hole?* S: Eh…hole…..I still do not know. I: *Why did you know the meaning of the word display?* S: Originally, I was not sure of its meaning even though I learnt about the meaning of this word. However, When I kept reading, I found out display might mean to show something public because I read the word museum. This made me to think it this way. I: *Can you explain it in a clear way?* S: we know a museum is a place where we can see valuable and important things kept. I: *So, it is kind of the use of background knowledge, isn’t it?* S: Yes, it is. [Using background knowledge] 1
I: *Mm hm. I: You said that the prefix non refers to the negative meaning not. Can you tell me why? S: I learnt about it in English class that words can be made up of different parts. [Word-solving behaviour] 1 I: *Mm hm. I: Why did you know that the person who is working is the one who cleans the tent carefully? S: *She is a pronoun, we normally use she to refer to a woman, girl, or female that has been already mentioned. 1 [Using cohesive ties] This is to make the passage coherent. In this case, she refers to the one who cleans the tent and I think the person who cleans the tent is the one who is working. I: *You said that the tent and the thing that was missing matched. But you still do not know what it is. Can you tell me the reason why? S: Because I know the text is mainly about something missing from Washington’s tent and a person did something to find it and they matched. On the basis of the information from the passages I read previously, I know there must be a connection between the events. I mean the connection of information between portions of text makes me think so. I: *You said that re means again. Can you explain it in a clear way? S: I mean the pre-fix because it can be added to the beginning of a word to change its meaning. But I still do not know what re-united means exactly here. [Word solving behaviour] 2

Dolly’s think-aloud protocols in relation to the expository text

S: This word *Easter is written with the first letter capitalized and in the text it says around forty days….In this case, I think it is a holiday instead of a name or a place. [Word-solving behaviour] 3 S: *In some of them…I: Tell me what you are thinking S: I am not sure of what *them refers to in this sentence. S: Er…I am not sure of this word but I know this word is made up of two words with hyphen in between…specially and the past participial (built) of the word build… I am still not sure of this word. S: *pre-Easter (*It should mean a certain time before Easter holiday)…*ones refer to some of them…

Dolly’s immediately retrospective interviews in relation to the expository text

I: You mentioned that you were uncertain of what the word *them refers to. Can you tell me what it refers to in the text? S: It seems to me that it refers to either the participants or the parades. I: *Can you tell which exactly it refers to? S: I think it refers to the parades. I: *Why? S: That is because *them is used to refer to a particular group of things when they are already been mentioned. In this case, parades are the things that already been mentioned. 2 [Using cohesive ties] I: *You said that you did not how to translate this word, specially-built, properly in your own language. Can you explain it in a clear way? S: I mean I know this word is made up of two words with hyphen in between; that is to say, it is made up of two parts, 4[ Word-solving behaviour] specially and the past participial (built) of the word build. But I am still not sure of how to translate it properly in my own language even though I know it refers to an area built in a special way. I: You said that pre-Easter refers to some time before the Easter holiday. Can you
tell me why? S: I remember the prefix ‘pre’ is used to add to a word and it has the meaning of before a certain time. In this case, I think it this way. 5 [Word-solving behaviour] I: You said the word ones refer to some of them. Can you explain what ones refer to exactly in the text content? S: I think ones refer to the parades because it is used to referring to the previously-stated noun. In this case, it refers to the competitive parades, I guess. 3[Using cohesive ties] I: You said that you did not know what the phrase come to a halt means. Can you try to get what it means? S: come to a halt...mm....I: Tell me what you are thinking. S: However, these parades often come to a halt ....come to a halt.....come to a halt....(I think maybe it has the negative meaning) I: Why do you think so? S: That is because of the word however. This word is used to either connect two opposite ideas or introduce another subject between sentences. In this case, I think it has the negative meaning but I do not what it means exactly. 4 [Using cohesive ties] I: Can you try it again? S: Er......decided that for....I: Tell me what you are thinking. S: I think the focus is on the decision made by them even though I do not know the exact meaning of the word committee. In this case, I guess that the parade committee might refer to a group of people who organize the parade. Also, the word of they is used for referring to the parade committee who decided not to announce the starting time because they made a decision. 5[Using cohesive ties] I: Mm hm. I: You mentioned the word local while doing question 40? Can you tell me why? S: I always read the part of the text first if the question is relevant to that part. By doing this, I can go back and forth in the text in order to get the particular information about the reading question quickly. 1 [Scanning] I: So, the answer to question 40 is C, isn’t it? S: Yes, it is.
Certificate of ethical research approval

Graduate School of Education

STUDENT RESEARCH/FIELDWORK/CASEWORK AND DISSERTATION/THESIS

You will need to complete this certificate when you undertake a piece of higher-level research (e.g. Masters, PhD, EdD level).

To activate this certificate you need to first sign it yourself, then have it signed by your supervisor and by the Chair of the School’s Ethics Committee.

For further information on ethical educational research access the guidelines on the BERA web site: http://www.bera.ac.uk/publications/guides.php and view the School’s statement in your handbooks.

Your name: Ping-yu Liu

Your student no: 570037395

Degree/Programme of Study: 4-year PhD in Education

Project Supervisor(s): Dr. Li Li and Dr. Shirley Larkin

Your email address: pl264@exeter.ac.uk

Tel: 00886-4-7383679

Title of your project:

Taiwanese EFL University Learners’ Meta-cognition and L2 Reading

Brief description of your research project:
In Taiwan, due to the international globalization, the English courses have been incorporated as part of the national curriculum, ranging from primary school pupils to university students. Of significance of this trend is the fact that the government in Taiwan has urged the importance of learning English as a second language rather than a foreign language due to the societal functions. Accordingly, English has been suggested to be designated as the medium of instruction in educational establishments and its paramount importance has never been neglected by either Taiwanese parents or society. In response to this call, the majority of universities in Taiwan request the students to pass GEPT (General English Proficiency Test) administrated by the LTTC (Language Training and Test Centre) authorized in Taiwan, TOIEC or TOFEL as the threshold for university admission or graduation (LTTC, 2009). However, the majority of them are unsuccessful readers, especially regarding learning to read in English, even though they are expected to be relatively proficient at English since that they have been taught and learnt English for seven years (from primary pupils to university students (Tsai, 2005). Of significance to this problem is the fact that English reading courses in Taiwan mainly focus on how to decode and interpret the encoded reading passages syntactically and semantically. English reading courses do not provide learners with a basis for the development of the negotiation of meanings in learning to read in English. The importance of how learners regulate, control, monitor and negotiate with learning to read in English should not be neglected. It therefore seems likely that the investigation into meta-cognition—how they perceive themselves as readers, what beliefs and knowledge they have acquired or learnt and how strategically they cope with the difficulties they have in reading comprehension—is necessary.

Based upon the purpose of this research and its context-specificity stated above, the naturalistic orientation of interpretative research appears to be appropriate selection since the idiosyncratic human behaviours and characteristics in reading process from the insider’s views are the main focus. With this in mind, the specific objectives of this research are to explore the meta-cognitive strategic knowledge students have, meta-cognitive reading strategies students use, and the relationship between the meta-cognitive reading strategy use and the text types. This research will adopt the case study as methodology consisting of multiple sources of data collection/evidence. This is to collect target students’ views on and behaviours toward learning to read in English.

Hopefully, the information provided by this research will inform strategic development of English reading courses in the university In Taiwan where the research takes place.
Give details of the participants in this research (giving ages of any children and/or young people involved):

The Selection of the Participants:

- First, the GEPT test is regarded as the standard test in Taiwan and is accepted the most in universities in Taiwan as the threshold for graduation. More importantly, the university where the research takes place uses the intermediate level of the GEPT tests published by LTTC in Taiwan as placement test. That is because the intermediate level is the threshold for the graduation. Therefore, before the participants are selected, they will be asked to take the tests consisting of reading section and listening section. The tests given to the students are directly taken from the GEPT test.
- Second, after they take the standard GEPT test for the participant recruitment, I will refer back to the raw scores derived from their placement tests given by the university. This is to recruit the students who successfully reach the requirement of GEPT intermediate level.
- Finally, all of the aforesaid procedures for participant recruitment are used to make sure of whether they are selected to suit the purpose of the study (purposive sampling).

Give details regarding the ethical issues of informed consent, anonymity and confidentiality (with special reference to any children or those with special needs) a blank consent form can be downloaded from the SELL student access on-line documents:

I will be following the Code of Ethics and Conduct set out by the British Educational Research Association (BERA, 2004). Issues regarding informed consent, privacy, right to withdraw, respect will be carefully considered as detailed below.

Informed consent:

It will be essential to obtain informed consent from the gatekeeper, stakeholder, teachers, and students. First, I will contact the director of the language center to get his permission to start the research. Second, since students are involved in the research, I will contact the class teachers first to get access to the students. This is further to get the informed consent from the students for the participation in the research. More importantly, I will make them aware of both what will involve and what the purpose of the research is. Finally, participants will be made aware of how the research finding will be used as well.
Respect: The views of students will be essential in this study. I will ensure that these are listened to, respected, represented and acted upon.

Privacy:
- Confidentiality: Records of the data collected (including transcripts and any audio recordings) will be stored in a secure and safe place. Electronic information will only be accessed by the researcher with their username and password. This information will be stored on a secure system with recognised virus protection. Electronic and paper information will be locked in a secure building.
- Anonymity: Information will also be coded to ensure anonymity. This will remain anonymous in the write up of the research. Collected written information will be destroyed by shredding and securely disposing when it is no longer required. Any audio recording will also be disposed of digitally.

Right to withdraw:
- Participants will be reminded of the fact that they have the right to withdraw from the research at any given time and that data related to them will be destroyed.

Harm or Detriment:
- It will be made clear to participants that in the exceptional event that there is evidence to raise serious concern about the safety of participants or other people.

Give details of the methods to be used for data collection and analysis and how you would ensure they do not cause any harm, detriment or unreasonable stress:

Data Collection

- Qualitative Information to determine what meta-cognitive strategic knowledge students have while learning to read in English and what meta-cognitive reading strategies students actually use while learning to read in English will be obtained. This will involve 20 university freshmen who successfully reached the standard or requirement level of the GEPT intermediate to read two different text types - narrative texts and expository texts. With the consent of participants, think-aloud data and interviews will be recorded and transcribed. This will then be coded thematically.
- The methods used are including the think-aloud method, retrospective interviews, and semi-structured interviews.
Data Collection for Phase One:

- **Pilot Study:** as noted above, GEPT is regarded as the standard test in Taiwan. It is therefore clear that its validity and reliability have been established. As a result, the reading texts will be directed taken from the GEPT tests. However, in order to make sure whether the texts selected are suitable for the learners in terms of the difficulty level, culture, vocabulary density, and sentence patterns. The pilot study will be implemented before the data is to be collected. This is to be sufficiently familiar with the current level of the participants to ensure the reading task is one which is neither excessively difficult, nor one which they perform with such automaticity they are unable to break it down into component and sequential cognitive steps. The students selected for pilot study will be excluded from the research. The informed consent will be obtained before it is implemented.

- **Think-aloud Method:** This method will be conducted to individuals and be used to tap into the data while the participants are in the process of attending to the reading tasks given. However, before its implement, participants will be introduced to the necessary skills related to the think-aloud method, so that they are able, willing and comfortable to think aloud or describe while reading. The participants are allowed to use whatever language they felt most comfortable using during their think-aloud process. This is to put them at ease without stress to enhance their ability to produce think-aloud data.

- **Retrospective Interviews:** This will be implemented immediately after the think-aloud method. This is further to allow the participants to explain or clarify a certain point of behaviour so as further to capture the information on strategies that think-aloud could not reveal, and elicit the information on specific strategies not voiced by individuals, on pauses in the think aloud session or on fragments of the think aloud session that sounded incomprehensible, very incomplete or very odd.

Data Collection for Phase Two:

- **Meta-cognitive Semi-structured Interview:** At this stage, semi-structured interviews will be conducted to individuals. This is not only to tap into the unconscious aspects unattended by the students while dealing with the think-aloud protocols but also to collect useful information about one’s self-reported strategy use in general situation or to make it clear.
whether certain strategies are used in particular situations. Moreover, it can help the think-aloud method with the complement information to achieve a more comprehensive understanding of cognitive processes during reading.

Data Analysis:

- **Phrase one:** Qualitative information will be transcribed for the thematic coding and further analysis. This is to explore the meta-cognitive strategic knowledge the participants have and the meta-cognitive reading strategies the participants actually use altogether with the different types of reading texts.

- **Phrase two:** The data will be also input into the SPSS statistical package to allow for statistical analysis of the information. This will provide numerical data regarding the meta-cognitive reading strategies students use. This is to examine whether there are significant differences of the meta-cognitive reading strategy uses derived from the different types of reading texts given to students while processing the materials. It will provide an overview of the descriptive statistics, including the mean scores, standard deviation and distribution of scores.

Give details of any other ethical issues which may arise from this project (e.g. secure storage of videos/recorded interviews/photos/completed questionnaires or special arrangements made for participants with special needs etc.):

During the data collection, data analysis and write up, data (think-loud sessions, audio recordings, interview data and individual data) will be securely stored in a locked cabinet in a secure building. As previously mentioned, electronic information will only be accessed by the researcher with their username and password. Electronic information will also be stored on a secure system, within a locked building with recognised virus protection. It will be destroyed when it is no longer required.

Give details of any exceptional factors, which may raise ethical issues (e.g. potential political or ideological conflicts which may pose danger or harm to participants):
As noted above, a particularly sensitive area of the research is the cognitive level of the participants because the research mainly relies on thinking about thinking related to the process of knowing, learning, and understanding of their reading behaviors they describe and clarify and therefore informed consent and right to withdraw must be strictly adhered to. It is also the responsibility of all those involved in the research to raise concerns about any of the participants during the case study period.

This form should now be printed out, signed by you below and sent to your supervisor to sign. Your supervisor will forward this document to the School’s Research Support Office for the Chair of the School’s Ethics Committee to countersign. A unique approval reference will be added and this certificate will be returned to you to be included at the back of your dissertation/thesis.

I hereby certify that I will abide by the details given above and that I undertake in my dissertation / thesis (delete whichever is inappropriate) to respect the dignity and privacy of those participating in this research.

I confirm that if my research should change radically, I will complete a further form.

Signed: Ping-Yu, Liu date: 2012-03-09

N.B. You should not start the fieldwork part of the project until you have the signature of your supervisor

This project has been approved for the period: April 2016 until: March 2016

By (above mentioned supervisor’s signature):

[Signature] date: 28/03/2012

N.B. To Supervisor: Please ensure that ethical issues are addressed annually in your report and if any changes in the research occurs a further form is completed.

SELL unique approval reference: DNI 12:46

Signed: [Signature] date: 20/04/2012
Chair of the School’s Ethics Committee

Chair of the School’s Ethics Committee
last updated: September 2007
Appendix W: Consent form

I have been fully informed about the aims and purposes of the project.
I understand that:

there is no compulsion for me to participate in this research project and, if
I do choose to participate, I may at any stage withdraw my participation. I
have the right to refuse permission for the publication of any information
about me any information which I give will be used solely for the purposes
of this research project, which may include publications. If applicable, the
information, which I give, may be shared between any of the other
researcher(s) participating in this project in an anonymised form all
information I give will be treated as confidential the researcher(s) will
make every effort to preserve my anonymity

........................................................... 18/10/27
(Signature of participant)   (Date)

...........................................................
(Printed name of participant)

One copy of this form will be kept by the participant; a second copy will be kept by
the researcher(s)
Contact phone number of researcher(s): 00886-4-7383679

If you have any concerns about the project that you would like to discuss, please
contact: P1254@exeter.ac.uk OR S19781225@hotmail.com.tw

Exeter University
Graduate School of Education
PhD Student
Ping-Yu, Liu

Data Protection Act: The University of Exeter is a data collector and is registered with the Office of the Data Protection
Commissioner as required to do under the Data Protection Act 1998. The information you provide will be used for research
purposes and will be processed in accordance with the University’s registration and current data protection legislation. Data will
be confidential to the researcher(s) and will not be disclosed to any unauthorised third parties without further agreement by the
participant. Reports based on the data will be in anonymised form.
Appendix X Frequencies of strategy use in learning to read by the high proficient readers and the low proficient readers with narrative and expository texts

<table>
<thead>
<tr>
<th>Text type</th>
<th>Strategies</th>
<th>Proficiency level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Narrative text</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low proficient readers</td>
<td>High proficient readers</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>10</td>
</tr>
<tr>
<td>II</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>16</td>
<td>11</td>
<td>1</td>
</tr>
<tr>
<td>Expository text</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Low proficient readers</td>
<td>High proficient readers</td>
</tr>
<tr>
<td>Total</td>
<td>0</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td></td>
</tr>
</tbody>
</table>

- **Paraphrasing**
- **Going back and forth in the text**
- **Using filler words**
<table>
<thead>
<tr>
<th>Key: LPR = Low Proficient Reader</th>
<th>Narrative text</th>
<th>Expository text</th>
<th>Text type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>Proficiency level</td>
</tr>
<tr>
<td></td>
<td>LPR</td>
<td>LPR</td>
<td>Dia</td>
</tr>
<tr>
<td></td>
<td>Yong</td>
<td>Has</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily</td>
<td>Joanna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>14</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pseudonyms of participants</td>
</tr>
<tr>
<td></td>
<td>LPR</td>
<td>LPR</td>
<td>Dia</td>
</tr>
<tr>
<td></td>
<td>Yong</td>
<td>Has</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily</td>
<td>Joanna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Paraphrasing</td>
</tr>
<tr>
<td></td>
<td>LPR</td>
<td>LPR</td>
<td>Dia</td>
</tr>
<tr>
<td></td>
<td>Yong</td>
<td>Has</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily</td>
<td>Joanna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Going back and forth in the text</td>
</tr>
<tr>
<td></td>
<td>LPR</td>
<td>LPR</td>
<td>Dia</td>
</tr>
<tr>
<td></td>
<td>Yong</td>
<td>Has</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily</td>
<td>Joanna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Using filler words</td>
</tr>
<tr>
<td></td>
<td>LPR</td>
<td>LPR</td>
<td>Dia</td>
</tr>
<tr>
<td></td>
<td>Yong</td>
<td>Has</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Daily</td>
<td>Joanna</td>
<td></td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Text Type</td>
<td>Reading Strategies</td>
<td>Type and Frequency of Supporting</td>
<td>Paraphrasing</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------</td>
<td>----------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>Narrative</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expository</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expository</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expository</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Expository</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type and frequency of metacognitive reading strategies</td>
<td>Proficiency level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------------------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skimming for main ideas</td>
<td>Total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-correcting</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comprehension monitoring</td>
<td>23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deciding what to read closely and what to ignore</td>
<td>18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paying attention to topic sentences</td>
<td>117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scanning</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Self-questioning</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Picking out key words</td>
<td>2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Text types</th>
<th>Narrative text</th>
<th></th>
<th>Expository text</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low proficient readers</td>
<td>High proficient readers</td>
<td>Low proficient readers</td>
</tr>
<tr>
<td>Total</td>
<td>9</td>
<td>18</td>
<td>23</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>0</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>48</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>8</td>
<td>2</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Key: HPR = High proficiency reader</td>
<td>Narrative text</td>
<td>Expository text</td>
<td>Text type and frequency of metacognitive strategies</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>HPR</td>
<td>HPR</td>
<td>Proficiency level</td>
</tr>
<tr>
<td>7</td>
<td>HPR</td>
<td>Key</td>
<td>Pseudonyms of Participants</td>
</tr>
<tr>
<td>20</td>
<td>HPR</td>
<td>Li</td>
<td>Skimming for main ideas</td>
</tr>
<tr>
<td>16</td>
<td>HPR</td>
<td>Tina</td>
<td>Self-correcting</td>
</tr>
<tr>
<td>2</td>
<td>HPR</td>
<td>Grace</td>
<td>Comprehension monitoring</td>
</tr>
<tr>
<td>11</td>
<td>HPR</td>
<td>Yeah</td>
<td>Deciding what to read closely and what to ignore</td>
</tr>
<tr>
<td>4</td>
<td>HPR</td>
<td></td>
<td>Paying attention to topic sentences</td>
</tr>
<tr>
<td></td>
<td>HPR</td>
<td></td>
<td>Scanning</td>
</tr>
<tr>
<td></td>
<td>HPR</td>
<td></td>
<td>Self-questioning</td>
</tr>
<tr>
<td></td>
<td>HPR</td>
<td></td>
<td>Picking out key words</td>
</tr>
<tr>
<td>Key: LPR = Low proficient reader</td>
<td>Narrative text</td>
<td>Expository text</td>
<td>Text type</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-----------</td>
</tr>
<tr>
<td>Total</td>
<td>LPR</td>
<td>Yon</td>
<td>Dia</td>
</tr>
<tr>
<td>363</td>
<td>Total</td>
<td>LPR</td>
<td>0</td>
</tr>
<tr>
<td>Type and frequency of cognitive strategies</td>
<td>Proficiency level</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------------------</td>
<td>------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Translating L2 into L1</td>
<td>69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guessing meaning from context through inferences</td>
<td>24</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Suspending a reading problem</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Re-reading</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using cohesive ties</td>
<td>22</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contextualization</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using background knowledge</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Summarizing parts of text</td>
<td>6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Activating prior knowledge</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Word solving behavior</td>
<td>8</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anticipating text contents</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Visualizing text information</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Text type</th>
<th>Narrative text</th>
<th>Expository text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>Low proficient readers</td>
<td>High proficient readers</td>
</tr>
<tr>
<td>191</td>
<td>66</td>
<td>30</td>
</tr>
<tr>
<td>84</td>
<td>46</td>
<td>15</td>
</tr>
<tr>
<td>64</td>
<td>47</td>
<td>10</td>
</tr>
<tr>
<td>22</td>
<td>22</td>
<td>2</td>
</tr>
<tr>
<td>12</td>
<td>12</td>
<td>2</td>
</tr>
<tr>
<td>10</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td>8</td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
</tbody>
</table>

364
<table>
<thead>
<tr>
<th>Key: HPR = High proficient reader</th>
<th>Narrative text</th>
<th>Expository Text</th>
<th>Text type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>79</td>
<td>1</td>
<td>1</td>
<td>Yeh</td>
</tr>
<tr>
<td>48</td>
<td>2</td>
<td>8</td>
<td>Key</td>
</tr>
<tr>
<td>32</td>
<td>3</td>
<td>2</td>
<td>Li</td>
</tr>
<tr>
<td>26</td>
<td>4</td>
<td>6</td>
<td>Grace</td>
</tr>
<tr>
<td>29</td>
<td>5</td>
<td>10</td>
<td>Tina</td>
</tr>
<tr>
<td>19</td>
<td>6</td>
<td>4</td>
<td>Yang</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Proficiency level</th>
<th>Pseudonyms of participants</th>
<th>Translating L2 into L1</th>
<th>Guessing meaning from context through inferences</th>
<th>Suspending a reading problem</th>
<th>Re-reading</th>
<th>Using cohesive ties</th>
<th>Contextualization</th>
<th>Using background knowledge</th>
<th>Summarizing parts of text</th>
<th>Activating prior knowledge</th>
<th>Word-solving behavior</th>
<th>Anticipating text contents</th>
<th>Visualizing text information</th>
</tr>
</thead>
<tbody>
<tr>
<td>79</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>48</td>
<td>2</td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>32</td>
<td>3</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>26</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>29</td>
<td>5</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>19</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Key: LPR = Low proficient reader</td>
<td>Narrative Text</td>
<td>Expository text</td>
<td>Text Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>-----------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Type and frequency of cognitive reading strategies</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>Proficiency level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>112</td>
<td></td>
<td></td>
<td>Pseudonyms of participants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>32</td>
<td></td>
<td></td>
<td>Translating L2 into L1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>52</td>
<td></td>
<td></td>
<td>Guessing meaning from context through inferences</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>57</td>
<td></td>
<td></td>
<td>Suspending reading problem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td>Re-reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td>Using cohesive ties</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td>Contextualization</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td></td>
<td></td>
<td>Using background knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>Summarizing parts of text</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>Activating prior knowledge</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td></td>
<td>Word-solving behavior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>Anticipating text contents</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td></td>
<td></td>
<td>Visualizing text information</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

|       |       |       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   | DPR   |
| Yong  | Yaw   | Bia   | Dia   | Chia  | Joa   | Yong  | Yaw   | Bia   | Dia   | Chia  | Joa   | Yong  | Yaw   |
| 13    | 22    | 9     | 7     | 7     | 8     | 3     | 1     | 9     | 2     | 2     | 7     | 2     | 5     |
| 3     | 5     | 1     | 0     | 2     | 2     | 1     | 1     | 2     | 6     | 8     | 12    | 2     | 4     |
| 7     | 3     | 2     | 2     | 2     | 1     | 2     | 4     | 1     | 1     | 1     | 1     | 2     | 2     |
| 0     | 0     | 0     | 1     | 1     | 0     | 2     | 0     | 0     | 0     | 0     | 2     | 0     | 0     |
| 2     | 1     | 2     | 2     | 2     | 2     | 2     | 2     | 3     | 0     | 2     | 2     | 1     | 3     |