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**A STUDY ON THE READING STRATEGIES OF
CSL ADULT LEARNERS**

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M.Phil

**The Hong Kong
Polytechnic University**

2013

THE HONG KONG POLYTECHNIC UNIVERSITY
Department of Chinese and Bilingual Studies

**A Study on the Reading Strategies of
CSL Adult Learners**

KE Sihui

**A thesis submitted in partial fulfillment of the requirements
for the degree of**

Master of Philosophy

June 2012

CERTIFICATE OF ORIGINALITY

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Abstract

The application of reading strategies plays an important role in CSL reading. This study examined the interaction among CSL learners' use of reading strategies, L1 literacy background, overall CSL proficiency, and CSL reading performance. 75 CSL learners of three proficiency levels—— elementary, intermediate and advanced—— were recruited for the study. The participants could also be categorized further into two groups according to their L1 backgrounds: those within the Chinese cultural sphere and those from the non-Chinese cultural sphere. The data were collected by engaging the participants in reading tasks, a questionnaire survey and a follow-up interview. In the reading tasks, the participants were required to perform verbal reports during reading and free recall after reading. The verbal reports were aimed at revealing the use of reading strategies during reading and free recall was used to assess reading performance. Thereafter, participants were asked to fill in a questionnaire adapted from the 4-pronged Comprehension Strategy Framework (McNamara et al., 2007), which tapped into their use of reading strategies in both L1 reading and CSL reading.

The results reveal that the application of CSL reading strategies is influenced by CSL proficiency level and L1 background. As the overall CSL proficiency level improved, there was progression in the use of CSL reading strategies. Regardless of the CSL learners' Chinese proficiency levels, however, they still needed to use decoding strategies frequently at the character or word level in CSL reading.

Additionally, the adoption of decoding strategies varied between the learners of different L1 backgrounds. It was also found that, at the elementary level, the effect of CSL proficiency was greater than that of reading strategy on CSL reading performance, while at the intermediate and advanced levels, reading strategy tended to be a stronger predictor in determining CSL reading performance. Through the effective application of reading strategies, it was possible for CSL readers with lower CSL proficiency to outperform those with higher CSL proficiency, suggesting that reading strategy is an important predictor for CSL reading performance.

The findings of this study are congruent with Bernhardt's (2005, 2010) Compensatory Model of L2 reading, which proposes that there is mutual compensation among factors in L2 reading, including L1 literacy, L2 proficiency, comprehension strategies and so forth. However, there is also inconsistency in that the Compensatory Model views L1 literacy and L2 proficiency as two major factors in L2 reading performance and treats reading strategy as a supplementary component, whereas it was found in this study that the effective application of reading strategies is valuable in leading to successful L2 reading. Therefore, it is suggested that the Compensatory Model of L2 reading might need to attribute more attention to the role of reading strategy. Also, practical implications can be drawn for CSL reading instruction. It is necessary for teachers to provide systematic reading strategy instruction for CSL adult learners in order to improve their reading proficiency and enhance their learning throughout the CSL curriculum.

Publications arising from the thesis

(Conference papers)

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Chapter 1 Introduction

1.1 Rationale

With the prosperity of China's economy and her rising status on the international arena, recent years have witnessed a dramatic increase in the number of learners of Chinese as a second language (CSL) across the world. However, the unique features of the Chinese language have been great obstacles for learners to become proficient in Chinese. There are some learners who manage to command spoken skills approximating native speakers of Chinese, but they have great difficulties in reading. Reading is one of the most important aspects in CSL learning, but it is a challenging task for CSL learners, especially Western learners.

One of the principal problems for Western learners in reading Chinese is the morphographic script, with sound mapped onto the character at the morpheme level (Dew, 2007). Considerable research has been conducted to investigate the process of reading Chinese characters and potential strategies to improve the CSL learner's ability to subtract sounds and meanings from characters (e.g., Chen, 2004; Lan et al., 2009; Shen, 2005). However, recognizing characters is more concerned with decoding than reading. Reading involves complex cognitive processing at different levels, ranging from characters, to words, to sentences, and to texts. To be proficient in reading Chinese, it is essential for CSL learners to be fluent in reading Chinese texts. Nevertheless, in the extant literature, studies of CSL reading at the text or discourse level have received insufficient attention. Given the importance of developing reading ability in CSL learning, it is worthwhile to examine the process

of CSL reading at the discourse level and possible factors that foster CSL reading proficiency.

1.2 Research background

Reading is such a complex process that it has driven substantial research interest in the past decades since Huey's (1908) study. Recent progress in psycholinguistics has shed light on depicting the nature of reading processing through the development of reading models, and thus contributes to the understanding of reading in the first language (L1). Reading in a second language (L2), however, is different, because it involves two languages and it is more complicated (Koda, 2005).

There are debates about L2 reading regarding a question raised by Alderson (1984, p.1), "Is second-language reading a reading problem or a language problem?" The controversy focuses on two variables in L2 reading—— L1 literacy and L2 proficiency, specifically on which is a possible predictor for L2 reading ability. Bernhardt (2005, 2010) holds that, since there is mutual compensation between L1 literacy and L2 proficiency in L2 reading processing, both are indispensable in L2 reading, and she further proposes the Compensatory Model of L2 reading. As the only explanatory L2 reading model in the extant literature, the Compensatory Model includes different variables in L2 reading with the emphasis on L1 literacy and L2 proficiency. Nonetheless, besides L1 literacy and L2 proficiency, as McNail (2012) argues, reading strategy is a strong predictor of L2 reading ability.

The application of strategies is valuable in solving problems in reading and cultivating comprehension. It is held that reading strategies used in L2 reading are

likely to be similar to those in L1 reading, and more proficient readers differ from those who are less proficient in the use of reading strategy (Hudson, 2007). To the interest of both researchers and classroom practitioners, reading strategies can be taught directly and help to improve reading comprehension (Grabe, 2009; Paris, Wasik & Turner, 1991). There are various classifications of reading strategies in the bulk of L2 reading research, among which the 4-pronged Comprehension Strategy Framework, proposed by McNamara et al. (2007), provides a comprehensive explanation of the reading strategy categories. It is underlined in the framework that monitoring both comprehension and the use of reading strategies leads to successful reading.

By far, a substantial amount of research has been conducted on L2 reading strategies, but most of it has targeted English and its cognate languages. Compared with the mass of research on L2 English reading strategies, there are only a dozen studies on reading strategies specific to CSL reading at the discourse level. Everson & Ke (1997) started the investigation into CSL reading strategies by examining the reading processes of advanced CSL learners who were native English speakers. Most of the following studies were also conducted among subjects of relatively high CSL proficiency levels, but did not pay much attention to those with elementary CSL proficiency. There have been two main categories of subjects in previous research on CSL reading strategies: one group was comprized of Korean and Japanese learners whose L1 and cultural background were similar to Chinese; the other was represented by English-speaking learners of CSL whose L1 and cultural background were significantly different from Chinese. But there has been few study comparing the use of CSL reading strategies among learners of different L1 backgrounds.

1.3 Purpose of the present study and potential significance

Focusing on CSL reading at the discourse level, the present study aimed to investigate: (1) the application of CSL reading strategies by adult learners when reading Chinese texts; (2) possible correlation between learners' use of reading strategies and overall CSL proficiency; (3) possible correlation between learners' use of reading strategies and L1 literacy background; and (4) potential effects of using CSL reading strategies on CSL reading performance.

It is anticipated that this study will provide both theoretical and practical implications in L2 reading theory development, CSL reading instruction and future research. The purpose of the present study was to fill the gap of CSL reading research by investigating CSL reading strategies applied by learners of various CSL proficiency levels and L1 literacy backgrounds. It was also anticipated that findings related to the relationship between reading strategies, overall CSL proficiency and L1 literacy background in CSL reading would reveal the influence of different variables in the process of reading Chinese at the discourse level. In addition, it was intended that the potential relationship between reading strategies and CSL reading performance would provide implications for CSL teachers and curriculum developers to improve CSL reading instruction.

1.4 Organization of the remaining chapters

There are five more chapters in this thesis. Chapter 2 first introduces theories of reading, especially L2 reading. The scope is then narrowed down to reading strategies, reviewing previous research about CSL reading strategies. Chapter 3 presents the research questions of the present study and describes the research

methodology, including participants, instruments, research procedures as well as the method of data analysis. Chapter 4 illustrates findings with some brief explanations. Further discussion is presented in Chapter 5, examining the interrelationship of CSL reading strategies, CSL proficiency level, L1 literacy background, and CSL reading performance. Last, the conclusions and theoretical and pedagogical implications are drawn in Chapter 6, along with a discussion of the limitations of this study.

1.5 Definition of terms

There are a few key terms in need of clarification in this thesis. Relevant definitions are as follows:

L1 refers to the first language. It is not equal to mother tongue. Instead, L1 is the dominant language, both oral and written, used in the daily life of participants in this research.

L2 is short for second language. A broad definition for L2 is any language that readers learn other than their L1. In the present study, L2 refers to the language learnt in a country where it is spoken, as opposed to a *foreign language*, which is not used widely in the learners' immediate social context.

CSL means Chinese as a second language. This study examines CSL reading, which is reading Chinese as a second language.

Adult learner is a term used to distinguish from the children learner. Adult learners in this study are CSL learners who are physically and mentally mature, aged between eighteen and thirteen-one.

Reading strategies are actions performed consciously by readers to achieve their goals in reading.

Chapter 2 Literature Review

2.1 Overview

In order to illustrate the theoretical framework of CSL reading strategy in the present study, a review of literature is presented in this chapter. It embarks in Section 2.2, depicting the theoretical development of L1 reading, which views reading as a cognitive process. Section 2.3 then distinguishes L2 reading from L1 reading and introduces issues and theories regarding L2 reading. Section 2.4 focuses on the definition and taxonomy of reading strategies in both L1 and L2 contexts. Since the majority of previous research attends to reading English, a review of studies on CSL reading, with elaboration of CSL reading strategies, is provided in Section 2.5. Section 2.6 then presents the theoretical framework of this research. Section 2.7 provides the rationale for the research methodology adopted in this study through descriptions of two research methods, verbal report and free recall. Finally, the review of literature is summarized in Section 2.8.

2.2 Reading as a cognitive process

Reading is the process of extracting or constructing meaning from written or printed language (Urquhart & Weir, 1998). Reading activities are cognitive processes resembling problem-solving tasks, for example answering mathematics questions (Bernhardt, 1991). Reading is characterized, however, by its demands on language competence, and the interaction between the reader and the text, different linguistic information as well as multiple subprocesses. Understanding the

processes of reading is a crucial step in probing the nature of reading (Alderson, 2000). As a synthesis of reading processes, a wide variety of reading models has been constructed in the extant reading research.

2.2.1 Reading models

Model refers to a representation of the psychological processes involved in reading comprehension (Goldman, Golden & van den Broek, 2007, p.34). Models are useful for describing certain processes in that they can support theories of reading, explain what reading involves and how reading works and, more importantly, they can be tested by experimental studies (Everson & Ke, 1997).

Three models developed between the 1960s and 1970s have been depicted the most widely in the literature, that is, bottom-up, top-down and interactive models. But they have all been criticized as being too generalized and lacking empirical support (Grabe, 2009). In the past two decades, with the development of theoretical and empirical research in reading, a considerable number of models specific to reading comprehension have been proposed, ranging from lower-level processing, say vocabulary understanding (e.g., the Lexical Quality Model, Perfetti & Hart, 2002), to higher-level processing, say text/discourse comprehension (e.g., the Construction-Integration Model, Kintch, 1998, and the Constructionist Model, Graesser & colleagues, 1994, 1997, 2001, 2007, 2012 in press). It is beyond the scope of the present study to provide a thorough review of all reading models. Given that our purpose was to investigate reading strategies used in text comprehension, the following will first introduce bottom-up, top-down and interactive models from a general point of view, then elaborate on the

Construction-Integration Model and the Constructionist Model, both of which are targeting text comprehension while involving the use of reading strategies.

2.2.1.1 Bottom-up, top-down and interactive models

Bottom-up and top-down models have been deemed as a dichotomy in the description of reading processes. Bottom-up models were first credited to Gough (1972), while top-down models were recorded in the extant literature as having been proposed by Goodman (1967) and Smith (1971).

Bottom-up models assume that readers process texts in a sequential order, which is arranged according to the size of text units, from letters, words, phrases, clauses to sentences. Readers will first recognize graphic stimuli, then relate to pronunciation, recognize the word, extract meanings, and so on. Each subprocess is built upon a prior one, and will not begin until the prior subprocess is over.

Top-down models, on the other hand, posit that the reader plays an important role in text processing, and they do not need to read every word in the text. Goodman (1967) considers reading as a "psychological guessing game", in which readers are expected to bring hypotheses to bear on the text and use the text information to confirm or deny their hypotheses. Although Goodman is often associated as a top-down-model proponent, Smith (1971) is the more appropriate representative of top-down models (as cite in Urquhart & Weir, 1998). Smith's model has been influenced heavily by schema theories, which hold that readers activate relevant knowledge during reading and map incoming information onto their existing knowledge (Alderson, 2000). Smith (1971) presented his understanding

of reading by emphasizing two major distinctions, learning to read versus fluent reading, and word identification versus reading for comprehension. It is claimed that, in the actual processes of fluent reading, word identification is not as important as reading for meaning, and what really matter are the readers' language knowledge and knowledge of text context. For example, rather than identifying a word in a letter-by-letter manner, skilled readers can understand the word depending on the words around it or on prior knowledge.

To summarize thus far, bottom-up models are text-driven whereas top-down models are reader-driven. However, it is impossible to find a reader to be either an exclusively bottom-up reader or a strictly top-down one (Grabe, 2009). Notably, despite the fact that Goodman's model is often categorized as a top-down-model, he himself said that, "Readers utilize not one, but three kinds of information [, graphic, syntactic and semantic information,] simultaneously" (Goodman, 1982, p.38), which resembles the characteristics of interactive models.

The establishment of interactive models can be attributed to Rumelhart (1977) and Stanovich (1980). In Rumelhart's (1977) model, it is assumed that (1) graphemic information was first saved in a "visual information store (VIS)"; (2) a feature extraction device then operates on VIS and transits the information to a "pattern synthesizer" that receives orthographic, lexical, syntactic, semantic and pragmatic information; and (3) the "pattern synthesizer" uses all information to interpret the graphemic input continuously and simultaneously. Rumelhart (1977) viewed reading process as the product of a continuous and simultaneous application of various knowledge sources. Stanovich (1980), from a different stand, proposed the interactive-compensatory model. The idea is that the weakness in one

knowledge source will be compensated by the strengths in others. For instance, when readers encounter difficulties in word recognition, they will utilize context clues to facilitate comprehension.

Interactive models have been described in the literature as comparatively more satisfactory in depicting reading processes than bottom-up and top-down models. Nonetheless, interactive models are weak in predicting results in advance, in that too many sorts of interaction can be predicted, including the interaction between the reader and the text, among different reading skills, or between bottom-up processes and top-down processes (Urquhart & Weir, 1998).

2.2.1.2 The Construction-Integration (C-I) Model

One of the most popular and comprehensive reading models in the past two decades is the Construction-Integration (C-I) Model (Graesser, 2007; Graesser & Whitten, 2000). Built upon van Dijk and Kintsch's (1983) postulations about discourse comprehension, the C-I Model was proposed first by Kintsch in 1988 and furnished in 1998. The C-I Model is aimed at investigating the processes of text comprehension. There are two major phases depicted in this model, namely construction and integration.

During the construction phase, readers are engaged in bottom-up processing of text information, including recognizing words, parsing sentences, forming propositions, and drawing inferences from prior text contexts. The term *proposition* here refers to the basic relational meaning units in text; e.g., predicate-argument structures (Kintsch, 1998, p.37). The introduction of *proposition* in the C-I Model

is related to the development of the reader's mental representation constructed during text comprehension. First, there is the surface level, at which it is assumed that readers remember the exact words and the syntactic structure of a sentence. But the readers' memory is limited in its capacity as there is more incoming text information. Then, there is the textbase level. Textbase is represented by propositions constructed to preserve meanings instead of exact words in the text. When a reader understands a passage, a propositional structure is stored in the memory.

The text-base representation, however, might not be very consistent with the reader's prior knowledge structure. For example, a word can be attached with different meanings, but not all of them are associated with the previously built propositional text-base or the reader's prior knowledge. This problem is solved in the integration phase. One word meaning that is related strongly to the propositional text-base or other concepts is activated, whereas others that are weak in associations with the reader's prior knowledge are purged out. In this fashion, a coherent meaning representation of text comprehension is built, which is labeled as a "situation model" or "mental model". A situation model represents the content or events that a text describes¹. The construction of a situation model is based on a network combining the text input as well as the reader's relevant knowledge.

The C-I Model delineates the processes of text comprehension in two phases. It is supported by empirical findings from research on different subjects (e.g., good readers versus poor readers) reading different texts (e.g., stories versus expository texts) by different research methods (e.g., recall, question answering, summarization, etc.) (Graesser & Whitten, 2000). The C-I model also provides an explanation of

¹ The meaning of *model* in "situation model" thus differs from that in "reading models".

reading strategies that help in the construction of propositions, for instance readers applying generalization strategies to delete micro-propositions and generate a single macro-proposition (Pressley & Afflerbach, 1995). Nevertheless, the C-I model does not count for most other strategies that readers use. A strategy is simply a piece of knowledge activated and recruited during the construction-integration phases; in other words, reading strategies are not built explicitly into the C-I Model (Graesser, 2007).

2.2.1.3 Constructionist Model

While strategies have no special status in the C-I Model, reading strategies play a predominant role in the Constructionist Model. The Constructionist Model was first proposed by Graesser, Singer & Trabasso (1994) to investigate narrative text comprehension. Later it was expanded to studies on discourse comprehension in a broader sense, investigating the processing of both spoken and written passages of different genres (Graesser, 2007; Graesser, Millies & Zwaan, 1997). As in the case of the CI model, the Constructionist Model has been tested and supported in terms of reading times, inference generation, recall of text information, and summarization (Graesser & Forsyth, 2012, in press).

The Constructionist Model is characterized by its principle of *searching after meaning*. According to this principle, there are three assumptions, reader goal, coherence, and explanation.

In the reader goal assumption, it is proposed that readers pay attention to the text information that addresses their goals. Therefore, readers apply distinct

approaches when reading different texts. It is pointed out that, driven by goals, meaning representation is attained at a deep level (e.g., situational model) rather than a shallow one (e.g., exact words and syntactic structures of sentences). The coherence assumption states that the representation derived from the text is supposed to be coherent at both local level (such as short clauses) and global level (such as chunks built upon clauses). When good readers encounter disconnection, they will make efforts to fill in the gap. According to the explanation assumption, readers are expected to explain why actions, events, and states occur in the text. Abiding by the three principles, the use of reading strategies is indispensable in the Constructionist Model.

As a text comprehension model, the Construction Model is the first of its kind that has distributed considerable attention to the use of reading strategies as part of readers' comprehension abilities. In this model, a reading strategy is viewed as "a cognitive or behavioral action that is enacted under particular contextual conditions, with the goal of improving some aspect of comprehension" (Grasser, 2007, p.6). Grasser & Forsyth (2012, in press) posits that comprehension is not always fluent and fast, therefore the employment of strategies is particularly important to achieve comprehension. It is held that the use of coherence and explanation strategies are considered as characteristics of good comprehension, and this is well supported by research on Self-Explanation Reading Training (McNamara, 2004).

2.2.2 Summary of reading theories

Reading is a complex cognitive process. Reading models are constructed to approximate the actual process of reading. Bottom-up, top-down and interactive

models provide the generalization of reading processes. However, they are too simple, lacking detail and empirical support. Two popular models specific to text comprehension have been discussed, namely the C-I Model and the Constructionist model. The C-I Model states that reading comprehension is driven by two phases, construction and integration. Multi-levels of representation in text comprehension are included in the C-I model, such as surface representation, textbase representation and situation model. Reading strategies exist in the C-I model, but detailed explanation is not available. In contrast, the Constructionist model is strategy-driven. Under the principle of searching after meaning, it is assumed that readers try to construct a meaning representation that is relevant to their goals, coherent at both local and global levels, and explains the content in the texts. Notably, all reading models introduced are targeted toward L1 reading.

2.3 L2 reading

L2 reading is often misconceptualized as a duplicated version of L1 reading (Bernhardt, 1991). L2 reading is undeniably influenced by L1 reading experience. Nevertheless, the L2 reading process is different and more complex than that of L1 due to the influence of L1 literacy, L2 proficiency as well as other components on L2 reading performance. The following sections compare L2 reading with L1 reading, discuss the controversy in L2 reading research, and introduce a model specific to L2 reading.

2.3.1 L2 reading VS L1 reading

Distinct from the L1 reading process, which involves only one language system, the L2 reading process deals with a dual-language system, i.e. readers' L1 and L2 (Koda, 2005). When readers are engaged in the L2 reading tasks, there are continual interactions between their L1 and L2; they need to adjust their processes continually to accommodate different demands imposed by each language. Other than L1-L2 interaction, there are other variables involved in L2 reading, for instance, sociocultural reader variables and sociocultural text variables (Bernhardt, 2005). L2 readers have to face a different culture that is viewed as commonplace by L1 readers.

A further comparison between L1 reading and L2 reading was made by Bernhardt (2010) as a response to the report of the US National Reading Panel (NICHD, 2000). Heavily L1-oriented, the report stated that all effective reading instruction should include five components: phonemic awareness, phonics, fluency, vocabulary, and comprehension. Bernhardt (2010) found that, although the report was not oriented to L2 reading, it did evoke reflections on issues in L2 reading. First, since many competent readers maintain non-native accents, perfect or native-like accuracy in phonemic and phonics is not a must in L2 reading. Second, the acquisition of vocabulary differs between L1 and L2 readers. L1 readers just need to link the words in written forms with those already in their oral/aural lexicon and enhance their lexicon with new concepts. But for L2 readers, it is more complicated. Some L2 readers need to connect a new oral/aural representation of a concept that already exists in their L1. Many other L2 readers need to learn both the concept and the new oral/aural word in both L2 and L1. The final difference lies in comprehension. There are more levels of processes in L2 reading than L1,

and the interaction between L1 and L2 can sometimes be supportive, but sometimes inhibitive for L2 comprehension.

To sum up, in contrast to the simple view of L2 reading as similar to L1 reading, “L2 reading is cross-linguistic and, thus, inherently more complex than L1 reading” (Koda, 2007, p.1).

2.3.2 The controversial issue in L2 reading

Multiple variables in L2 reading differentiate itself from L1 reading. In L2 reading research, there is an extensive debate on the effects of two variables—— L1 literacy and L2 proficiency—— on L2 reading ability. There is concern related to the question raised by Alderson (1984, p.1), “Is second-language reading a reading problem or a language problem?” There are three major hypotheses in the literature addressing this issue, including the Developmental Interdependence Hypothesis (Cummins, 1979, 1981, 1991), the Short-circuit Hypothesis or Language Threshold Hypothesis (Clarke, 1980), and the Restructuring Hypothesis (McLaughlin, 1987, 1990).

Cummins (1979, 1981, 1991) proposed a common underlying proficiency for bilingual language development, labeled as the Developmental Interdependence Hypothesis (or Common Underlying Proficiency Hypothesis). This theory states that academic literacy skills, once developed well in L1, will automatically be available for L2 academic purposes. The Developmental Interdependence Hypothesis has been criticized for the assumptions that everything supporting reading development transfers and that L2 language proficiency is only of secondary

importance (Grabe, 2009). However, L1 language knowledge do not always transfer well, for example, L1 vocabulary knowledge generally does not transfer (except for cognates), and syntactic knowledge usually does not transfer positively (Verhoeven, 1999).

On the other hand, the Language Threshold Hypothesis (Clarke, 1980) asserts that L2 readers must develop reasonable language proficiency in the L2 before L1 reading skills are likely to transfer to facilitate L2 reading. A number of studies have provided persuasive evidence for the Language Threshold Hypothesis (e.g., Clarke, 1979; Carrell, 1991; Bernhardt & Kamil, 1995; Lee & Schallert, 1997; Yamashita, 2002), but results may depend upon reader's level of proficiency, and upon what particular reading task (with respect to assessment methods and text genres) is involved, and whether readers are in the foreign language context or L2 context (Hudson, 2007). And there is short of description about the nature of the language ability threshold in L2 reading and how it interacts with different tasks and readers in the extant literature.

From a different point of view, McLaughlin (1987) proposed the Restructuring Hypothesis, which claimed that L2 readers have to go through a process that involves the reorganization and adoption of new strategies in the development of L2 reading. McLaughlin (1987) found that although advanced learners performed better than beginners in cloze tests, they were not able to use the decoding skills in reading, and they made as many meaningless errors as did beginners, which is against the traditional postulation that skilled readers are superior to less skilled readers because they have well-automated decoding skills and are more capable of using syntactic and semantic information to achieve reading comprehension. It was thus predicted

that L2 readers developed a different internal representational framework from L1 readers (McLaughlin, 1990). L2 readers' performance may follow a U-shaped curve, declining as more complex internal representations replace less complex ones, and increasing again as reading skills become expertise.

The three hypotheses emphasize the effect of either L1 literacy or L2 proficiency on L2 reading ability. After a critical review of the findings in L2 reading research, Bernhardt (2010) has come to a conclusion that both factors, that is both L1 literacy and L2 proficiency, have key influences on L2 reading performance. Yet, the question is how. And this is investigated throughout the process of constructing the Compensatory Model of L2 reading.

2.3.3 The Compensatory Model of L2 reading

Compared with the array of models developed from L1 reading, there is only one model that addresses L2 reading, i.e., the Compensatory Model of L2 reading (henceforth, Compensatory Model), which has undergone extension and revision by Bernhardt in 1986, 1991, 2000, 2005, and 2010.

Bernhardt (1986) first proposed a model (Figure 2.1) based on Coady's (1979) view of L2 reading as an interactive process. Coady (1979) held that L2 reading consisted of three interactive elements: conceptual abilities, background knowledge and process strategies, but no elements related to language feature were included. Considering findings from recall protocol analysis, Bernhardt (1986) expanded Coady's model and included more elements: phonemic/graphemic features, prior knowledge, metacognition, syntactic feature recognition, word recognition, and

intratextual perceptions. All variables interact with each other in the reading process.

Figure 2.1. Bernhardt 's (1986) Model of L2 Reading Generated from Recall

Protocol Analysis

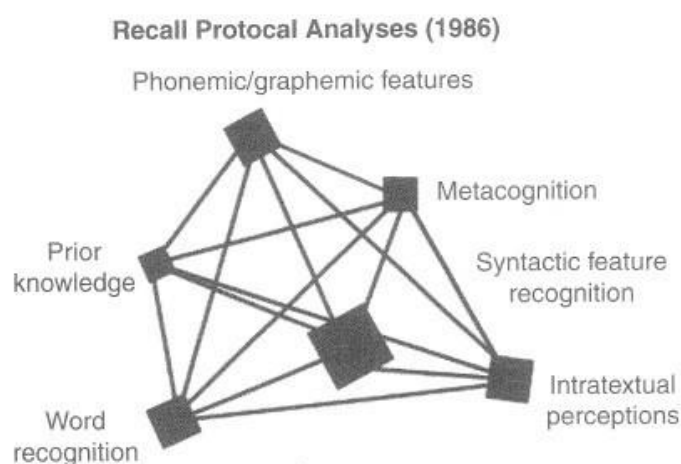


Figure 2.3. A model of second-language reading generated through recall protocol analysis (1986). Adapted from *Understanding advanced second-language reading*, by E.B. Bernhardt, 2010, p.30. Copyright 2010 by Routledge, Taylor & Francis.

Later in 1991, a more refined model (Figure 2.2.) was developed from an extensive data base generated from recall protocols by designating readers of diverse language backgrounds and learning time to reading texts of different genres (expository and narrative). This model describes factors that contribute to the development of L2 reading proficiency. It is composed of six factors; three are language-based (word recognition, phonemic/graphemic features, and syntactic feature recognition), two are knowledge-driven (background knowledge, and intratextual perceptions), and the sixth metacognition (the extent to which the reader

is thinking about what and how well he is reading), a factor labeled as an individual learner characteristic.

Figure 2.2. Theoretical Distribution of Reading Factors by Bernhardt (1991)

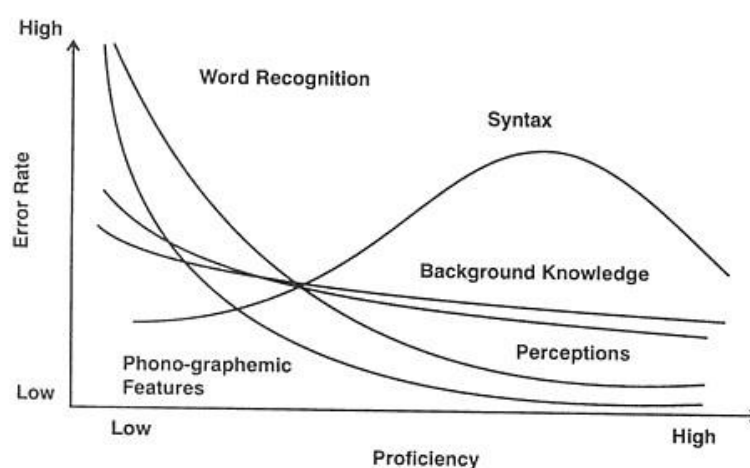


Figure 5.6. Theoretical Distribution of Factors in Second-language Reading. Adapted from “*Reading development in a second language: Theoretical, empirical, and classroom perspectives*,” by E.B. Bernhardt, 1991, p.169. Copyright 1991 by Ablex Pub. Corp.

Bernhardt (2000) stated that the 1991 model only portrays a snapshot of L2 reading at a particular time. Thus, an alternative conceptualization was proposed to portrait the comprehension development related with language proficiency, time in learning and time in instruction. As shown in Figure 2.3, L1 literacy and L2 grammatical knowledge are two major components that explain L2 reading ability. Based on similar findings from research by Bossers (1991), Lee and Schallert (1997), Carrell (1991), Brisbois (1995), and Bernhardt and Kamil (1995), Bernhardt (2000) reported that L1 literacy and L2 grammatical knowledge account for 50% of the variance in L2 reading performance, but the rest of 50% potential variance was left unexplained.

Figure 2.3. Revised Statement of a Theoretical Distribution of Reading Factors

by Bernhardt (2000)

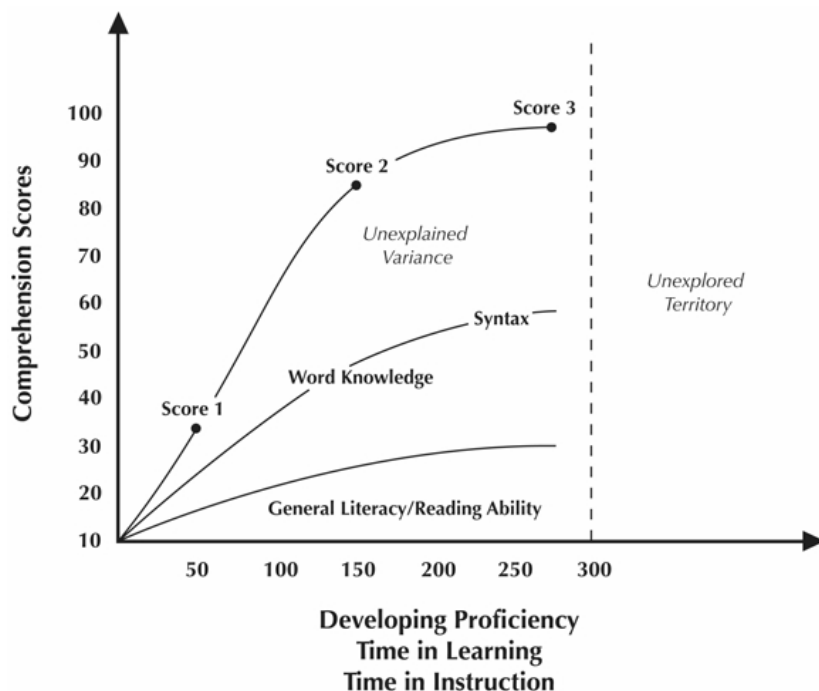


Figure 41.2. Revised Statement of A Theoretical Distribution of Reading Factors. Adapted from “Second-language reading as a case study of reading scholarship in the 20th century,” by E.B. Bernhardt, 2000. In M. L. Kamil, P. B. Mosenthal, P. D. Pearson & R. Barr (Eds.), *Handbook of reading research, Vol.3*, p.803. Copyright 2000 by L. Erlbaum Assoc..

In 2005, Bernhardt presented a synthesized model (Figure 2.4) with three dimensions: L1 literacy, L2 language knowledge, and other variances. Further details were provided for these three dimensions. L1 literacy refers to L1 reading ability to map letters to sound, to organize words and sentences, and so on. L2 language knowledge consists of vocabulary, grammar, cognates, distance between L1 and L2, etc. This model anticipates that L2 readers have at least some L2 literacy foundation. The unexplained variables contain comprehension strategies and individual reader variables such as engagement with reading, motivation, prior

knowledge and interest. The 2005 Compensatory Model was an adaptation from Stanovich's (1980) Interactive-compensatory Model, where knowledge sources at all levels interact simultaneously and continuously, and where a lower-level deficit can be supported by higher-level knowledge sources (Bernhardt, 2005). The unexplained variables in the 2005 Compensatory Model interact during L2 reading processing, and compensate for any break-down in L2 reading comprehension.

Figure 2.4. A Compensatory Model of L2 Reading (2005)

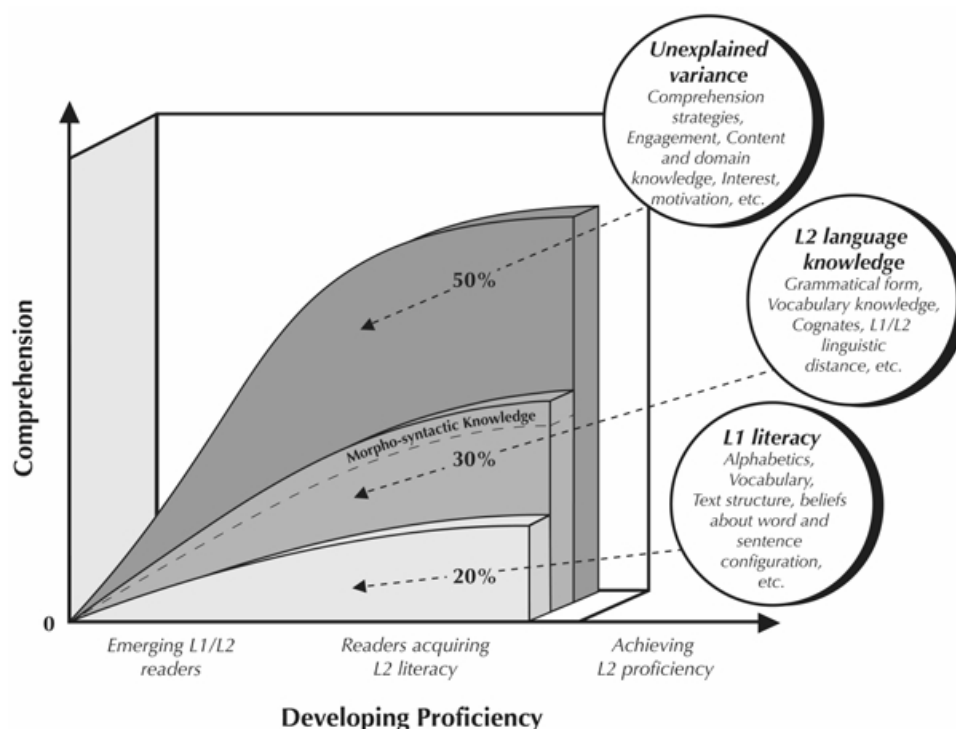


Figure 2. A Compensatory Model of Second Language Reading. From “Progress and procrastination of second-language reading,” by E.B. Bernhardt, 2005, *Annual Review of Applied Linguistics*, 25, p.140. Copyright 2005 by Cambridge University Press.

To enhance the explanatory power of the Compensatory Model, Bernhardt (2010) revised the model by emphasizing the interaction between different sources in

L2 reading. As in the 2005 version, the revised Compensatory Model consists of sources at multiple layers. L2 readers rely on sources at multiple layers and use whichever source whenever necessary. All layers are important, and there is no priority in resorting to any layer. Any source in a certain layer can support another source in a different layer. It is easier to get access to knowledge sources as L2 proficiency increases.

Figure 2.5. A Compensatory Model of L2 Reading (revised, 2010)

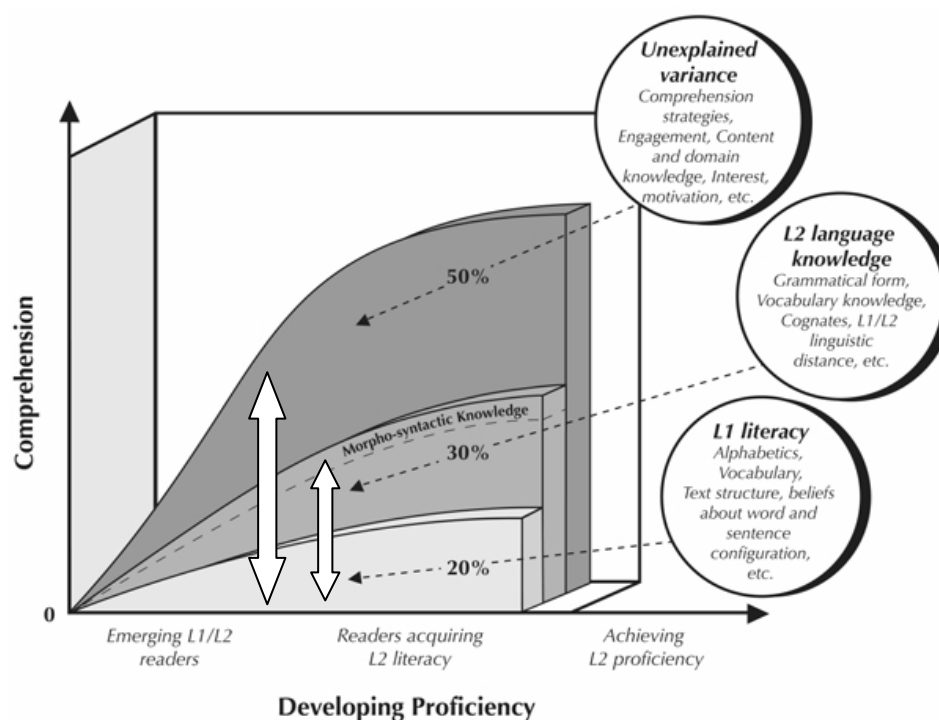


Figure 2.7. A Compensatory Model of Second Language Reading (revised). Adapted from *Understanding advanced second-language reading*, by E.B. Bernhardt, 2010, p.38. Copyright 2010 by Routledge, Taylor & Francis.

2.3.4 Extending the Compensatory Model

Expanded from Stanovich's (1980) Interactive-compensatory Model, a L1

reading model, the Compensatory Model by Bernhardt (2010) is the only explanatory model of L2 reading in the extant literature. This model explores the unique nature of L2 reading that is not captured in L1-based models. Nonetheless, after consulting large amounts of findings in the L2 reading literature, McNail (2012) proposed that the Compensatory Model should be extended in two major facets. One is about the role of L1 literacy and L2 language knowledge in L2 reading. In Bernhardt's (2010) model, L1 literacy and L2 language knowledge are two major predictors for L2 reading performance, explaining 20% and 30% of the variance in L2 reading performance respectively. They support each other in L2 reading processing, but L2 language proficiency is a stronger predictor of L2 reading performance than L1 literacy. McNail (2012) holds a different view, based on an extensive review of L2 reading research (e.g., Bossers, 1991; Carrell, 1991; Fecteau, 1999; Lee and Schallert, 1997; Pichette et al., 2003; Schoonen et al., 1998; van Gelderen et al., 2007). Evidence seems to suggest that the correlation between L1 reading and L2 reading strengthens as L2 proficiency increases, but L1 literacy is a stronger predictor than L2 Language knowledge for learners with high L2 proficiency.

McNail (2012) also proposed to expand the Compensatory Model with two more predictors, strategic knowledge and background knowledge. In the Compensatory Model, the unexplained 50% variance is contributed by components such as comprehension strategies, motivation, interest, domain knowledge and so forth. They are only viewed as compensatory factors in L2 reading, and no detailed explanation was provided in the Compensatory Model. McNail (2012) argued that theoretical and empirical exploration indicates that strategic knowledge and background knowledge are two strong predictors of L2 reading performance. The

former is critical to achieve coherent comprehension according to the Constructionist Model, while the latter is important to construct text representation as depicted in the C-I Model. Empirical findings reveal that strategic knowledge explains between 11% and 72% of L2 reading performance, whereas background knowledge accounts for up to 31%. But there is some overlap between the two predictors according to McNail's (2012) definitions. Strategic knowledge refers to conscious cognitive and metacognitive mental actions that readers enact in comprehension processes (p.5), while background knowledge consists of the domain, topical, or cultural knowledge readers bring to texts (p.7). As acknowledged by McNeil (2012), background knowledge was found to be used strategically in L2 reading; when applied consciously to construct meaning, it can be included in the strategic knowledge. In this light, it is necessary to clarify what strategic knowledge encompasses in L2 reading.

2.4 Reading strategies

Strategies play an important role in fostering reading and thinking (Paris, Wasik & Turner, 1991): The application of strategies is not limited to reading comprehension, it can also enhance learning throughout the curriculum. Reading strategies can be taught directly by teachers in the classroom.

Since studies in L2 reading research are influenced greatly by L1 research, we first attempt to define reading strategies, and then introduce classifications of reading strategies in both L1 and L2 contexts. Finally, a review is conducted about findings pertinent to the use of reading strategies in L1 and L2 reading.

2.4.1 Strategy VS skill

Strategy is often used interchangeably with *skill* in the literature. As stated by Paris, Wasik & Turner (1991, p.611), “An emerging skill can become a strategy when it is used intentionally. Likewise, a strategy can ‘go underground’... and become a skill. Indeed, strategies are more efficient and developmentally advanced when they become generated and applied automatically as skills.” In other words, strategies and skills are connected in that the application of reading strategies can be automated with practice, and become skills.

On the other hand, a strategy is different from a skill. Dole, Duffy, Roehlen & Pearson (1991) identified the differences in three aspects: intentionality, cognitive sophistication, and flexibility. First, strategies are initiated intentionally and consciously by the reader, whereas skills are automatic routines. Second, the application of reading strategies reflects the reader’s metacognition. Good readers command specific knowledge about reading and how to accomplish reading tasks. Skills, in contrast, only involve lower-levels of thinking and learning. Finally, good readers who apply different strategies will keep monitoring the effectiveness of their reading and adjusting their strategies in different reading tasks.

Different definitions of reading strategies have been mentioned in the literature. Cohen (1986) referred to reading strategies as "mental processes that readers consciously choose to use in accomplishing reading tasks" (p.133). Barnett (1988) stated that reading strategies are the mental operations involved when readers approach texts effectively and make sense of what they read. In the Constructionist Model, reading strategies are viewed as cognitive actions that are performed in accordance with reading contexts so as to achieve comprehension (Graesser, 2007).

The common position is that reading strategies are actions performed consciously by readers during reading processing to achieve a goal, whether it be getting the general idea of a text or enhancing subject knowledge.

2.4.2 Classifications of reading strategies

There is a variety of reading strategies in a competent reader's repertoire. Research into reading strategies is derived partly from the study of *learning strategies* (Alderson, 2000; Bernhardt, 2010). This section first introduces the taxonomy of learning strategies, and then specifies the classifications of reading strategies in both L1 reading and L2 reading.

2.4.2.1 Learning strategies

The early research on reading strategies usually applied the framework of learning strategies in a general manner (e.g., Rubin, 1987; Chamot & O'Malley, 1990; Oxford, 1990). Rubin (1987) described four types of learning strategies: cognitive learning strategies; metacognitive learning strategies; communication strategies; and social strategies. Chamot & O'Malley's (1990) classification resembles Rubin's (1987), including three types: cognitive, metacognitive, social and affective strategies. Oxford (1990), on the other hand, divided learning strategies into two types: direct (memory, cognitive, and compensation strategies) and indirect (metacognitive, affective, and social strategies).

As shown in Table 2.1, metacognitive strategies and cognitive strategies are shared among three positions. Metacognitive strategies are described as those that

involve thinking, knowing, planning, monitoring and self-evaluating of the learning process, whereas cognitive strategies refer to those that involve mental manipulation or transformation of materials to enhance comprehension (Chamot & O'Malley 1990).

Table 2.1.

Classifications of Learning Strategies

Rubin (1987)	Cognitive learning strategies Metacognitive learning strategies Communication strategies Social strategies
Oxford (1990)	Direct strategies : Memory, cognitive, and compensation strategies Indirect strategies: Metacognitive, affective, and social strategies
Chamot and O'Malley(1990)	Cognitive strategies Metacognitive strategies Social and affective strategies

The dichotomy between metacognitive and cognitive strategies, however, is open to criticism. Monitoring comprehension or repairing miscomprehension are not, themselves, specific strategies; instead, a number of specific strategies can be used to monitor comprehension or repair miscomprehension, such as rethinking a previous reference (Grabe, 2009). Bialystok (2001, 2002) drew a distinction between metacognitive awareness and metacognitive control for understanding and

using strategies, rather than proposing distinct types of metacognitive strategies. Therefore, there are no distinct metacognitive, as opposed to cognitive strategies, but there are different levels of metacognitive awareness that can direct strategy use consciously in order to support the reader's goals.

Another issue with applying the framework of learning strategies occurs in the context of L2 learning; there should be a distinction between strategies that make learning more effective and strategies that improve comprehension (Singhal, 2001). In the past two decades, considerable lists/inventories of specific reading strategies have been developed in both L1 and L2 contexts with different taxonomies (e.g., Anderson, 1991; Block, 1986; Carrell, 1989; Mokhtari & Sheorey, 2002; Paris, Wasik, and Turner, 1991).

2.4.2.2 L1 reading strategies

Based on the development of L1 reading in children, Paris, Wasik & Turner (1991) have described strategies that L1 readers might adopt before, during and after reading.

Before reading, readers make preparation by skimming text, looking at pictures and examining titles and subheadings. During reading, the main purpose is to construct meaning, which is achieved by identifying the main idea, making inferences and inspecting the text back and forth. When completing reading, readers use strategies to review and reflect what is read, including checking one's plan, monitoring meaning, making inferences again, and summarizing text information.

Paris, Wasik & Turner's (1991) classification is limited to common reading strategies that promote comprehension. Although they noted that the strategy of making inferences can be employed repeatedly during and after reading, they seem to have ignored that other strategies also take place at multiple stages of the reading processes, such as identifying the main idea and monitoring meaning (McNamara et al., 2007).

2.4.2.3 L2 reading strategies

In the L2 context, diverse classifications of reading strategies have been adopted for different research purposes (e.g., Anderson, 1991; Block, 1986; Carrell, 1989; Mokhtari & Sheorey, 2002).

In order to investigate the comprehension strategies used by ESL (English as a second language) students designated as non-proficient readers, Block (1986) divided strategies into two categories: general strategies versus local strategies. General strategies are those used to achieve and monitor comprehension, like recognizing text structure and correct reading behavior. Local strategies refer to those that are employed to process specific linguistic components such as re-reading and paraphrasing.

Anderson (1991), from a different point of view, aimed at examining individual differences in strategy use by adult L2 learners while engaged in two reading tasks, taking a standardized reading comprehension test *vis à vis* reading academic texts. There are five categories of reading strategies: supervising, supporting, paraphrasing, establishing text coherence and test taking.

Additional studies have concentrated on the role of readers' metacognition of strategic reading (e.g., Carrell, 1989; Mokhtari & Sheorey, 2002). Carrell (1989) developed a questionnaire to tap readers' metacognitive conceptualization about silent strategies in both L1 and L2 reading. Carrell's (1989) structure is composed of four aspects: confidence, repair, effectiveness, and difficulties. As a comparison, Mokhtari & Sheorey (2002) introduced an instrument, the Survey of Reading strategies (SORS), to measure adolescent and adult ESL students' metacognitive awareness and perceived use of reading strategies while reading academic materials. Adapted from Mokhtari & Richard (2002)'s Metacognitive Awareness of Reading Strategies Inventory (MARSI), the SORS consists of 30 items within three categories: global reading strategies, problem solving strategies, and support reading strategies.

2.4.3 The use of reading strategy in L1 and L2 reading

A major goal of classifying reading strategies is to investigate whether there is a difference in the use of reading strategies used by good and poor readers. Relevant findings in the past two decades, in both L1 and L2 contexts, have been summarized by Grabe (2009). It was found that, in fact, good readers and poor readers use the same types of strategies, but there are differences too: good readers use strategies more effectively than do poor readers; good readers have a repertoire of strategies in combination whereas poor readers tend to overuse single strategies; and good readers consciously adjust their use of reading strategies according to the difficulty levels of designated texts. A significant finding is that reading strategies can be taught effectively and reading-strategy instruction can help to improve a poor reader's comprehension.

In particular, findings in the L2 context were reviewed extensively by Hudson (2007) within three research foci: (1) the possible role of L1 reading experience in the use of L2 reading strategy; (2) the relationship between the use of reading strategies and L2 reading performance; and (3) the relationship between the type of strategies used and L2 reading proficiency. Evidence appears to show that: (1) Readers use similar strategies across languages. (2) There are no sets of strategies that are used uniquely by successful readers and sets of strategies that are used uniquely by unsuccessful readers. The same strategies are employed with differing levels of success. (3) The types of strategies that a reader applies are often somewhat idiosyncratic in that particular strategies used differ across individuals. However, in general, the more proficient readers appear to use more strategies than do those who are less proficient. Less proficient readers are not able to recognize the need to employ reading strategies to resolve problems encountered in texts or to use them appropriately in both L1 and L2 reading.

2.5 CSL reading strategies

It is worth noting that the majority of reading strategy research is derived from studies of the English language, hence critical theories of reading are based on cognate languages and are heavily western-oriented (Bernhardt, 2010; Grabe, 2009). A different perspective can be drawn from the following research on CSL reading, with an emphasis on the reading strategies applied by CSL learners of different L1 backgrounds.

2.5.1 An overview of reading Chinese

Reading Chinese is an arduous process for CSL learners, especially Western learners. One of the principal problems is due to the unique writing system of Chinese as opposed to Western languages like English. While written English is an alphabetic script that usually matches sounds to spelling, the Chinese script is considered as morphographic, with sound mapped onto the character at the morpheme level (Dew, 2007).

Unlike the alphabetic language, the basic units of written Chinese are characters, not words. Around 80% of modern Chinese characters are phonetic-logographic compounds (or phonetic compounds in short), each of which consists of at least two components: the phonetic radical (indicating the sound of the character), and the semantic radical (bearing the meaning of the character) (Chen, 1996; Li, 1977). Most radicals in the phonetic compounds are also characters in their own rights; the sublexical processing of these radicals thus plays an important role in the recognition of whole characters (Li, P., Li, H. T., Bates & Tzeng, 2006; Tsang & Chen, 2009; Zhou, Ye, Cheung & Chen, 2009). However, these clues are also not always consistent. The reliability and accuracy of the corresponding rule between pronunciation and phonetic radical has been examined by Yin (1991): of all the phonetic components used in Chinese, 36% represent the characters' sounds, 48% partially represent the sounds, and 16% do not represent the sounds at all (as cited in Chen, 1996). Previous studies have demonstrated that both regularity (i.e., whether the whole character is pronounced the same as its phonetic radical) and consistency (i.e., whether a set of characters having the same phonetic radical are pronounced the same) influence phonological activation and the naming speed of phonetic compounds (Fang, Horng & Tzeng, 1986; Zhou & Marslen-Wilson, 1999).

Reading Chinese is complicated further by the opaque nature of the Chinese word boundaries. In the Chinese language, a character is most likely to be a morpheme and monosyllabic (Hoosain, 1991), but the majority of Chinese words are formed by one or more characters, and around 80% of modern Chinese words are bi-morphemic according to Li (1977). A Chinese text is invariably written or printed with each individual character occupying a more or less uniform space, providing no additional space for syntactic word boundaries. Therefore, word segmentation can be a real challenge to CSL learners (Li, 1998): first, it is challenging for beginning learners to recognize characters automatically; second, they also lack the grammatical and linguistic knowledge that can help them to come up with a syntactic frame; and finally, their cultural knowledge is not sufficient enough to help them predict correctly.

Western learners also face difficulties in reading Chinese due to the linguistic distance between their L1 and Chinese at grammatical and syntactical levels. At the grammatical level, lacking inflectional morphology, Chinese does not have devices that indicate differences in tense, number, gender, or case, that is, grammatical functions and relations for sentence constituents are not linked by morphological associations (Li et al., 2006). At the syntactic level, like other languages, it is common to find subject-initial order in Chinese. But Chinese also involves a relatively free word order and a high degree of ellipsis. A sentence in Chinese can have null subjects or null objects against a given context.

Among the major problems faced by Western CSL learners, Chinese character has been a focus in the bulk of reading research. While Western learners have great difficulties induced by the Chinese writing system, learners such as Koreans and

Japanese seem to be able to overcome the problem within a shorter period. One reason might be the transfer of decoding strategies from L1 into CSL reading (Li, 2002). Yet, within the group of Western CSL learners, some are still capable of overcoming the linguistic distance between their L1 and Chinese, and become fluent readers of Chinese. It is of interest to investigate the reason behind this. As suggested by Walker (1984), after the first 150-300 hours of classroom instruction which establish a clear concept of the written language, reading Chinese is predominantly characterized by reading strategies. The use of reading strategies is necessary for proficient readers when reading challenging texts (Du, 2000; Koda, 2005). The following will explore the possible role of reading strategies in reading Chinese by reviewing research in both L1 and L2 contexts.

2.5.2 L1 Chinese reading strategies

The research foci of L1 Chinese reading strategies fall in two areas. One is to investigate the use of reading strategies among more and less proficient readers (e.g., Lau, 2002; Lau & Chan, 2003). The other is to draw comparisons about the reading strategies applied by bilingual readers of L1 Chinese and L2 English (e.g., Feng, 1991; Yau, 1997).

Consistent with findings from English reading research, poor readers are less capable of controlling and monitoring their use of reading strategies in L1 Chinese reading compared with good readers (Lau, 2002; Lau & Chan 2003). Lau (2002) investigated the effect of reading strategy instruction on reading performance. Within the taxonomy of before-, during- and after- reading strategies, L1 Chinese cognitive strategy instruction was provided to a group of academically low achievers

in a Hong Kong secondary school. It was found that the experimental group who received strategy instruction outperformed the controlled group with no instruction in reading tests, indicating that reading strategy instruction is helpful in improving the comprehension of less proficient Chinese readers.

Yau (1997) applied a different taxonomy to explore the reading strategy development in L1 Chinese and L2 English of Cantonese-speaking Chinese students in Chinese-medium primary and secondary schools in Hong Kong. Four categories of reading strategies were identified: literal meaning strategies (e.g., translating), elaborated meaning strategies (e.g., making inferences), personal response strategies (e.g., commenting the text), and fix-up strategies, which refer to decisions that readers make when they are faced with a break-down, such as correcting or giving up. It was found that, in reading Chinese texts, a clear developmental progression was from the use of literal meaning strategies to elaborated meaning strategies. The developmental progression in L2 English was a bit slower than L1 Chinese, and the number of literal meaning strategies remained relatively constant across grade levels. But overall, similar patterns of using reading strategies were found in reading L2 English and L1 Chinese. There was also some similarity in the taxonomy of reading strategies applied in L1 Chinese and L2 English, apart from translating and paraphrasing which were specific strategies applied in L2 English. Congruent with Cummins's (1979) postulation, Yau (1997) proposed that there is a universal reading competence, which leads to the transfer of L1 reading strategies into L2 reading in order to achieve reading comprehension.

If there is indeed a universal reading competence, then it will work in the reverse in CSL reading. In other words, the L1 reading strategies of CSL learners

will be expected to be transferred to CSL reading. However, there is discrepancy in research on CSL reading strategies.

2.5.3 CSL reading strategies

Previous studies of CSL reading strategies can be categorized into two groups according to the target subjects' L1 backgrounds. One group is represented by Korean and Japanese learners whose L1 and cultural backgrounds are close to Chinese (e.g., Li, 2002; Qian, 2006, 2007, 2010). The other group is represented by English-speaking learners of CSL whose L1 and cultural background are relatively distant from that of Chinese (e.g., Chang, 2010; Du, 2000; Everson & Ke, 1997; Lee, 1998, 2008; Li, 1998).

2.5.3.1 CSL reading strategies of Japanese and Korean learners

Through the use of a questionnaire survey, Li (2002) and Qian (2006, 2007, 2010) investigated the CSL reading strategies applied by Japanese and Korean learners.

Li (2002) administered a questionnaire survey to 60 intermediate Japanese CSL learners and compared the use of reading strategies between more successful and less successful CSL learners. Subjects were divided into two groups according to their HSK scores². The questionnaire was based on the theoretical framework of learning strategies proposed by Oxford (1990). 28 items, in three categories, were included in the questionnaire: cognitive strategies, metacognitive strategies, and

² HSK is short of *Hanyu Shuiping Kaoshi* (Chinese Proficiency Test).

social/affective strategies. The results showed that there was no distinction in the use of cognitive strategies between the two groups, but they differed in applying metacognitive strategies. Compared with less successful learners, the successful learners were more proficient at planning, monitoring and evaluating their own reading processes, and they kept using clues to make predictions about the text content. Successful learners were better at employing social/affective strategies by relating and reacting to the author's attitude. Less successful learners seemed to be passive when reading, with no special attention given to the cultural background and author's writing style of the reading materials.

Qian (2006, 2007) also launched an investigation by questionnaire survey, but she attempted to develop a reading strategy inventory specific to CSL (see Appendix 1). The inventory contained three parts: perception of reading, self-management strategies, and reading strategies. The third part included 21 specific strategies involved in reading. The questionnaire survey was administered to 92 intermediate and advanced Korean learners. The results revealed that the most frequently used reading strategies were predicting and using context. Qian held that predicting and using context are effective reading strategies for CSL learners, in that Chinese is a context-bound language, hence CSL learners need to guess and comprehend the text based on contexts. Adopting the same questionnaire, Qian (2010) conducted a survey among 50 Chinese junior secondary school students, and attempted to compare the application of reading strategies in L1 Chinese reading and CSL reading. Similarities were found between L1 Chinese reading and CSL reading. For instance, both L1 Chinese readers and Korean readers of CSL showed a preference for using the strategy of prediction. However, it was found that using the strategy of prediction was a predictor of high reading scores for L1 Chinese readers, but it was

not the same case for L2 Chinese readers. Qian (2010) posited that this was because the L1 Chinese readers applied strategies in a more appropriate and more effective manner. Although Korean readers also used the same strategy, the efficiency was limited by their L2 proficiency.

Different implications can be drawn from Li's (2002) and Qian's (2006, 2007, 2010) research. Consistent with English reading research, Li's (2002) study revealed that less and more successful readers showed no differences in the use of most strategies, except that the latter were stronger in planning, monitoring and evaluating their own reading processes. Qian (2010) also found a similar pattern between L1 Chinese readers and Korean CSL readers, but the efficiency of using reading strategies was weakened by the deficits in the Korean learners' CSL proficiency. The former seems to suggest the Developmental Interdependence Hypothesis (Cummins, 1979), whereas the latter supports the Language Threshold Hypothesis (Clarke, 1980).

2.5.3.2 CSL reading strategies of L1 English learners

Most studies of CSL/CFL (Chinese as a foreign language) reading strategies have focused on L1 English learners at the intermediate and advanced levels. One of the most frequently cited studies is Everson and Ke's (1997) inquiry into the reading strategies of five intermediate and two advanced CFL learners. They investigated the trend in strategy usage among intermediate and advanced learners by recall and verbal reports. It was found that intermediate learners spent most of their efforts at character or word level. They were able to apply useful information for comprehension, such as the title or repeated information. Intermediate learners also

reread text content. With stronger sophistication of character network and word recognition ability, advanced learners did not waste much energy at character or word level. Advanced learners were more confident and more effective in making predictions and inferences. They also used their background knowledge in reading comprehension. One reading strategy was shared between intermediate and advanced learners, that is, sounding out words. Everson and Ke asserted that the extensive use of speech recoding among CFL learners will remain a necessity long time into their reading experience, which is against the position of Bernhardt's (1991) L2 reading model, i.e., "problems in understanding related to sound and word-shape features quickly diminish as proficiency increases" (Everson & Ke, 1997, p. 16). Everson and Ke (1997) also suggested extending the Bernhardt's (1991) model by adding an orthographic layer of difficulty in the word recognition component for CFL learners, because the verbal report data illustrate that, due to their more profound knowledge of Chinese orthography, morphology, language and vocabulary, advanced learners are more effective in lower-level processing such as isolating meaningful word units in the text compared to intermediate learners, and it is impossible to recognize a word if the learner has difficulty in isolating it in the first place.

In another study by Du (2000), twelve CSL students from the International Chinese Language Program at the National Taiwan University participated in an experiment that investigated their reading processes. According to the entrance test scores, the students were divided into two groups: intermediate and advanced, each group consisting of six subjects. They were required to provide think-aloud reports during reading. Derived from the think-aloud protocols, reading strategies were classified into two types: global and local (adapted from Block, 1986). The results

showed that there was no significantly different use of reading strategies between intermediate and advanced students, and that all students employed local strategies, such as word recognition and translation Chinese into English, more frequently than they used global strategies. This is congruent with Everson and Ke's (1997) postulation that the use of local strategies related to decoding will be maintained in CSL reading regardless of the learners' CSL proficiency levels.

Studies by Everson & Ke (1997) and Du (2000) explored the possible relationship between the application of reading strategies and CSL proficiency level. Lee (1998), instead, examined the potential influence of text genres on the application of reading strategies. Lee (1998) conducted a study with eight American CFL learners, who were asked to process both narrative and argumentative texts. Through observations, interviews, questionnaires, think-aloud procedures and retelling, it was found that there was predominant use of *unit identification strategies* as opposed to *unit assemblage strategies*. This underscores the reader's need for more specific and specialized strategies in the areas of vocabulary, orthography and grammar when reading Chinese. The data also revealed a similarity between more effective and less effective readers in their use of strategies, except that the more effective readers approached areas of difficulty with more confidence and better decision-making. In conclusion, Lee (1998) ascertained that, between the two groups of readers, changing the genre of a text did not result in the manifestation of any differences in strategy application. Later, in 2008, Lee redefined reading strategies within two categories: bottom-up and top-down, with results showing that the three most frequently used bottom-up strategies were translating, marking the text, and writing *pinyin* and/or English equivalent, whereas

among the top-down strategies, paraphrasing, hypothesizing, and monitoring comprehension were the three most frequently used strategies.

In light of the fact that most studies on CSL/CFL reading strategies have been limited to intermediate or advanced learners, Li (1998) decided to enquire about the nature of reading acquisition of adult CFL beginning learners. Li observed six students of Chinese over two semesters in a classroom-based qualitative research study. Three cases studies were also constructed. It was concluded that: (1) English speakers need to commit themselves to a long-term engagement for developing basic skills and are relatively slower in the process compared to other L2 learners who need not learn a new orthography; (2) the distance between L1 English (an alphabetic system) and L2 Chinese (a logographic system) and the features of L2 Chinese have strong impacts on English learners' reading strategies and development; (3) there is a close relationship between the L2 speaking ability and the reading development. Li (1998) suggested that learners need to develop a fast, context-free word recognition ability and competent speaking and listening abilities to facilitate reading comprehension.

Targeting subjects at three proficiency levels, Chang (2010) examined the discourse processing strategies of 75 college students after 1, 2, and 3 years of Chinese language study, and the relationship of the strategies to comprehension performance. Participants at each proficiency level read a test passage appropriate for their current linguistic abilities, recalled what they had read by writing in English, and filled out a questionnaire (adapted from Carrell's, 1989) designed to probe their cognitive and metacognitive abilities when processing a Chinese text. The results showed that readers at higher proficiency levels engaged in more global-level

processing activities than readers at lower proficiency levels, which was particularly prominent in the intra-level comparisons of more- and less- proficient readers.

However, no clearly discernible pattern of development across proficiency levels was found, which Chang attributed to a lack of common practice in terms of instruction in reading strategies, either taught overtly in class or suggested in textbooks, leaving students to their own devices to read effectively.

In summary, for CSL learners whose native language is English, reading might remain a long and arduous process due to the linguistic distance between English and Chinese, and the difficulties in learning a new orthography. They tend to use local or bottom-up reading strategies even if they have attained high CSL proficiency.

2.5.4 Limitations of previous studies

Compared with the vast amount of research in reading English, there have been fewer studies on reading Chinese, especially on CSL reading strategies. Although previous studies of CSL reading strategies have fostered our understanding about CSL reading, they are not without problems.

First, many of the studies have examined strategy use by different categories of readers, such as successful versus less successful, more proficient versus less proficient, good versus poor. Such broad dichotomies may overlook subtle and important differences and similarities between learners and their strategy use (Singhal, 2001). Those subjects in each category who are near the cut-off point may not be very different from one another (Hudson, 2007).

Second, the majority of early research was conducted among subjects at the intermediate or advanced level, and scant attention has been paid to CSL learners at the elementary level. But reading at the beginning level is the foundation for the acquisition or reinforcement of lexical and syntactic structures, so more attention should be devoted to this level (Li, 1998). Zhou, Wu & Wang (2007) advised that full-time students can get to learn relevant knowledge and strategies in the second semester of their first year. Therefore, when they enter this period, it is possible to investigate the use of reading strategies of elementary CSL learners.

Third, there are more factors to be considered in research into reading strategies, such as individual differences and the readers' L1 as well as cultural background (Koda, 2005). There is a lack of research comparing the use of reading strategies among learners of different L1 backgrounds.

Fourth, there is concern with the classification of reading strategies. Some studies refer to reading strategy lists based on ESL without any adaptation, as in the example of Du's (2000) study. Other studies adopted a binary division that is not always clear-cut (e.g., global/top-down versus local/bottom-up by Lee (1998, 2008). Lee (2008) acknowledged that certain strategies could be categorized as either bottom-up/local or top-down/global strategies, such as "using context".

2.6 Theoretical framework of the present study

As mentioned previously, the categorization of reading strategies in previous literature can be problematic. In order to organize and synthesize different types of

reading strategies better, McNamara et al. (2007) proposed the 4-pronged Comprehension Strategy Framework.

The 4-pronged Comprehension Strategy Framework consists of monitoring comprehension and reading strategies at its core and four categories of strategies that comprise the prongs of the framework (see Figure 2.4): preparing to read; interpreting words, sentences and ideas in the text; going beyond the text; organizing, restructuring, and synthesizing information in the text. This framework posits that monitoring both comprehension and the use of reading strategies is the key to skilled and successful reading. First, the reader monitors comprehension by employing strategies to assess understanding. For instance, skilled readers take notes when comprehension fails or use notes to aid comprehension. Second, the reader adjusts reading strategies to improve comprehension. The fact that good readers not only use more strategies than poor readers but also are more active in monitoring and self-regulating the use of reading strategies suggests that the use of reading strategies facilitates both comprehension and readers' monitoring of it (Grabe, 2009). Finally, after reading, readers use strategies to evaluate their comprehension, such as taking a test, or recalling the text.

Figure 2.6 The 4-pronged Framework for Reading Comprehension Strategies

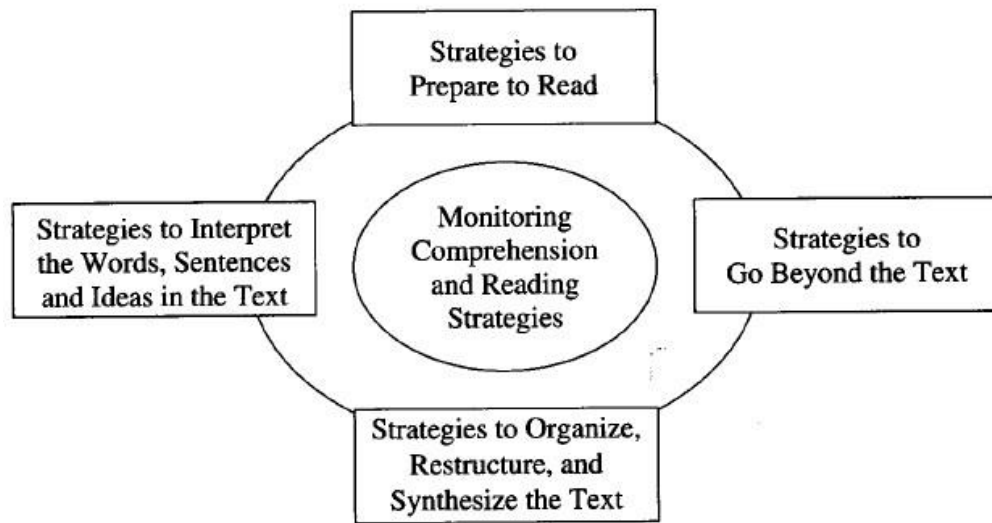


Figure 19.1. The 4-pronged framework for reading comprehension strategies. Adapted from “The 4-pronged comprehension strategy framework,” by McNamara et al., 2007. In D.S. MaNamara (Ed.), *Reading comprehension strategies: theories, interventions and technologies*, p.467. Copyright 2007 by Lawrence Erlbaum Associates, Inc.

McNamara et al. (2007) stated that the proposed framework is supported both empirically and theoretically. In the first place, the construction of the 4-pronged Comprehension Strategy Framework is in accord with the US College Board reading comprehension standards (Brinkley, 2006). The College Board's standard identifies four aspects of successful reading comprehension: (a) coherent text comprehension by components of texts such as words, sentences, and text structure; (b) connection with the reader's prior knowledge and experiences; (c) analysis of author's purpose; and, most important, (d) use and adjustment of reading strategies. The fourth standard is emphasized in the 4-pronged Comprehension Strategy Framework. In addition, there are two underlined reading theories in this framework, i.e. the C-I model (Kintsch, 1998) and the Constructionist Model (Graesser & colleagues, 1994, 1997, 2001, 2007, 2012 in press). Aligned with the C-I model, it is postulated in

the framework that a reader's comprehension of texts are represented at multiple levels, and the principal levels are the textbase representation and the situation model. The framework is also driven by the postulation that successful and skilled readers will maintain a coherent representation of text comprehension at both local-level and global-level processing, which is congruent with the Constructionist Model.

As noted by McNamara et al. (2007), each strategy is not limited within the category assigned, and it can be used at multiple stages. For example, defining a goal can not only set a standard for comprehension before reading but also facilitate understanding by matching the reader's comprehension with his or her expectation. McNamara et al. (2007) also pointed out that there are two main purposes for reading, namely reading to comprehend and reading to decode. Since their focus was on the former, their proposed framework included common reading strategies considered to be effective for comprehension and consciously excluded decoding strategies.

In spite of its exclusion of decoding strategies, the 4-pronged comprehension strategy framework has shed light on the importance of monitoring both comprehension and the use of reading strategies in reading comprehension as well as categorizing and synthesizing reading strategies. However, as the beginning step towards comprehension, decoding is an indispensable step in reading (Pressley, 2002). The present study applied this framework and supplemented it with four decoding strategies adapted from Chang's (2010) study that are considered to be applicable in CSL reading: CSL readers try to (1) understand the meaning of each character, (2) understand the meaning of each word, (3) use radicals to guess the meanings of unknown characters, and (4) parse the sentence into meaning units. These decoding strategies are added to the second category of reading strategies:

interpreting words, sentences and ideas in the text. Based on the 4-pronged comprehension strategy framework, a reading-strategy inventory applied to both research and instruction of CSL reading was designed. Further details are stated in the next chapter with regard to the research methodology.

2.7 Verbal report and free recall

As indicated by McNamra et al. (2007), readers use post-reading strategies to assess their understanding of the text and to monitor comprehension. In reading research, verbal reports and free recall are used frequently to monitor and assess reading comprehension. This section introduces and discusses these two research methods.

2.7.1 Verbal report

Verbal reports are a subject's comments while s/he completes a task. This technique is gaining popularity in both reading research and reading instruction. For researchers, verbal reports provide insights into a variety of issues that production data alone cannot address, such as language learners' cognitive processing, thought processes, and strategies (Bowles, 2010). For teachers, verbal reports gathered from students are significant in revealing the problems students encounter in reading compared with judgment based purely on teachers' intuitions and guesses (Block, 1986).

In terms of L2 reading, verbal reports are comprized of (1) introspective or retrospective responses based on self-observation (e.g., "What I just did was to skim

the text and get the main idea", and (2) concurrent reports of thoughts or think-aloud (e.g., Who does 'they' refer to here?) (Cohen, 1996). Opinions differ about which kinds of reports better resembles reading processes (Block, 1986): It is possible to acquire a complete picture of comprehension processes from retrospective reports, yet, the description might be inaccurate because of time delay. Introspective and think-aloud reports, on the other hand, shorten the time lag between the reader's mental activity and subsequent reports. Relatively, think-aloud reports are more direct than introspection in revealing readers' on-going mental activities. Pressley & Afflerbach (1995) reviewed that L1 reading studies vary in the use of verbal reports, and found it difficult to determine whether there is a qualitative difference between introspection and think-aloud reports. The most comprehensive think-aloud protocols were developed by Ericsson and Simon (1984/1993, as cited in Yang, 2003). Ericsson and Simon (1984/1993) insisted that subjects should report exactly what is being thought rather than interpreting the responses. When the reader completes a think-aloud task, it is the responsibility of the researcher to infer processes from the reports.

As for L2 reading research, Cohen (1996) found that both introspection and think-aloud have been used to describe strategies, and reflected further about the issues with verbal reports, including immediacy, the respondent's role, prompts for specific verbal reports, guidance in providing verbal reports, and avoidance of reactive effects of verbal reports. In other words, the researcher must provide clear instruction and familiarize subjects with the procedures of performing verbal reports. It is important to maintain ongoing reports and to provide prompts to subjects when there is silence. At the same time, the researcher should avoid leading subjects to

over-explanation of their thoughts. After all, verbal reports leave it to the researcher to analyze what strategies have been used by the reader.

2.7.2 Free recall

Free recall (or immediate recall) is an assessment instrument used commonly in L2 reading research. It is a measure of reading comprehension. Free recall requires subjects to read a passage and then to write down everything they can remember about it. There are also studies asking subjects to recall orally (Hedgcock & Ferris, 2009).

Free recall is held as a valid measure of a reader's comprehension, compared with other traditional standardized assessment tests like multiple-choice question tests and cloze tests (Bernhardt, 2010). Multiple-choice question tests and cloze tests have both been criticized for providing misleading cues for readers (Grabe, 2009; Koda, 2005). Multiple-choice question tests tend to tap the readers' test ability instead of reading ability because readers can play games about test rules, for example, they can exclude wrong choices to get the right answer without understanding the text content. Cloze tests are not valid either in testing overall reading ability because they are most likely testing grammatical knowledge. Since readers construct recall protocols themselves by resorting to their memory, free recall does not provide cues for readers, and it is viewed as "a pure measure of comprehension" (Alderson, 2000, p.230). Nonetheless, there are controversial issues with recall performance and assessment, including time of recall, language use and recall scoring systems.

There is variance in terms of time duration of recall in the extant L2 reading research. Readers have been required to recall either at their own pace or within a limited period. Chang (2011) examined the influence of time allowance on ESL readers' recall performance among 180 Chinese college students. The results indicated that readers who were allowed to read at their own pace outperformed those in the constrained time condition. Therefore, in order to augment the quantity of recall, it might be better to conduct free recall research without a time limit.

Another concern with free recall is whether readers should recall in their L1 (the dominant language) or L2 (the target language). Bernhardt (1991, 2010) emphasized using recall in L1 to gain insight into L2 reading comprehension. There are doubts about recalling in that recall in L2 is more of a writing or oral task than a reading task (Hedgcock & Ferris, 2009; Koda, 2005). Lee (1985) visited this question by engaging 320 university students of L1 English in an L2 Spanish reading task. Subjects were requested to recall and write their recollections in either their L1 or L2 after reading a passage. It was found that subjects recalled more when writing in their L1 than in L2. Lee (1985) predicted that, because of the subjects' limited production abilities, studies requiring them to recall in the target language might weaken reading performance, which is a concern for research conducted among subjects with various language backgrounds.

The final issue with free recall is choosing the appropriate scoring system. Different scoring systems have been constructed to evaluate recall reports, among which Meyer's (1985) recall protocol scoring system was popular in L2 reading research (e.g., Bernhardt, 1991; Chang, 2010; Everson & Ke, 1997). Meyer's (1985) system evaluates free recall protocols by weighing all possible propositions in a text

according to their importance — how crucial each one is for conveying the main points of the text on a scale. Recall reports are scored according to a pre-developed template that consists of propositions within a text. Meyer's (1985) system merely measures the reader's performance for the presence or absence of previously determined and weighted propositions in the recalled text; no attention is paid to the reader's relevant elaborations aimed at assimilating and integrating text-based information into his or her prior knowledge (Aweiss, 1993).

Another scoring system, the Constructive Activity Scale, was proposed by Chan, Burtis, Scardamalia & Bereirter (1992), underlined by the position that reading comprehension is an active process of construction rather than passive text information retrieval. The Constructive Activity Scale indentifies five levels of constructive activity: Level 1—prefactual confabulation: responses that depend on isolated words or fragmented phrases and do not show an understanding of the text at a propositional level; Level 2— knowledge/detail retelling: responses that elicit details in the text through verbatim or near verbatim paraphrases of the text (detail retelling), and statements of personal knowledge that are cued by a text proposition but do not show text comprehension (knowledge retelling); Level 3—assimilation: responses that give explicit evidence of comprehension of the text; Level 4—problem solving: responses engaged in problem-solving activities to integrate the text information into his or her existing knowledge structures; Level 5—extrapolation: responses that show an extension of knowledge beyond what was given in the text and beyond what the reader already knows (Chan, Burtis, Scardamalia & Bereirter, 1992, p.101-106). It is held that constructive activity is linked intrinsically to mental representations of text, as depicted in the C-I Model (Kintsch, 1998): Levels 1 and 2 indicate the surface level; Level 3 is at the textbase

level; and Levels 4 and 5 suggest the construction of situational model. The Constructive Activity Scale was applied to measure children's text comprehension by Chan, Burtis, Scardamalia & Bereirter (1992). 109 children, ranging from grade one to grade six, listened to an informative statement and were asked to perform a think-aloud report about each statement. The results showed that low-level constructive activity is characterized by the use of item-by-item processing, whereas high-level constructive activity involves multiple connections. The Constructive Activity Scale not only provides qualitative information about text processing, but also serves an important pedagogical purpose (Aweiss, 1993). Rather than revealing what unsuccessful learners cannot do, the Constructive Activity Scale defines low-level constructive activity and draws implications about how instruction can help them move to high-level constructive activity.

To sum up, recall in L1 in an unconstrained time condition is a plausible way of measuring L2 reading comprehension. Only targeting readers' perception of text content, Meyer's (1985) propositional analysis system does not attend to the reader's integration and elaboration beyond the text. According to Meyer's (1985) system, raters evaluate the readers' performance according to a pre-developed template. The Constructive Activity Scale, in contrast, values the construction of mental representation at different levels as a result of reading comprehension (Chan, Burtis, Scardamalia & Bereirter, 1992). Five levels of constructive activity are identified by the Constructive Activity Scale. Readers' responses are assessed in propositional units based on the five-level scale.

2.8 Summary

L2 reading involves the interaction between two languages. It is thus more demanding than L1 reading. When it comes to CSL reading, CSL learners are faced with a challenging task due to the unique language properties of Chinese, especially its writing system. Previous studies of adult CSL learners' reading strategies have shown that the proper use of reading strategies can improve readers' comprehension. At the same time, the application of reading strategies is influenced by L1 background and overall CSL proficiency level. However, there are problems to be tackled, including that: ad hoc classifications of CSL readings strategies were used in previous research; most studies only focused on intermediate or advanced learners; and there is lack of studies comparing the application of reading strategies by CSL learners of different L1 backgrounds. Underlying the C-I model and the Constructionist Model, the 4-pronged Comprehension Strategy Framework (McNamara et al., 2007) synthesizes reading strategies that can also be applied to investigate CSL reading strategies, if with minor adjustment. A reading strategy questionnaire survey was constructed based on this framework in the present study (as depicted in the next chapter). Besides questionnaire survey, this study also required participants to perform verbal reports and free recall in reading tasks. To support the investigation of the present study, a rationale has been provided for verbal reports and free recall, which are used extensively in reading research.

Chapter 3 Research Methodology

3.1 Introduction

This study investigated the interaction among CSL learners' use of reading strategies, L1 literacy background, overall CSL proficiency, and CSL reading proficiency at the discourse level. Four research questions were examined. These are described in Section 3.2. Sections 3.3-3.6 describe the design of research methodology, including the participants, instruments, research procedures and the method of data analysis. In this study, data were collected by engaging 75 participants in reading tasks, a questionnaire survey and a follow-up interview. In the reading tasks, the participants were required to perform verbal reports during reading and free recall after reading. After completing the reading tasks, they were asked to fill in a questionnaire regarding their use of reading strategies in both L1 reading and CSL reading. Before the actual research, a pilot study was conducted with 38 CSL university learners with a similar background as the target participants. Last, a summary of the research methodology and the limitations of the present study are stated in Section 3.7.

3.2 Research questions

This study aimed to examine the interrelationship between (a) the use of CSL reading strategies, (b) CSL learners' L1 literacy background, (c) their overall CSL proficiency and (d) their CSL reading performance. Four research questions were generated.

Q1: What are the CSL reading strategies most and least frequently used by adult learners?

Q2: Is there any difference in the application of CSL reading strategies at elementary, intermediate and advanced levels? Is there a developmental pattern across the three levels?

Q3: What is the possible role of L1 literacy in CSL reading?

(3a) Will L1 reading strategies be transferred to CSL reading? Or do learners develop specific reading strategies to cater for CSL reading?

(3b) Do learners with different L1 backgrounds apply different CSL reading strategies?

Q4: How do the use of reading strategies and CSL overall proficiency influence CSL reading performance?

(4a) Do more proficient CSL readers apply different reading strategies from those of less proficient CSL readers within the subgroups at elementary, intermediate and advanced levels?

(4b) Will the use of reading strategies compensate for limited CSL overall proficiency in CSL reading?

3.3 Participants

For the actual research, 75 participants were recruited from Chinese classes in three major universities in mainland China, Sun Yat-sen University (SYSU),

Shenzhen University (SZU), and South China University of Technology (SCUT), which provide Chinese language courses for international students. Located in South China, all three universities hold Chinese classes at elementary, intermediate and advanced levels, each with four sublevels. The participants varied in their overall Chinese proficiency levels, including elementary, intermediate and advanced learners. Their proficiency levels were determined by the entrance examinations held by the three universities, which were based on Chinese Proficiency Test (*Hanyu Shuiping Kaoshi*/HSK). The participants were also divided into two major groups according to their L1 backgrounds. One is within the Chinese cultural sphere (CCS). Chinese cultural sphere is often used interchangeably with *Hanzi wenhua quan*/汉字文化圈 (literally meaning Chinese character culture circle) (Chia, 2004). Chinese cultural sphere here refers to countries and regions in which people are influenced by the writing system of Chinese as well as Chinese culture, including Japan, Korea, and other regions occupied by large Chinese populations. Other than participants from CCS, this study also recruited participants from the Non-Chinese cultural sphere (NCCS) whose backgrounds are both linguistically and culturally distant from China, such as CSL learners from English-speaking and European countries.

All participants completed a reading task followed by a questionnaire survey. The valid numbers of participants completing the reading tasks and questionnaire survey were 68 (with 20 participants at the elementary level, 28 participants at the intermediate level and 20 participants at the advanced level) and 74 (with 21 participants at the elementary level, 31 participants at the intermediate level and 22 participants at the advanced level) respectively. Details of the participants' backgrounds are shown in Table 3.1. To ensure the homogeneity of the

participants' educational backgrounds, one-way ANOVA was used to analyze data gathered from the questionnaire survey. The results show an equal variance among the three universities, which indicates that the performance of students from these three universities is comparable.

Table 3.1.

Participants' Background Information

Background information		Reading task	Questionnaire survey
Age range (years)		18-31	18-31
Time of learning Chinese in China (months)	Elementary	1-12	1-12
	Intermediate	1-24	1-24
	Advanced	4-39	4-39
Number of participants across three levels	Elementary	20(CCS14,NCCS 6)	21(CCS 15, NCCS 6)
	Intermediate	28(CCS 14,NCCS 14)	31(CCS 16, NCCS 15)
	Advanced	20 (CCS 16,NCCS 4)	22(CCS 18, NCCS 4)
Number of participants of different L1 backgrounds	CCS	44	49
	NCCS	24	25
Number of participants from each University	SYSU	34	36
	SZU	33	23
	SCUT	11	15
Total number		68	74

3.4 Instruments

The research instruments were comprized of reading materials and a questionnaire named Survey of Reading Strategies (SRS). The reading materials were two sets of Chinese texts used in the reading tasks, which were used to observe the participants' reading activities. SRS, on the other hand, served to tap the participants' perceptions of using reading strategy during reading, including both L1 reading and CSL reading. The content validity of the instruments was established by two scholars who are experts in the field of reading research. Furthermore, the reliability of the research instruments was tested by conducting a pilot study with 38 university CSL learners.

3.4.1 Reading materials

Two sets of texts were selected for the reading task: narrative and argumentative. The narrative texts were adapted from *Chinese Wide Angle — Gaoji Hanyu Fandu Jiaocheng, Vol.1* (Zhu & He, 2007), while the argumentative texts were adapted from *Fazhan Hanyu: Gaoji Hanyu Yuedu, Vol.1* (Luo, 2005) (see Appendix 2). The selection of different genres was for the purpose of maintaining the participants' focus while presenting interesting content, making it effective to tap into their reflections on their application of reading strategies (as cited in Yau, 1997). Considering that CSL learners at the elementary level might not often encounter argumentative texts because of curriculum design, a lower proportion of argument was selected for the argumentative text used at the elementary level than for those at the intermediate and advanced levels.

Each set contained three versions of texts adapted from the same original text and revised so as to cater for the needs of learners at elementary, intermediate and advanced levels respectively. In order to ensure the materials were pertinent to the three CSL proficiency levels, their difficulty levels were evaluated from three aspects, the selection of Chinese characters, vocabulary and sentences. The objective was to keep the text difficulty at the “instructional” level, as proposed by Kletzien (1991), which means the text should be challenging enough for readers to apply reading strategies consciously and to give verbal reports but not too difficult to cause frustration during the reading process.

Two major syllabuses used in mainland China were used to evaluate the selection of Chinese characters and vocabulary—— *A Grading Syllabus for Chinese Vocabulary and Chinese Characters* (*Hanyu Shuiping Cihui yu Hanzi Dengji Dagang*, 漢語水平詞彙與漢字等級大綱, henceforth referred to as CVCC) (Chinese Proficiency Test Center, 2001) and *A Grading Syllabus for Chinese Proficiency and the Grammar* (*Hanyu Shuiping Dengji Biaozhun yu Yufa Dengji Dagang*, 漢語水平等級標準與語法等級大綱, henceforth referred to as CPG) (Liu, 1996). In CVCC, Chinese vocabulary and characters are categorized into four levels with increasing difficulty, namely Levels A, B, C & D (*Jia Yi Bing Ding*, 甲乙丙丁). CVCC is important for the design of CPG (Liu, 1996). According to CPG, texts used at different proficiency levels cover different types of Chinese characters and vocabulary. Generally, texts at the elementary level include Chinese characters and vocabulary at Level A & Level B specified by CVCC; the intermediate level includes Levels A, B and C; and the advanced level includes A, B, C & D.

The difficulty of reading materials in Chinese is influenced not only by the selection of Chinese characters and vocabulary, but by the amount and length of sentences. For instance, Yang (2008) and Zhang (2000) conducted quantitative research among a wide range of CSL course-books to investigate the amount and length of sentences contained in the texts. It was found that there is variance in the amount and length of sentences across different levels. In this light, evaluation indices were constructed by combining the standards stated in the two grading syllabuses with results from Yang's (2008) and Zhang's (2000) studies (as summarized in Table 3.2). Quantitative analysis was conducted to investigate the selection of Chinese characters, vocabulary and sentences in the reading materials used in this study. The results are summarized in Table 3.3. When compared with Table 3.2, it is shown that the difficult levels are consistent with the evaluation indices.

Table 3.2.

Indices for Evaluating Text Difficulty

Level	Number of Chinese characters	Vocabulary quantity	Number of sentences/ 100 Chinese characters	Length (number of Chinese characters per sentence)
Elementary	Beyond this level $\leq 10\%$	Beyond this level $\leq 20\%$	6-10	≤ 10 ish
Intermediate	Beyond this level $\leq 15\%$	Beyond this level $\leq 30\%$	< 6	10-20
Advanced	Beyond this level $\leq 20\%$	Beyond this level $\leq 35\%$	< 6	20-40

Table 3.3.

Difficulty Levels of Chinese Characters, Vocabulary and Sentences in the Reading Materials

Genre		Narrative			Argumentative		
Level		E	I	A	E	I	A
Number of Chinese Characters	Level A	82	136	166	82	149	168
	Level B	4	14	21	7	25	41
	Level C	0	2	4	1	2	3
	Level D	0	0	0	0	1	3
	NS	0	0	1	0	0	3
Number of Words	Level A	59	87	112	54	84	90
	Level B	1	28	33	11	30	36
	Level C	0	7	12	0	9	14
	Level D	2	6	12	0	4	7
	NS	0	1	6	1	6	18
Number of sentences/100 characters		6.06	5.23	4.81	8.24	5.28	4.55
Length per sentence (number of characters)		16.5	19.12	20.81	12.21	18.94	22

Note. E-elementary; I-intermediate; A-advanced; NS-Not found in the *Syllabus*.

A pilot test of the reading materials was conducted with six CSL university learners at elementary, intermediate and advanced levels, with two learners at each level. When completing reading tasks, subjects were able to recognize that the two texts designated to them were of different genres. Also, it was found that unknown characters and words would not hinder their overall comprehension. Sufficient

verbal-report data were collected. The total reading time ranged from ten to forty minutes, increasing as the learners' proficiency level improved. The results of the pilot test suggest that the design of the reading materials was appropriate.

3.4.2 Reading strategy questionnaire

Aimed at tapping the CSL learners' perception of applying strategies during reading, a questionnaire, the Survey of Reading Strategies (SRS) (see Appendix 3) was designed. It was revised based on a questionnaire pilot-tested among 38 CSL university learners—— Survey of CSL Reading Strategies (SCRS) (shown in Appendix 4).

The SCRS consists of two parts: (Part I) personal information and (Part II) perception of CSL reading strategies. Part I includes questions about learners' backgrounds, such as L1, Chinese learning experience and motivation to learn Chinese. Part II is based mainly on the 4-pronged Comprehension Strategy Framework (McNamara et al., 2007). It comprises four categories: Category 1, Preparing to read; Category 2, Interpreting words, sentences and ideas in the text; Category 3, Going beyond the text; Category 4, Organizing, restructuring, and synthesizing information in the text. Because the emphasis of McNamara et al.'s (2007) framework is on comprehension strategies, no decoding strategies were included. In the pilot study, six decoding strategies unique to CSL reading were adapted from Chang's (2010) research: CSL readers try to (1) recognize each Chinese character, (2) understand the meaning of each character, (3) recognize each word, (4) understand the meaning of each word, (5) use radicals to guess the meanings of unknown characters, and (6) parse the sentence into meaning units.

These six strategies were added to Category 2 (Interpreting words, sentences and ideas in the text). As a result, Part II include 33 items of four categories: Category 1 (Strategies 1-4), Preparing to read; Category 2 (Strategies 5-26), Interpreting words, sentences and ideas in the text; Category 3 (Strategies 27-30), Going beyond the text; Category 4 (Strategies 31-33), Organizing, restructuring, and synthesizing information in the text (see Appendix 4). Each item was rated on a five-point Likert scale, ranging from one to five, denoting the increasing frequency of applying a certain reading strategy in CSL reading.

Internal consistency of all items and items within sub-categories in the SCRS were evaluated based on the results of the pilot study. Cronbach's alpha coefficients range from around 0.4 to 0.9, suggesting that the effect size of correlation is acceptable (see Table 3.4).

Table 3.4.

Internal Consistency of SCRS

Reading strategies	Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
Preparing to read	1-4	.668	.667
Interpreting words, sentences and ideas	5-26	.905	.904
Going beyond the text	27-30	.672	.669
Organizing, restructuring, and synthesizing information in the text	31-33	.459	.463
All	33	.922	.921

Given that the SCRS only requires participants to rate according to their use of strategies in CSL reading, it is not possible to compare the use of reading strategies between L1 reading and CSL reading. In the actual research, SRS, a revised version of SCRS, was used instead. This asked participants to rate the same strategy for both L1 reading and CSL reading. There was additional content added to the SRS: (1) Part I includes extra questions asking participants to evaluate their reading courses, report their perspective about the most difficult aspect in CSL reading, and reveals more details of their language learning experience. (2) To avoid overlapping meanings between S5 (I try to recognize each Chinese character) and S7 (I try to understand the meaning of each character), between S6 (I try to recognize each word) and S8 (I try to understand the meaning of each word) in the SCRS, only S7 and S8 were maintained in the SRS. The content validity of SRS was again evaluated by two scholars in the field of reading research.

After revision, there are 31 items in the SRS: Category 1 (Strategies 1-4), Preparing to read; Category 2 (Strategies 5-24), Interpreting words, sentences and ideas in the text; Category 3 (Strategies 25-28), Going beyond the text; Category 4 (Strategies 29-31), Organizing, restructuring, and synthesizing information in the text (see Appendix 3). Because items 5 (I try to understand the meaning of each character), 7 (I use radicals to guess the meanings of unknown characters), 12 (I translate Chinese into my native language) and 13 (I think in both Chinese and my native language) might be unique to CSL reading, they could help avoid positive response bias (Lau, 2002). There are three translated templates of SRS, written in English, Japanese and Korean and supplemented with instruction in simplified Chinese.

Reliability statistics were calculated to evaluate the internal consistency of the items in the SRS. Cronbach's alpha coefficients were between 0.8 and 0.9, showing high-level correlation between items (as shown in Table 3.5).

Table 3.5.

Internal Consistency of SRS

Reading strategies	Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
L1	31	.896	.897
CSL	31	.824	.828

3.5 Research procedures

First, participants were told to perform verbal reports while attending the reading tasks. They started by practicing in a warm-up task to get familiar with verbal reports. The reading materials for this practice were selected from Chinese textbooks aimed at CSL learners (see Appendix 5). The participants were then required to read a narrative text and an argumentative text designated for their respective proficiency levels, and to talk aloud any of their thoughts when processing each text. After completing the reading of each text, they were asked to recall whatever they remembered about the text without referring to external sources such as the original text or a dictionary. Given the languages shared between participants and the researcher, the participants were allowed to talk aloud and retell either in Chinese or English. They were informed that all reports would be recorded for further analysis. After the reading task, the participants were

instructed to fill in the SRS. If there was any doubt about participants' performances during the whole process, the researcher would ask them follow-up questions. The total research time ranged from 30 minutes to 90 minutes.

3.5.1 Rationale and research techniques

In this study, verbal reports and free recall were employed to tap into the participants' use of reading strategies and to record their reading performances respectively. Both methods have been used in the extant CSL reading research (e.g., Chang, 2010; Du, 2000; Everson & Ke, 1997; Li, 1998).

The verbal report is a means used extensively in L2 reading research as a window into the learners' minds, capturing their internal thought processes (Cohen, 1996). While verbal reporting was used to reveal the participants' reading processes, free recall was used to assess their reading performances. Different from standard tests such as multiple-choice questions, free recall does not conceal hints for comprehension (Everson & Ke, 1997). And immediate recall is a valid measure of reading comprehension (Bernhardt, 1991, 2010).

3.5.1.1 Procedures of verbal report and free recall

As discussed in Section 2.7.1, there are debates about which kind of verbal report is better at capturing readers' cognitive activities. Despite the disputation, our pilot research showed that both introspective and think-aloud reports provided valuable information about CSL learners' mental activities during reading. Therefore, in the present study, think-aloud instruction was provided for the

participants, while the participants' self-initiative introspections were also recorded and subject to further analysis. Given the specific rules of conducting think-aloud research, the present study provided explicit instruction to participants in the first place (adapted from Ericsson and Simon, 1993): "We would like to ask you to THINK ALOUD as you read NATURALLY through the texts, just as you usually read by yourself. What we mean by 'THINK ALOUD' is that we want you to say out loud everything that you would say to yourself silently while you think. Just act as if you were alone in the room speaking to yourself. Don't try to explain your thoughts. You can use either English or Chinese, or both." Next, the participants were designated to a warm-up task. They were given one or two short passages to practice familiarizing themselves with think-aloud reports. They were allowed to ask questions and clarify any doubts they might have about the procedure. After the warm-up task, they were told to proceed to the reading tasks while their verbal reports would be recorded. In addition, when a participant lapsed into silence for too long, verbal prompts were given by the researcher to remind him/her to continue the verbal reporting. All of the recorded verbal reports were transcribed and subject to subsequent analysis.

After reading each text, the participants were asked to retell whatever they remembered about it. Routinely, participants were supposed to write down their thoughts in a free recall task. However, writing Chinese characters is effort-consuming, hence the participants in this study were told to retell from their memories in either Chinese or English while their reports were recorded. The participants were not allowed to refer to the original text or to any other reference tools such as a dictionary. All recall protocols were transcribed for assessment. This study applied the Constructive Activity Scale proposed by Chan, Burtis,

Scardamalia & Bereirter (1992) as a measure of the CSL adult learners' reading performances. Recall reports were assessed by propositions at both micro-level and macro-level. Micro/atomic propositions consist of a relational term, the predicate, and one or more arguments (Kintsch, 1974). Macro/complex propositions are compounds composed of several micro-propositions that are subordinated to a core propositional meaning (van Dijk & Kintsch, 1983).

3.5.2 Inter-rater reliability

Two raters, a PhD student familiar with the rating procedure and the researcher, collaborated to code the reading strategies observed in the verbal reports and score free recall reports. Instruction was provided for the independent rater (shown in Appendix 6). First, raters were supposed to relate the transcription of verbal reports to one or more than one reading strategies according to the SRS. If no corresponding strategy could be found, the raters were required to write down their own descriptions and comments. They would then continue scoring recall reports based on the Constructive Activity Scale. Points were given for each proposition.

Rating consistency was determined by an inter-rater reliability analysis of 10% of the data that were chosen randomly. For reading strategy coding, Kappa statistics were used and the inter-rater reliability for the raters was found to be $Kappa = 0.777$ ($p < 0.001$), indicating substantial agreement. As for the scoring of free recall reports, Cronbach's alpha was used as a measure of agreement. Cronbach's $\alpha=0.792$, which also suggests an acceptable level of agreement. The researcher then continued to evaluate the rest of the verbal and free recall reports. The

aggregation of scores for all responses from a participant is the final result of his or her reading performance.

3.5.3 Verbal report and free recall excerpt

A translated example of verbal report and free recall is presented in Table 3.6.

Table 3.6.

Verbal Report and Free Recall Excerpt

Verbal reports	Transcription	Codes	
		Researcher	Independent rater
61A1	[嗯嗯，有发生这样的事情吧。在高中的时候，我住在一种宿舍。第一次进来的时候，人们的个子很小很矮的。不窄，我们的房间。但是过了一段时间，他们真的很高了，然后觉得很窄的感觉。]	24	3,31
61A2	“150 度。”[哦，这个是怎么表示呢？这个是眼睛看的时候看的度量吗？]	25,14	14,24
61A3	“后来我观察，他看书可以不戴，看电视可以不戴，但上学、走路是一定要戴的。”[比较麻烦。]	30,26	26
61A4	“问他为什么要这样？他反问，你不觉得这样我看起来很成熟吗？”[我不那么觉得。]	30	30
61A5	“孩子是父母这张弓上射出去的箭。[学过了这个成语，但是忘记怎么读了。”意思明白。]	24	3

Free recall reports	Transcription	Codes	
		Researcher	Independent rater
61A1	[先说他的儿子怎么长大啦。]	2	4
61A2	[然后在家庭的一些情况。]	3	3
61A3	[然后房子比较窄，长大了以后房子比较窄了。]	3	3
61A4	[然后眼睛不好啦。]	2	2
61A5	[去了医院买了一个新的眼镜吗？]	2	2

Note. Symbols used in this except denote different meanings: "..." means the original text context; [...] includes Subject's verbal report. In mAn/mBn, *m* is subject number, *A* is the narrative text, *B* is the argumentative text, *n* is the coding number. For example: 61A1 refers to the 1st code for subject 61's report when reading the narrative text.

3.6 Data analysis

Data were gathered from the verbal reports, free recall and questionnaire survey.

Quantitative data were extracted from the questionnaire survey, while both quantitative and qualitative data were gathered from the verbal reports and free recall.

The quantitative data collected with the questionnaire survey consist of scores rated by the participants, which imply the frequency of using a certain strategy in L1 reading and CSL reading. Analyses were first carried out to investigate the general trend of using CSL reading strategies. After this, the use of reading strategies was compared among learners with regard to the influence of different factors in CSL reading including their CSL proficiency levels and L1 backgrounds.

While it was expected that the results of the questionnaire survey would reflect the learners' self-perceptions about their applications of reading strategies in L1 and CSL reading, verbal reports consist of quantitative and qualitative data that reveal the actual use of CSL reading strategies. The quantitative data included reading strategy quantity, number of reading strategy types, and categories of reading strategies. The qualitative data were comprized of examples of verbal reports, illustrating the CSL learners' cognitive activities during reading and providing explanations for implicit differences in the use of CSL reading strategies between learners of diverse overall CSL proficiency levels, L1 backgrounds and CSL reading proficiency levels. The CSL reading proficiency level was determined by the scores of recall reports, comprizing quantitative data illustrating the participants' CSL reading performances.

3.7 Summary and limitations

By different means, both quantitative and qualitative data were collected in this research. SRS was employed to tap the participants' use of reading strategies in both L1 and CSL reading. In order to observe the actual use of reading strategies during CSL reading, verbal reports including both introspection and think-alouds were recorded. Also recorded were the participants' free recall reports, which indicated their CSL reading performances.

Nevertheless, there were limitations in the present study. The primary concern lies in the number of participants. Although there were 20ish participants at the elementary and advanced levels, the numbers of CCS and NCCS participants were not as balanced as those at the intermediate level. Therefore, attention should be

paid to the potential effect of participant background on the results. Another issue is the language used in reading tasks. Given the diverse language backgrounds of participants, it was not feasible for the researcher to allow all participants to report in their L1. Instead, participants were asked to report in Chinese, the target language, or English, which is supposed to be used commonly by the majority of international students. The language used in the verbal reports and free recall thus might, to some extent, influence the readers' performance outcomes. Lastly, given the diverse backgrounds of participants in the present study, the subsequent conclusions may not be generalized to all CSL learners.

Chapter 4 Findings

4.1 Introduction

As described in Chapter 3, the findings for this study were obtained from reading tasks and a questionnaire survey. The questionnaire survey was used to tap into the participants' self-reflections, while the reading tasks were aimed at revealing the actual reading activities. The findings are presented in the following three main sections. Section 4.2 first presents the quantitative results of questionnaire survey, which shows the participants' perceptions about their use of reading strategies in both L1 reading and CSL reading. The purpose was to investigate the possible correlation of CSL reading strategies with L1 literacy backgrounds, overall CSL proficiency and CSL reading proficiency. Section 4.3 then illustrates the quantitative and qualitative analyses of the verbal reports and free recall in the reading tasks. The findings from the reading tasks were also used to examine the possible relationship between CSL reading strategies and other variables in CSL reading, including L1 background, overall CSL proficiency and CSL reading proficiency. Therefore, comparisons have been made with the results of the questionnaire survey. Finally, in Section 4.4, the findings derived from this study are summarized.

4.2 Findings of questionnaire survey

75 participants were asked to reflect on their use of reading strategies in both L1 and CSL reading by filling in the SRS. Their CSL proficiency levels ranged from elementary, to intermediate and advanced. They could also be categorized into two

groups according to their L1 backgrounds, i.e. CCS learners and NCCS learners. The valid number of returned questionnaires is 74. The findings of the questionnaire survey are shown in Sections 4.2.1-4.2.3. Section 4.2.1 reveals the adult learners' general patterns of applying CSL reading strategies, including the most and least frequently used strategies. Section 4.2.2 examines the possible relationship between the use of CSL reading strategies and the participants' CSL proficiency levels. Section 4.2.3 focuses on the influence of L1 literacy on CSL reading strategies. Comparisons were made with participants as a whole group, and within the two subgroups of CCS and NCCS learners. The findings from the questionnaire survey are then summarized in Section 4.2.4.

4.2.1 Most and least used CSL reading strategies among adult learners

In total, there were thirty-one reading strategies listed in the questionnaire, i.e. the SRS. Table 4.1 demonstrates the complete list of reading strategies in four categories.

Table 4.1.

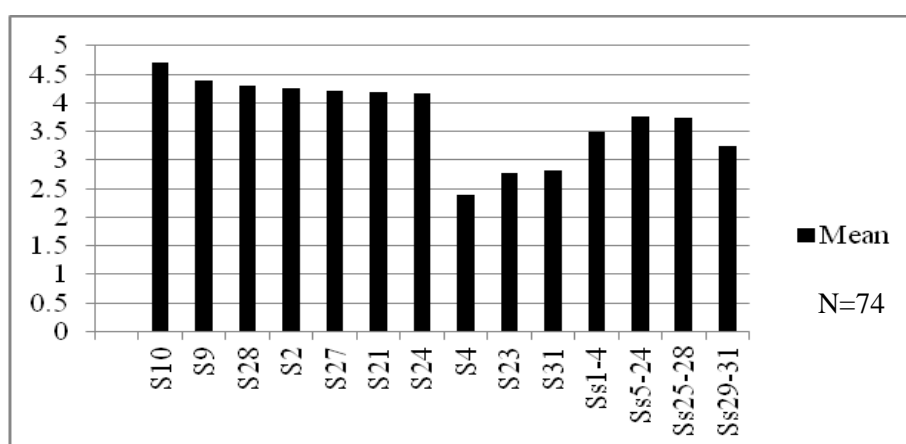
List of Reading Strategies

Category 1 (S1-S4)	1. I have a goal when I read.
	2. I examine titles and subheadings before reading.
	3. I skim the text to get a general idea about the text.
	4. I generate question(s) before reading.
Category 2 (S5-S24)	5. I try to understand the meaning of each character.
	6. I try to understand the meaning of each word.
	7. I use radicals to guess the meanings of unknown characters.
	8. I try to parse the sentence into meaning units
	9. I try to use context clues to interpret words or phrases.
	10. I reread sentences or paragraphs when the content is difficult.
	11. I paraphrase phrases or sentences.
	12. I translate Chinese into my native language.
	13. I think in both Chinese and my native language.
	14. I make prediction(s) about the text content.
	15. I mark the text or take notes when I read.
	16. I try to distinguish what is important and what is not.
	17. I refer to previous sentences and ideas.
	18. I go back and forth in the text to find relations among ideas.
	19. I check my understanding.
	20. I correct my behavior (e.g., when losing concentration).
	21. I change my reading rate when necessary.
	22. I try to recognize the text structure.
	23. I react to the author's writing style.
	24. I use prior knowledge.
Category 3 (S25-S28)	25. I formulate question(s) when I read.
	26. I speak out or explain ideas to myself when I read.
	27. I try to picture or visualize what I read.
	28. I seek to external sources (e.g., dictionary, teacher, etc.)
Category 4 (S29-S31)	29. I use questions, notes or graphs to guide my reading.
	30. I analyze and evaluate the information in the text.
	31. I summarize what I read (e.g., write after reading).

Note. Category 1: Preparing to read; Category 2: Interpreting words, sentences and ideas in the text; Category 3: Going beyond the text; Category 4: Organizing, restructuring, and synthesizing information in the text. S refers to Strategy. Ss means Strategies in the following.

The results indicate that there were seven reading strategies most frequently used by the CSL adult learners, namely S10, S9, S28, S2, S27, S21, and S24 (see Figure 4.1). The mean scores range between 4 and 5, which denotes that participants often or always applied these strategies. On the other hand, the average scores of S4, S23 and S31 are all below 3, suggesting that the participants seldom used these strategies in CSL reading. In terms of the application of different categories of CSL reading strategies, the preferences were mainly distributed to Category 2 and Category 3, whereas Category 1 and Category 4 was used only occasionally .

Figure 4.1. Most and Least Frequently Used CSL Reading Strategies



4.2.2 The application of reading strategies at elementary, intermediate and advanced levels

In order to explore further if there were any differences in the application of reading strategies across different CSL proficiency levels, a one-way ANOVA analysis was conducted. The results suggest that there was no difference in the

application of the four categories of CSL reading strategies across the three levels. Nevertheless, when using individual strategy as the dependent variable, significant differences were discovered with regard to S3 (I skim the text to get a general idea about the text), S5 (I try to understand the meaning of each character), S6 (I try to understand the meaning of each word), and S16 (I try to distinguish what is important and what is not) (see Table 4.2 & Table 4.3).

Table 4.2.

One-way ANOVA Analysis of Using Reading Strategies across Elementary, Intermediate and Advanced Levels

		Sum of Squares	df	Mean Square	F	Sig.
S3	Between Groups	10.766	2	5.383	3.364	.040
	Within Groups	113.612	71	1.600		
	Total	124.378	73			
S5	Between Groups	11.268	2	5.634	5.275	.007
	Within Groups	75.826	71	1.068		
	Total	87.095	73			
S6	Between Groups	12.298	2	6.149	5.195	.008
	Within Groups	84.040	71	1.184		
	Total	96.338	73			
S16	Between Groups	10.174	2	5.087	6.792	.002
	Within Groups	53.177	71	.749		
	Total	63.351	73			

* $p=0.05$

Table 4.3.

Post-Hoc: Multiple Comparisons

Dependent Variable	(I) Overall Chinese proficiency level	(J) Overall Chinese proficiency Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
S3	Elementary	Intermediate	-.035	.358	.922	-.75	.68
		Advanced	-.855*	.386	.030	-1.62	-.09
	Intermediate	Elementary	.035	.358	.922	-.68	.75
		Advanced	-.820*	.353	.023	-1.52	-.12
	Advanced	Elementary	.855*	.386	.030	.09	1.62
		Intermediate	.820*	.353	.023	.12	1.52
S5	Elementary	Intermediate	.624*	.292	.036	.04	1.21
		Advanced	1.015*	.315	.002	.39	1.64
	Intermediate	Elementary	-.624*	.292	.036	-1.21	-.04
		Advanced	.391	.288	.178	-.18	.97
	Advanced	Elementary	-1.015*	.315	.002	-1.64	-.39
		Intermediate	-.391	.288	.178	-.97	.18
S6	Elementary	Intermediate	.605	.307	.053	-.01	1.22
		Advanced	1.067*	.332	.002	.41	1.73
	Intermediate	Elementary	-.605	.307	.053	-1.22	.01
		Advanced	.462	.303	.132	-.14	1.07
	Advanced	Elementary	-1.067*	.332	.002	-1.73	-.41
		Intermediate	-.462	.303	.132	-1.07	.14
S16	Elementary	Intermediate	-.559*	.245	.025	-1.05	-.07
		Advanced	-.970*	.264	.000	-1.50	-.44
	Intermediate	Elementary	.559*	.245	.025	.07	1.05
		Advanced	-.411	.241	.093	-.89	.07
	Advanced	Elementary	.970*	.264	.000	.44	1.50
		Intermediate	.411	.241	.093	-.07	.89

*. The mean difference is significant at the 0.05 level.

A significant difference was found between the elementary learners and those from the other two levels in using S5. Also, the elementary learners did not use S16 as frequently as the intermediate and advanced learners. These differences can be attributed to the low CSL proficiency of the elementary learners. In comparison, with higher CSL proficiency, the advanced learners were able to read quickly, and tended to apply S3, skimming the text to get a general idea more frequently than the elementary and intermediate learners did. As for the use of S6, the elementary learners used decoding strategies more frequently at the word level. However, no significant difference was found between elementary and intermediate learners, or between intermediate and advanced learners.

Given that no significant difference was detected in the categories of reading strategies across elementary, intermediate and advanced levels, there seems to be no discernible progression in the use of reading strategies according to the self-reflections of the CSL adult learners. Nevertheless, since the learners across the three levels differed in their use of S3, S5, S6 and S16, the use of these reading strategies might, to some extent, be influenced by their overall Chinese proficiency levels. At the elementary level, the CSL learners' application of reading strategies was restrained to bottom-up processing such as decoding Chinese characters and words; the advanced CSL learners preferred a top-down approach, such as first skimming to get a general idea of text content and then continuing reading; and the intermediate learners were in between.

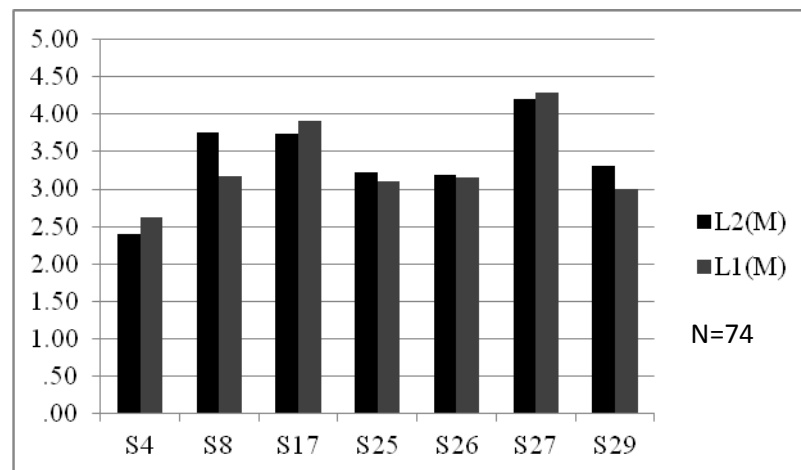
4.2.3 The application of CSL reading strategies by learners of different L1 literacy backgrounds

Besides overall CSL proficiency, it was anticipated that the use of CSL reading strategies could also be influenced by L1 literacy. This section aims at exploring whether the use of reading strategies in CSL reading is connected with that in L1 reading, and whether or not the application of CSL reading strategies is correlated with the learners' L1 backgrounds. The participants were divided into two groups according to their L1 backgrounds, CCS and NCCS.

4.2.3.1 L1 reading strategies and CSL reading strategies

Correlation analysis was used to investigate the relationship between strategies used in L1 reading and those used in CSL reading. Correlation can be detected among all strategies listed in the SRS, except S5 (I try to understand the meaning of each character), S7 (I use radicals to guess the meanings of unknown characters), S12 (I translate Chinese into my native language) and S13 (I think in both Chinese and my native language), which are considered to be unique to CSL reading. However, the effect sizes vary among the thirty-one strategies in the SRS. A good level of correlation (Pearson's $r > 0.6$) was found among the use of seven reading strategies between L1 reading and CSL reading: S4, S8, S17, S25, S26, S27 and S29. As shown in Figure 4.2, in both L1 and CSL reading, CSL learners often referred to previous contexts during text comprehension (S17); they tried to imagine what they had read (S27); they occasionally needed to parse sentences into units (S8), generating questions during reading (S25) and take notes to guide their reading (S29); but generally they were not active in monitoring their reading by generating questions before reading (S4) or self-explaining during reading (S26).

Figure 4.2. Correlated Reading Strategies in L1 Reading and CSL Reading



Based on the findings above, it appears that, with adult learners, the use of CSL reading strategies is influenced greatly by their L1 reading experiences. Most strategies used in CSL reading are likely to be transferred from the learners' L1 reading. Nevertheless, there are characteristics specific to CSL reading. A major reason might be the demands of Chinese characters. CSL learners need to apply strategies that might not be found in their L1 reading knowledge, such as guessing the meaning of a character by its radical. Another unique strategy in CSL reading is translating Chinese into L1. While there is usually only one language in L1 reading, there are two languages interacting during CSL reading, that is Chinese and the learner's L1. CSL learners might try to attach equivalent concepts in L1 during CSL reading, but it is unlikely for them to translate texts into L2 when reading in their L1.

4.2.3.2 The application of CSL reading strategies by learners of different L1 backgrounds

With the mean scores of all CSL reading strategies as a whole group and individual CSL reading strategy as dependent variables, an independent-samples T-test was run to examine if there was any difference in the use of CSL reading strategies between CCS and NCCS learners,. With the application of all CSL reading strategies as a whole group, no significant difference was found between CCS and NCCS learners. It was found, however (see Table 4.4), that the CCS and NCCS learners differed statistically in the use of individual strategies, including S3, S21 and S31. As illustrated further in Figure 4.3, the CCS learners tended to use S3 and S21 more frequently, that is they tended to skim the text first and change their reading speed, whereas the NCCS had a higher tendency to use S31, summarizing what they read.

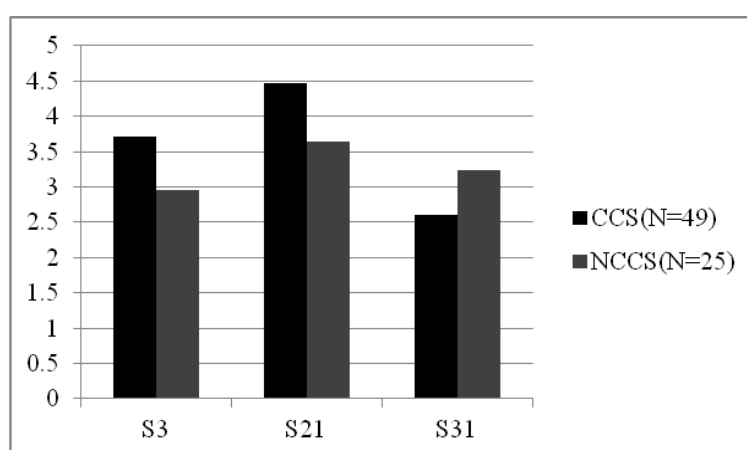
Table 4.4.

Different Use of CSL Reading Strategies between CCS and NCCS Learners Found by T-test

Strategy	t-test for Equality of Means						
	T	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper
S3	2.388	46.302	.021*	.754	.316	.119	1.390
S21	3.541	33.168	.001*	.829	.234	.353	1.306
S31	-2.031	47.448	.048*	-.628	.309	-1.250	-.006

*. The mean difference is significant at the 0.05 level.

Figure 4.3. Mean Scores of S3, S21&S31



This finding might have resulted from the composition of the participants in this study. The number of CCS learners (49) was twice of that of NCCS learners (25). In addition, the majority of participants at the advanced level was from the CCS group. Probably because of their higher Chinese proficiency level, the CCS learners were capable of reading quickly by skimming and adjusting their reading rates when necessary. Therefore, a correlation analysis was conducted between two split groups to explore any difference in the way that L1 reading strategies influence the use of CSL reading strategies. As shown in Table 4.5, it was likely for the CCS learners to transfer Ss8, 20, 24 from L1 to CSL reading, while the NCCS learners were inclined to use S9 and S10 in both L1 reading and CSL reading.

Table 4.5.

Correlated Strategies in L1 reading and CSL reading

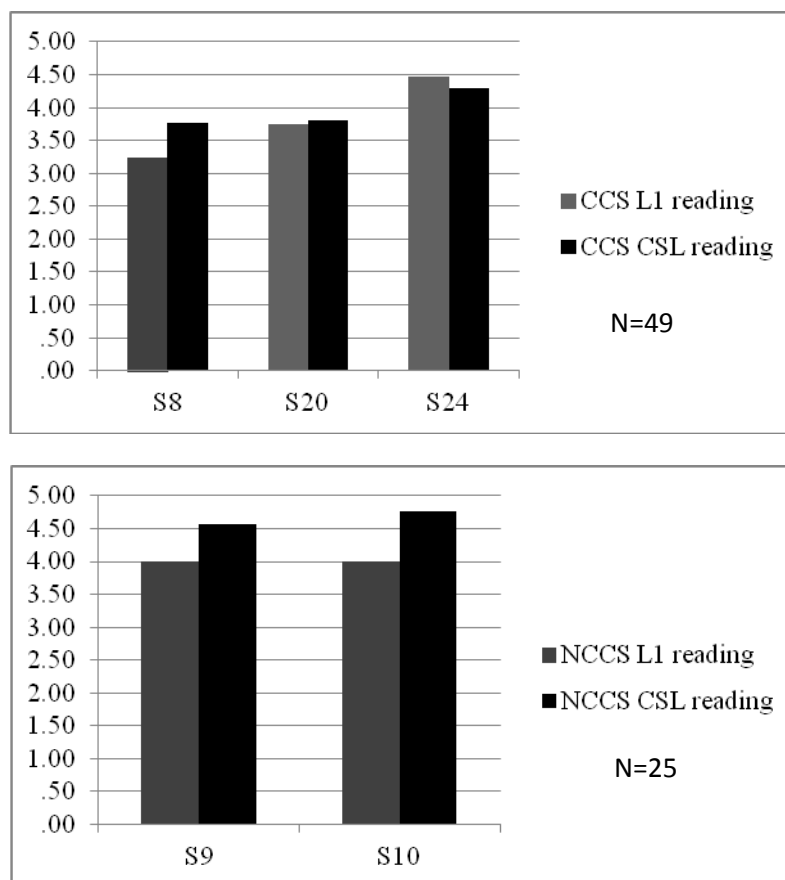
CCS & NCCS	S4 I generate question(s) before reading.
	S17 I refer to previous sentences and ideas.
	S25 I formulate question(s) when I read.
	S26 I speak out or explain ideas to myself when I read.
	S27 I try to picture or visualize what I read.
Only CCS	S8 I try to parse the sentence into meaning units.
	S20 I correct my behavior (e.g., when losing concentration).
	S24 I use prior knowledge.
Only NCCS	S9 I try to use context clues to interpret words or phrases.
	S10 I reread sentences or paragraphs when the content is difficult.

Note. A good level of correlation was detected (Pearson's $r > 0.6$).

As indicated in Figure 4.4, S24 (I use prior knowledge) was more likely to be transferred from L1 reading to CSL reading by the CCS learners. The knowledge of L1 would be applied more actively by the CCS learners than by the NCCS learners. In addition, the CCS learners made more frequent use of S8, which, as reported by some CCS participants, was a learning habit in the Chinese courses they had studied back in their home countries. The NCCS learners, on the other hand, showed a preference for rereading and using contextual clues to achieve comprehension.

Figure 4.4. Mean Scores of Reading Strategies Based on Split-group Correlation

Analysis



In sum, both the CCS and NCCS learners used similar strategies in L1 and CSL reading, but different patterns were found between the two groups in employing strategies in CSL reading. Probably because of the similarity between L1 and Chinese, the CCS learners frequently used their prior knowledge during CSL reading, while the NCCS learners adopted different approaches to aid their comprehension, including rereading and using context clues. It was also found that the CCS learners often skimmed the text before reading and adjusted their reading speeds during CSL reading, whereas the NCCS learners tended to summarize the general idea after reading. It is unclear, however, whether this result is due to the relatively larger number of CCS learners with higher CSL proficiency levels.

4.2.4 Summary of questionnaire survey findings

The results of the questionnaire survey reveal the participants' self-reflection on their predilection or dislike for reading strategies in both L1 reading and CSL reading. It was shown that, overall, the CSL adult learners tended to use S10 (I reread sentences or paragraphs when the content is difficult), S9 (I try to use context clues to interpret words or phrases), S28 (I seek to external sources), S2 (I examine titles and subheadings before reading), S27 (I try to picture or visualize what I read.), S21 (I change my reading rate when necessary) and S24 (I use prior knowledge), but seldom used S4 (I generate questions before reading), S23 (I react to the author's writing style) and S31 (I summarize what I read).

The use of reading strategies in CSL reading is correlated with that in L1 reading, except for a few strategies that are specific to CSL reading because of the unique writing system of Chinese, such as S5 (I try to understand the meaning of each character), S7 (I use radicals to guess the meanings of unknown characters), S12 (I translate Chinese into my native language) and S13 (I think in both Chinese and my native language).

The application of CSL reading strategies was also influenced by CSL proficiency level. While the elementary learners used a bottom-up approach, spending many of their efforts on decoding Chinese characters and words in the text, the intermediate and advanced learners were capable of going beyond text content and picturing what they read. Compared with the intermediate learners, the advanced learners would skim the text more frequently to get the theme before reading. However, there is no clear developmental pattern in the use of CSL reading strategies across the three levels based on the participants' self-perceptions.

Besides CSL proficiency, L1 background is another factor that impacts upon the use of CSL reading strategies in that CCS learners and NCCS learners showed different tendencies. Probably because of the connection with the Chinese language and culture, CCS learners tended to apply their prior knowledge in CSL reading. NCCS learners, on the other hand, resorted to other means to improve their reading comprehension, including rereading and using contextual information.

In conclusion, the application of strategies in CSL reading is influenced by both overall CSL proficiency level and L1 literacy background of CSL adult learners.

4.3 Findings of verbal reports and free recall

Both quantitative and qualitative approaches were adopted to analyze the data gathered from the verbal reports and free recall. While the questionnaire survey results were derived from the participants' self-perceptions, the verbal reports reflect the actual application of CSL reading strategies. Free recall was scored by an independent rater and the researcher in order to divide the participants at each level into two subgroups, i.e. more proficient and less proficient CSL readers. The major findings are presented in Sections 4.3.1 and 4.3.2. Section 4.3.1 depicts the use of CSL reading strategies observed from the verbal reports and investigates its possible relationship with overall CSL proficiency level as well as L1 background. Comparisons with the findings of the questionnaire survey are drawn as well. Section 4.3.2 then examines the role of reading strategies in CSL reading performance.

4.3.1 The use of CSL reading strategies observed from the verbal reports

The verbal reports were transcribed and encoded as corresponding reading strategies. Regarding the application of CSL reading strategies, comparisons were made among learners of different CSL proficiency levels and L1 backgrounds, as reported in Sections 4.3.1.1 and 4.3.1.2 respectively.

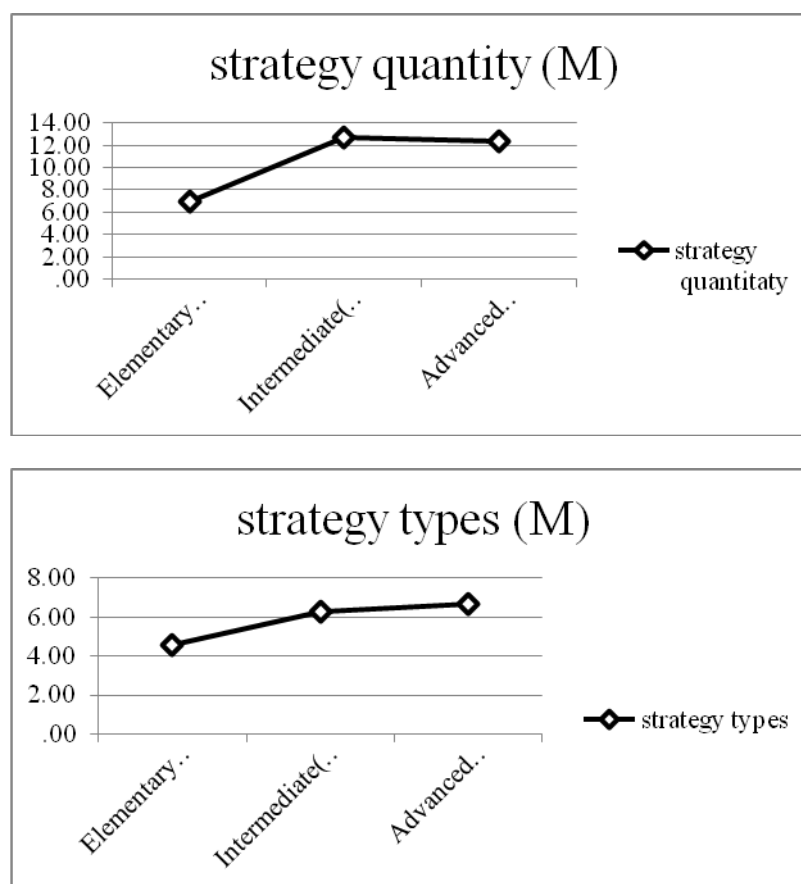
4.3.1.1 Comparisons of CSL reading strategies at elementary, intermediate and advanced levels

This section compares the use of CSL reading strategies at elementary, intermediate and advanced levels, including strategy quantity, number of strategy types, most and least used strategies, and categories of reading strategies.

4.3.1.1.1 Strategy quantity and number of strategy types

As shown in Figure 4.5, the intermediate and advanced learners significantly exceeded the elementary learners, not only in strategy quantity, but also in the number of strategy types. Strategy quantity and the number of strategy types observed from the verbal reports of the intermediate and advanced learners were around twice those of the elementary learners. Compared with the elementary learners, the intermediate and advanced learners were more aware of using reading strategies in CSL reading. Overall, the intermediate learners used a bigger number of CSL reading strategies than the advanced learners did, but the advanced learners showed slightly more variance in terms of strategy types.

Figure 4.5. Comparisons of Strategy Quantity and Strategy Types at Each Level



Although the intermediate and advanced learners appeared to resemble each other in terms of strategy quantity and the amount of strategy types, a close inspection of their verbal reports revealed a difference between the two groups in the methods of using CSL reading strategies. As shown in Table 4.6, the reading strategies used by the advanced learners were more complex than those used by the intermediate learners. The advanced learners' verbal reports show a cluster of reading strategies applied coherently. The responses of the intermediate learners, on the other hand, tended to be simpler, with only one or two reading strategies combined.

Table 4.6.

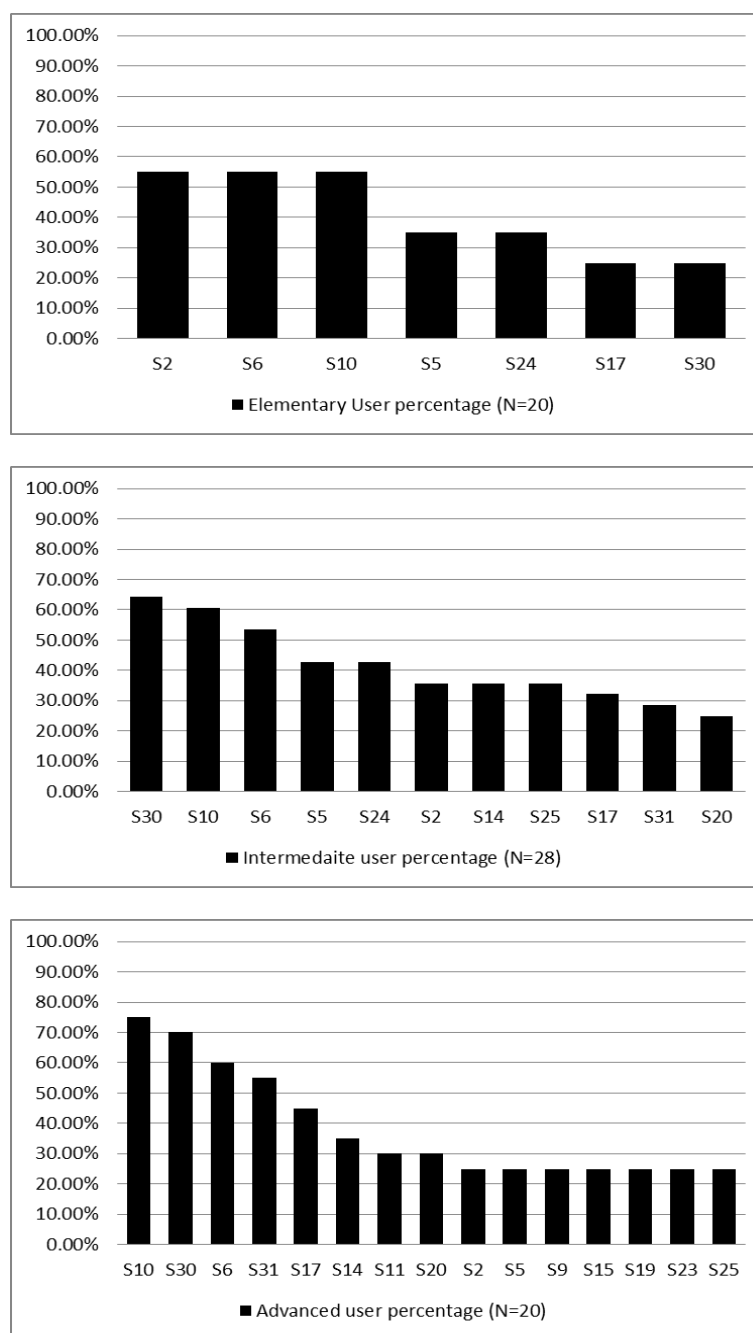
Examples of Reading Strategies Used by Intermediate and Advanced Learners

Subject	Verbal report example (narrative text)	Correspondent reading strategies
61 (Intermediate learner)	哦，这个是怎么表示呢？这个是眼睛看的时候看的度量吗？	14,25
69 (Advanced learner)	这个文章说话的人是他的爸爸吧？爸爸还是兄弟姐妹？不是姐妹吧。因为他说“大人”，所以我觉得是爸爸妈妈。	14,17,30

4.3.1.1.2 Most and least used CSL reading strategies

The reading strategies used by more than 25% of the participants at each level are presented in Figure 4.6. It is shown that S6 was used by more than half of the participants across the three levels. Even if they had reached the advanced level in terms of overall CSL proficiency, the CSL learners still needed to make an effort to decode at the word level when reading Chinese texts. This finding is congruent with that reported by Everson & Ke (1997) and Chang (2010) in their studies of English-speaking CSL learners, which suggested that the difficulties in lower level processing will remain for a long time for CSL readers. Decoding efforts were not only limited to the word level. Around one third of the elementary and intermediate learners also tried to understand the meaning of each Chinese character, while the advanced learners showed a lesser tendency to focus on Chinese characters.

Figure 4.6. Most Used CSL Reading Strategies Derived from Verbal Reports



There is another reading strategy shared among learners across the three levels, that is, S10 (I reread sentences or paragraphs when the sentences are difficult). The tendency to use S10 increased as the overall CSL proficiency level improved. But this does not imply that the intermediate and advanced learners were as occupied as the elementary learners by low-level linguistic information in the text. Rather, there

were different purposes and follow-up procedures for *rereading* across the three levels. As shown in Table 4.7, the elementary learners might have tried to reread and link with their Chinese vocabulary. For example, Participant 4 seemed to be confused with the meaning of "他老说 *ta lao shuo*", and tended to reread and interpret as "他老 *ta lao* (literally meaning he is old)" by linking with the word *lao* learned before. In contrast, the intermediate and advanced learners were more flexible in combining rereading with other strategies to overcome difficulties encountered in CSL reading. The verbal reports of Participant 20 and Participant 48 indicate that the intermediate and advanced learners might use S17 to refer to previous sentence(s) to interpret complex content. Also, they were not afraid to use S14, making predictions about text contents.

Table 4.7.

Examples of Using Rereading Strategies at Each Level

Participant No.	CSL Proficiency Level	Verbal report(s)	Correspondent CSL Reading Strategies
4	Elementary	他老，他老说。他老。 (From narrative text)	10
20	Intermediate	I don't understand this sentence. (reread the previous sentences). He doesn't have very good cafe to drink. (from argumentative text)	10,14,17
48	Advanced	"我们不大的房间"(reread)。这里的我是父亲吗？ (from narrative text)	10,14,23,30

Compared with the elementary learners, the intermediate and advanced learners were more critical about what they read. In Figure 4.6, it is shown that both intermediate and advanced learners were inclined to use S30, S14, and S20. They frequently analyzed and evaluated the text information, and did not show much hesitation to make predictions. When there was misunderstanding, they also actively corrected their reading behavior. But there is one characteristic that distinguishes the advanced learners from the intermediate learners—the frequent use of summary (S31) and paraphrase (S11) (see Figure 4.6). One reason might be that the advanced learners commanded a greater repertoire of CSL vocabulary than the intermediate learners, and it was easier for them to organize and express their comprehension of what they read. Another reason might be the influence of classroom instruction. As reported by some advanced participants, teachers in reading courses often required them to read texts within a limited time period and then summarize the general idea. Therefore, the advanced learners might have been prone to transfer their reading experience into the reading tasks of this study.

In this section, the reading strategies that were used, by far, by the most CSL adult learners across three levels have been illustrated and discussed. Table 4.8, in contrast, reveals the reading strategies that were not identified in the participants' verbal reports.

Table 4.8.

Least Used CSL Reading Strategies Derived from Verbal Reports

Proficiency level	Strategy not found in the verbal reports
Elementary	Ss1,3,4, 16,21,27,28
Intermediate	Ss1,4,28
Advanced	Ss1,4,28

It is shown here that that elementary learners did not use S3 (I skim the text to get a general idea about the text), S16 (I distinguish what is important and what is not) and S21 (I change my reading rate when necessary). The elementary learners were prone to read by a bottom-up approach, in which they read character-by-character or word-by-word at a slow pace. The intermediate and advanced learners, instead, had a higher tendency to skim the text as a preparatory step for further reading. Probably due to their low CSL proficiency level, the elementary learners were not as linguistically competent as the intermediate and advanced learners to distinguish more important contents from less important ones.

According to Table 4.8, S27 was not identified among the verbal reports of the elementary learners either. The lack of intent to imagine what they were reading indicates that the elementary learners constructed different mental representation of text comprehension from the intermediate and advanced learners. As shown in Figure 4.6, there is an increasing trend from the elementary level to advanced level to use S17, which suggests that the elementary learners did not embed text information into their comprehension as much as the intermediate and advanced learners did as their reading processing unfolded. The comprehension of elementary learners

might still stay at the surface or textbase level, whereas the intermediate and advanced learners showed intention to build a situation model based on their understanding.

It is possible that the research design might have hindered the use of the remaining reading strategies, i.e. S1, S4 and S28. Since the participants were told to read naturally as they do in daily reading, the reading goal was already set for them before reading, hence it was unlikely to find them using S1. Additionally, they were not allowed to refer to external sources for help during reading, therefore they would not have used S28 either. It was expected that S4 (I generate questions before reading) would be used after the subjects had examined the title, before they read the main content. However, the participants did not show any tendency to use it based on the findings of the reading task and the questionnaire survey. This, in turn, suggests that S4 might need to be deleted from the SRS.

This section has revealed the most and least used CSL reading strategies. Regardless of CSL proficiency level, rereading and decoding strategies at the character and word levels were used by most of the CSL learners. As the CSL proficiency level increased, however, there was a decline in decoding Chinese characters. Additionally, compared with the elementary learners, the intermediate and advanced learners were more active in monitoring their reading by evaluating and analyzing text information, making predictions and correcting misunderstandings. On the other hand, possibly limited by their CSL proficiency when applying reading strategies, the elementary learners showed a low tendency to use S3, S16, S21 and S27. Of the least-used reading strategies, three were not observed in the verbal reports of the learners from any of the three levels. These were S1, S4 and S28.

Because of the research design, S1 and S28 were not found to be used by learners from any of the three levels; whereas S4 might indeed have been neglected by the CSL learners in CSL reading.

4.3.1.1.3 Categories of CSL reading strategies

Four categories of CSL reading strategies are depicted in the theoretical framework of the present study: Category 1 (Strategies 1-4), Preparing to read; Category 2 (Strategies 5-24), Interpreting words, sentences and ideas in the text; Category 3 (Strategies 25-28), Going beyond the text; and Category 4 (Strategies 29-31), Organizing, restructuring, and synthesizing information in the text. It is implied in the results that there are both quantitative and qualitative differences across the three levels in using the four categories of CSL reading strategies.

Regarding Category 1, all participants tended to prepare their reading by using S2, examining the titles and subheadings before reading (see Figure 4.6). However, the intermediate and advanced learners were inclined to skim the text as a preparatory step before reading the main content.

As for Category 2, the number of strategy types increased as the participants' CSL proficiency levels improved (see Table 4.9). As discussed previously, the elementary learners tended to use strategies to decode the meanings of characters or words, such as rereading. In spite of the higher CSL proficiency levels, the intermediate and advanced learners also needed to put effort into decoding, but they were more confident in making predictions of text content. The advanced learners, on the other hand, had a command of more types of reading strategies to interpret the

text, such as S9 (I try to use context clues to interpret words or phrases), S11 (I paraphrase phrases or sentences) and S23 (I react to the author's writing style). They would also use S19 to keep checking their understanding so as to maintain intact comprehension.

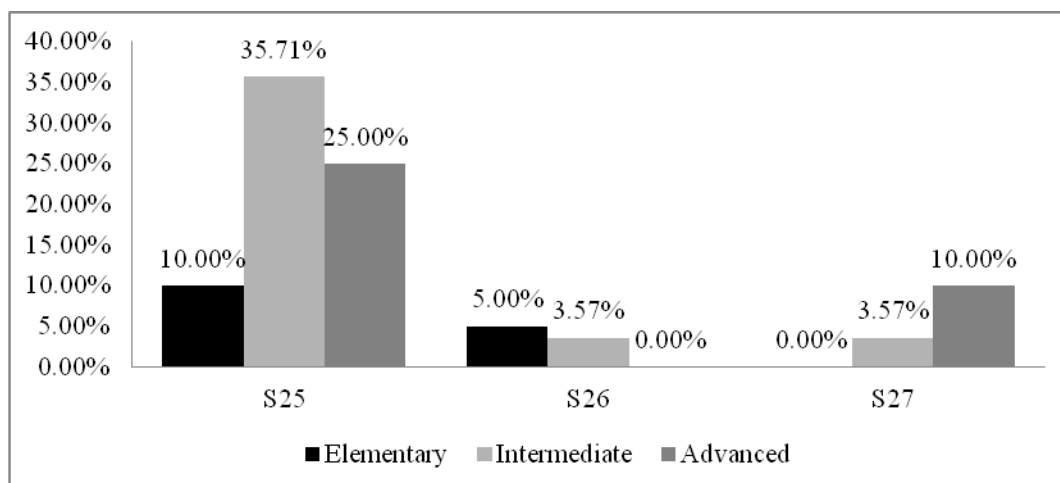
Table 4.9.

Strategies of Category 2 Used by over 25% of Participants at Each Level

CSL Proficiency level	Strategies of over 25% users
Elementary	Ss 5,6,10,17,24
Intermediate	Ss5,6,10,14,17,24
Advanced	Ss5,6,9,10,11,14,15,17,19,23

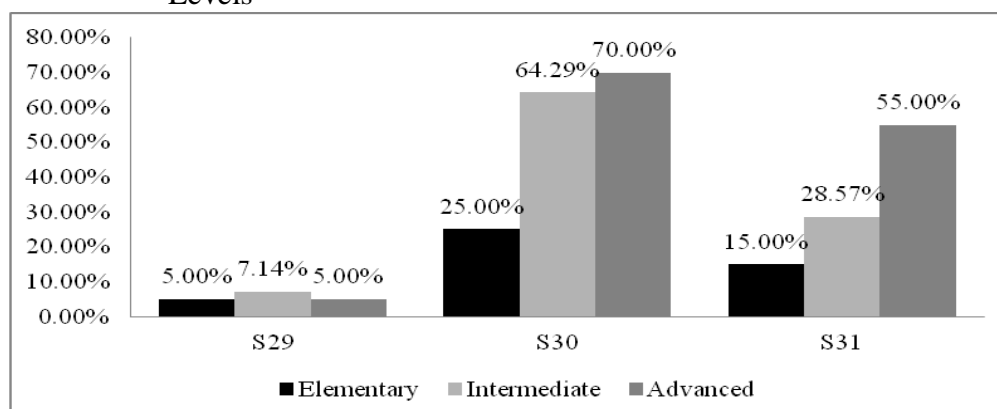
There is a higher tendency for the intermediate and advanced learners to use reading strategies from Category 3 Ss 25-27, apart from S28 (see Figure 4.7). Both groups did generate questions during reading, which suggest that they were not just receiving information passively from their reading. In contrast, the elementary learners were less inclined to use Category 3 reading strategies. As mentioned previously, no use of S27, picturing or visualizing what they read, was observed among the elementary learners. Although S27 was identified among the intermediate and advanced learners, the frequency was quite low—— only three participants tried to imagine the situation described in the text.

Figure 4.7. The Percentage of Participants Using Ss25-27 across Three Proficiency Levels



Finally, all strategies within Category 4 were found to be applied by participants at all levels (see Figure 4.8), but a higher frequency of usage was found among those with higher CSL proficiency levels. Both intermediate and advanced learners showed a preference to analyze and evaluate text contents, but the advanced learners had a much higher tendency to summarize what they had read.

Figure 4.8. The Percentage of Participants Using Ss29-31 across Three Proficiency Levels



4.3.1.1.4 Summary of the use of reading strategies across elementary, intermediate and advanced levels

Based on the results above, there is a developmental pattern in the use of reading strategies across the three levels. As the overall CSL proficiency level improved, there was an increasing trend in strategy quantity, number of strategy types, and categories of reading strategies in CSL reading. Despite this, a higher frequency of reading strategy usage was demonstrated by the intermediate learners than the advanced learners, and there was more variance in the strategy types employed by the advanced learners.

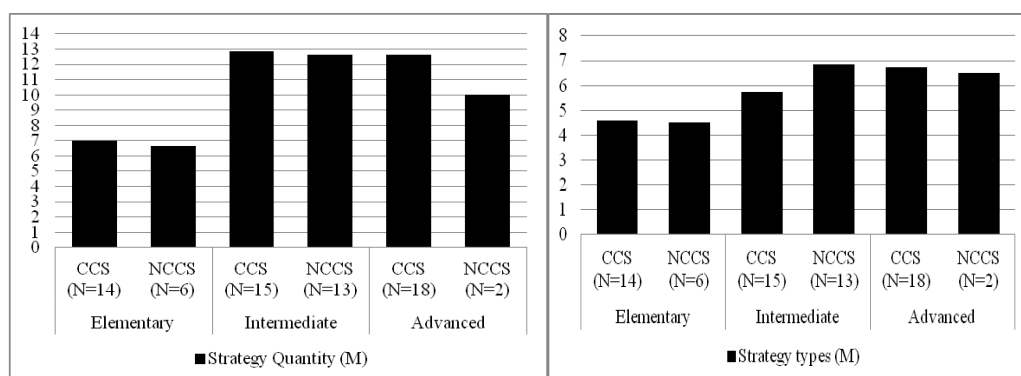
When applying strategies to constructing mental comprehension representations, the elementary learners tended to use strategies at the surface level, being passive receivers of text information, whereas the intermediate and advanced learners had a higher tendency to build up a situational model by monitoring their reading cognitively. However, it was found that even when CSL adult learners had reached the advanced level, they still needed to apply strategies to decode text information at the character or word level, suggesting that the obstacles in lower-level text processing will remain a long time for CSL readers.

4.3.1.2 The use of CSL reading strategies between CCS learners and NCCS learners

This section examines whether the use of CSL reading strategies is correlated with CSL learners' L1 backgrounds. As shown in Figure 4.9, there is no obvious difference with regard to strategy quantity and the variety of strategy types between the two groups at any level.

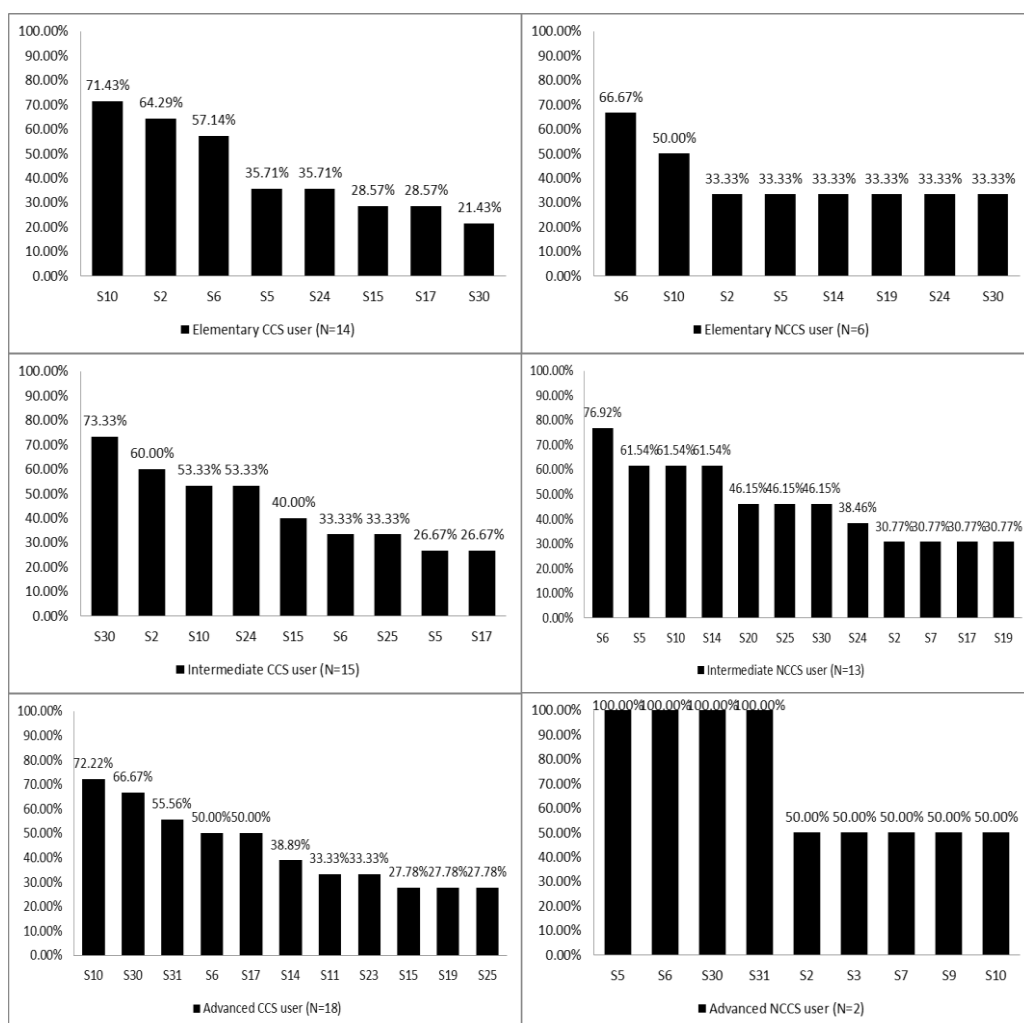
Figure 4.9. Comparisons of Strategy Quantity and Strategy Types between CCS

Learners and NCCS Learners



However, there are both similarities and differences between CCS and NCCS learners in the strategy types they used. Again, the reading strategies used by more than 25% of the participants within each level were analyzed. As indicated in Figure 4.10, at the elementary level, the top four choices for both CCS and NCCS learners are S2, S5, S6 and S10, which means both groups were inclined to use bottom-up decoding strategies. Therefore, at the beginning stage, despite the potential advantage over NCCS learners because of the relatively similar L1 background with Chinese, CCS learners also needed to apply effort to decode Chinese characters and words. At the intermediate level, however, decoding seemed to be less of a problem for the CCS learners. Instead, most of them were more concerned with analyzing and evaluating text contents at the higher level (as shown by the use of S30). The NCCS learners, in contrast, still gave most of their attention to understanding the meaning of characters and words.

Figure 4.10. Comparisons of CSL Reading Strategies between CCS Learners and NCCS Learners



There was another difference between the CCS and NCCS learners within the intermediate group—the CCS learners had more reliance on S24, using their prior knowledge in CSL reading. The prior knowledge include L1 knowledge, cultural experience, and existing CSL knowledge. For example (see Table 4.10), Participant 66, a female Japanese student, frequently consulted her L1 and cultural experience, and utilized the similarities with Chinese when reading Chinese texts. On the other hand, Participant 61, who was also Japanese, comprehended the sentence by relating to vocabulary learned previously.

Table 4.10.

Examples of Using Prior Knowledge by CCS Intermediate Learners

Participant No.	Verbal report(s) (narrative text)	Correspondent CSL Reading Strategies
66	“高马大了”，不知道，马是 horse。像马一样大吗？我觉得是文化的关系，因为日本马没有特别的意思。	6,24
66	“孩子是父母这张弓上射出去的箭。”(Participant pretended to shoot an arrow.)看汉字(弓箭)，一样的 (as in Japanese)。	27,24
61	“孩子是父母这张弓上射出去的箭。”学过了这个成语，但是忘记怎么读了。意思明白。	6,24

With the relatively broader linguistic and cultural distance from Chinese, the intermediate NCCS learners appeared to resort to different means to achieve comprehension. As illustrated in Figure 4.10, a larger proportion of NCCS intermediate learners used S20 and S25 in CSL reading. Instances described in Table 4.11 suggest that the NCCS learners consciously evaluated text information and generated questions when their comprehension was not coherent. They would try to connect text information and revise their false understandings. Reading in this fashion might compensate for their incompetence in decoding.

Table 4.11.

Examples of Using Strategies to Monitor Comprehension by NCCS Intermediate Learners

Participant No.	Verbal reports	Correspondent CSL Reading Strategies
19	"If she wants to try cakes? Oh no. if she wants to learn how to make cakes, she will still invite people to teach. " (From the argumentative text)	19,20
43	“前面医生说，后来我观察..... (reread previous sentences)。哦，是孩子的爸爸在问。”(From the narrative text)	10,19,20
68	“这个是医生说的？为什么医生要这样说？奇怪。哦，不是不是。是自己的问那个戴眼镜的时候这样。”(From the narrative text)	25,19,20

At the advanced level, the composition of the participant pool makes it difficult to draw comparisons, with eighteen CCS learners versus two NCCS learners.

Strategies shared by the two NCCS learners did not differ much from those at the intermediate level; they still used reading strategies to decode Chinese characters.

The CCS learners, on the contrary, no longer showed a high tendency to understand Chinese characters. Rather, they preferred referring to previous content to support their comprehension (as denoted by the use of S17). They also paid attention to other information in the text such as the author's writing style, using S23. There were common strategies used by the two groups though. They still tried to understand the meanings of novel words; yet, different from learners at the elementary and intermediate levels, they showed a higher tendency to summarize

text contents. They not only attended to local text information but also tried to capture the general ideas. Moreover, as stated previously, the advanced learners had a better command of CSL to convert their comprehension into verbal expressions.

To summarize, although the overall strategy quantities and strategy types were similar between the CCS and NCCS learners across the three levels, these two groups showed different developmental patterns in using reading strategies in CSL reading. At the elementary level, both groups were more likely to use bottom-up strategies such as rereading and decoding at the character and word levels. When reaching the intermediate level, the CCS learners put less effort into decoding; instead, they utilized their prior knowledge in CSL reading, including the relationship between their language and cultural background, as well as CSL knowledge. The NCCS learners, on the other hand, still paid much attention to decoding, but used reading strategies such as questioning and correcting to monitor their understanding in the mean time so as to compensate for the distance between their L1 backgrounds and Chinese. At the advanced level, while the NCCS learners still attended to character decoding, the CCS learners did not have the same problem. Apart from focusing on lower-level linguistic information such as Chinese characters and novel words, both the CCS and NCCS learners often got a bigger picture and summarized what they had read.

4.3.1.3 Summary of findings from the verbal reports

The verbal reports reveal the actual use of reading strategies during CSL reading. Analysis was conducted with regard to strategy quantity, number of

strategy types, and categories of reading strategies among learners at the three different CSL proficiency levels, i.e. elementary, intermediate and advanced. It was found that there is progression in the use of reading strategies across the three levels, indicating that the application of CSL reading strategies is correlated with overall CSL proficiency level. Another finding is that there were different developmental patterns in the use of CSL reading strategies between the CCS and NCCS learners, despite the fact that the overall strategy quantities and strategy types were similar between the two groups. At the elementary level, both groups were inclined to use bottom-up strategies such as rereading and decoding at the character or word level. As CSL proficiency level increased, the CCS learners showed less reliance on decoding while decoding strategies were maintained among the NCCS learners. The reason might be that the CCS learners had an advantage over the NCCS learners because of the similarity of their linguistic and cultural backgrounds to Chinese. It is indicated that, besides CSL proficiency, the application of CSL reading strategies is influenced by L1 background.

4.3.1.4 Comparisons of results between verbal reports and questionnaire survey

Similar results were found in both research approaches, as the application of reading strategies is influenced by both overall CSL proficiency level and L1 background.

However, findings from the questionnaire survey failed to illustrate the developmental pattern that was, instead, detected by the analysis of reading tasks. This might have resulted from the participants' lack of understanding about reading strategies. Based on feedback collected from 68 participants, only 47.1%, which is

less than half of them, reported that they had received reading strategy instruction in class. Among them, only 16.2% said they had received reading strategy instruction often in Chinese class, with most of these being intermediate learners. Another reason might be due to the positive bias when the participants filled in the questionnaire. According to the questionnaire survey, the participants would frequently use S27 (I try to picture or visualize what I read). However, the verbal reports revealed that they actually did not start using this strategy until they reached the intermediate or advanced level, and only a few participants out of 68 demonstrated use of S27.

There is also a discrepancy observed in the use of S14 and S30 in the questionnaire survey and the verbal reports. S14 (I make predictions about the text content) and S30 (I analyze and evaluate the information in the text) were found to be used by quite a number of intermediate and advanced learners, based on their verbal reports, but these two strategies did not receive much preference when the participants reflected on their use of strategies in CSL reading by filling in the SRS. Making predictions and analyzing and evaluating require implicit knowledge about cognitive activities during reading, which might not have been realized by the participants in the questionnaire survey. In contrast, the verbal reports on reading tasks might overtly reveal more information about CSL readers' online processing, making it possible for researchers to infer reading strategies from participants' verbatim reports during reading. It is also possible that the requirement to perform verbal reports propelled the participants to be more active than they usually were when reading Chinese texts, and thus to think more critically.

Therefore, the findings of the verbal reports provide more insights into the CSL reading strategies used by the adult learners than were found from the questionnaire survey.

4.3.2 Reading strategies and CSL reading performance

In the reading task, the participants were required to perform not only verbal reports during reading, but also free recall after reading the designated text. They were asked to read two Chinese texts catering for their proficiency levels. In other words, there were three different sets of reading materials for the elementary, intermediate, and advanced learners. The recall reports were recorded, transcribed, and then scored at the propositional level, based on the five-level Constructive Activity Scale (Chan, Burtis, Scardamalia & Bereirter, 1992). The total scores represent the reading performances, according to which participants across the three levels were divided into two groups within their own levels, i.e. more proficient (MP) and less proficient (LP) CSL readers (see Table 4.12). Our purpose was to investigate if there is any difference in the use of reading strategies between the two groups and the role played by reading strategy in CSL reading performance. First, in Section 4.3.2.1, comparisons are drawn with regard to the use of reading strategies between MP CSL readers and LP CSL readers.

Table 4.12.

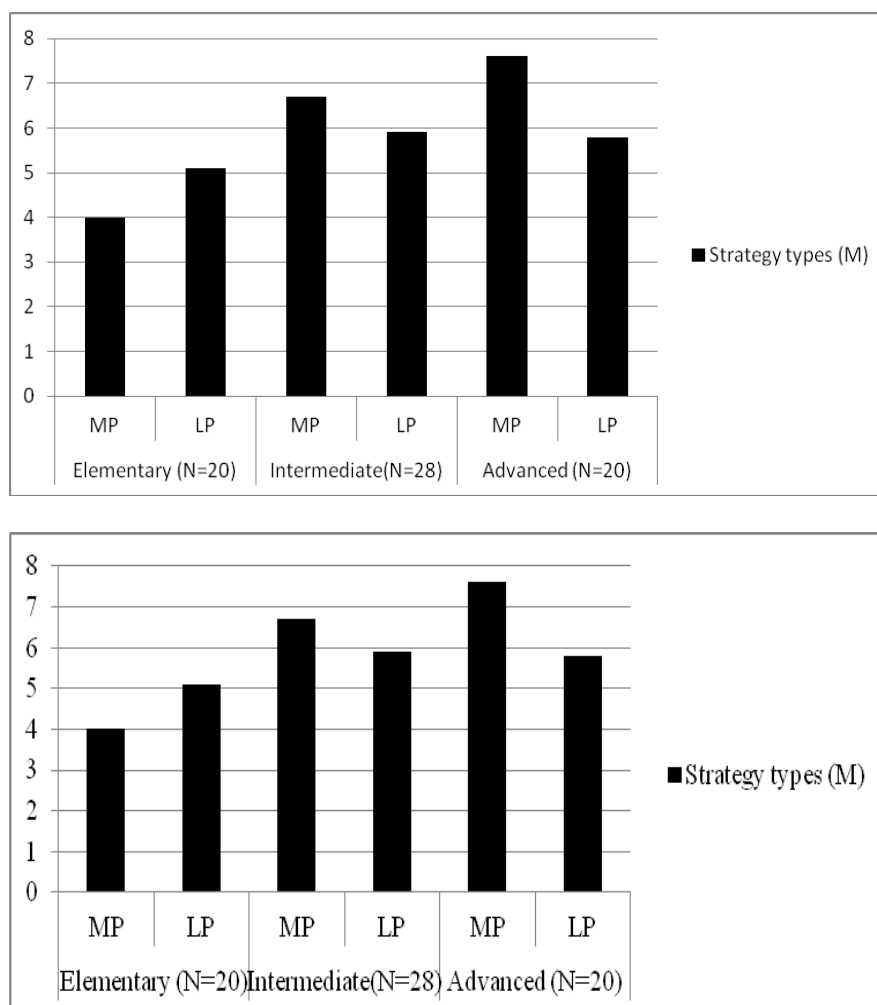
Scores of MP CSL Readers versus LP CSL Readers

CSL Overall Proficiency Level	Elementary (N=20)		Intermediate(N=28)		Advanced (N=20)	
CSL reading proficiency	MP	LP	MP	LP	MP	LP
Total reading scores (M)	36.7	23.3	66.9	30.9	67.3	35.3

4.3.2.1 Comparison of reading strategies used by MP CSL readers and LP CSL readers

The strategy quantities and numbers of strategy types are illustrated and compared for the MP and LP CSL readers within each proficiency level (see Figure 4.11). It is indicated that there were different trends from the elementary, intermediate and advanced levels. At the intermediate and advanced levels, the MP readers not only used more reading strategies than the LP readers did, but also showed more variance in choosing reading strategies in CSL reading. However, at the elementary level, the MP readers were surpassed by the LP readers in both strategy quantity and number of strategy types. It is surprising to find that, for elementary CSL learners, even more frequent use of reading strategies did not lead to improvement in CSL reading performance. One reason might be that the reading strategies were used improperly. Another reason might be that there are other factors that are more prominent than reading strategy in influencing CSL reading performance, such as overall CSL proficiency.

Figure 4.11. Comparing Strategy Quantity and Amounts of Strategy Types between
MP CSL Readers and LP CSL Readers



Further analysis was conducted to examine which reading strategies were employed by the MP and LP CSL readers respectively at each level. The numbers of readers using a certain reading strategy are illustrated in Figures 4.12, 4.13 and 4.14 (p.115-116). In the elementary group, the LP readers exceeded the MP readers in using the majority of reading strategies. The strategies used mostly by the LP readers were S2, S5, S6, S10, S14 and S24. Besides decoding strategies like S5, S6, S10, the LP readers at the elementary level also showed a tendency to examine the title to prepare reading, to make predictions and to use prior knowledge

during reading (as illustrated by the use of S2, S14 and S24). Nonetheless, these conscious actions did not lead to improvement in CSL reading proficiency.

According to the information provided in the questionnaire survey, the average CSL learning time for the LP readers was 12.7 months, while the average learning time for the MP readers was 13.5. This variance in learning time might be attributed to the different CSL proficiency levels. Therefore, at the elementary level, CSL reading performance might be dominated by overall CSL proficiency. Despite the efforts to use reading strategies, the CSL learners might not have been able to overcome their linguistic deficits in CSL.

In contrast, the MP readers within the intermediate and advanced groups showed a slightly higher tendency to use various reading strategies than the LP readers did, and there were relatively greater discrepancies in the use of S14, S18, S20, S23, S24, S25, and S30. S14, S20, S23, S24 and S25 were used more frequently by the MP readers, whereas S18 and S30 were preferred by the LP readers. The application of S18 and S30 indicates that the LP readers would go back and forth to connect the text information, and they also paid attention to analyzing and evaluating it. Nevertheless, merely focusing on the text did not necessarily induce intact comprehension. As posited by McNamara et al. (2007), proficient L2 readers should be metacognitively aware of the application of reading strategies and keep monitoring their cognitive processing. By more frequent use of S14 (I made predictions about the text content), S20 (I correct my behavior), S23 (I react to author's writing style), S24 (I use prior knowledge) and S25 (I formulate questions when I read), the MP readers were capable of monitoring their comprehension and revising misconceptions, which might possibly have resulted in better reading comprehension. In order to verify this prediction, a further investigation was

carried out with nine cases of MP Readers and LP Readers at the intermediate and advanced levels.

Figure 4.12. CSL Strategies Used by MP Readers and LP Readers at Elementary Level

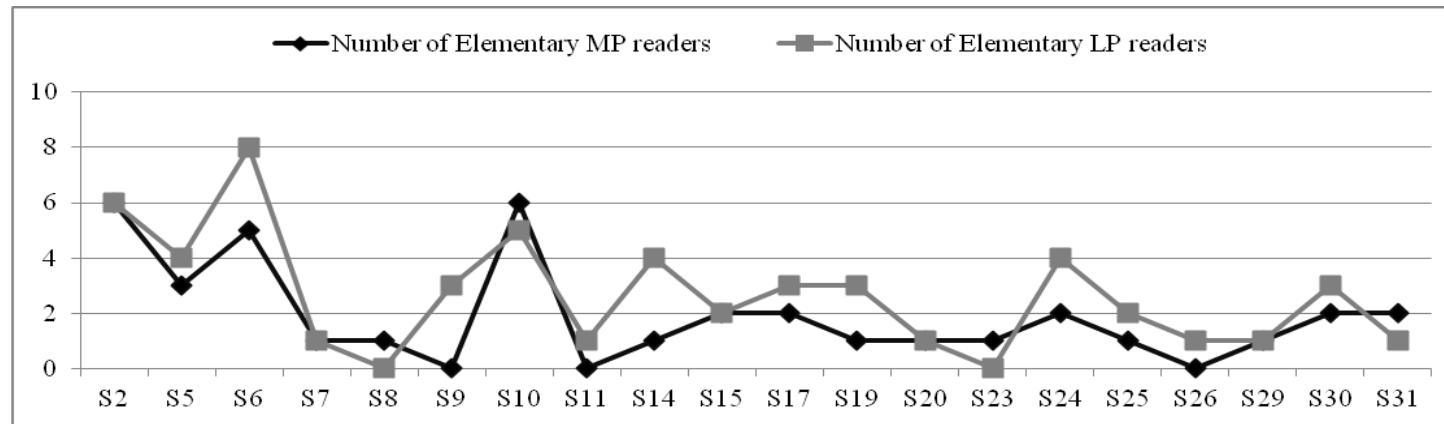


Figure 4.13. CSL Strategies Used by MP Readers and LP Readers at Intermediate Level

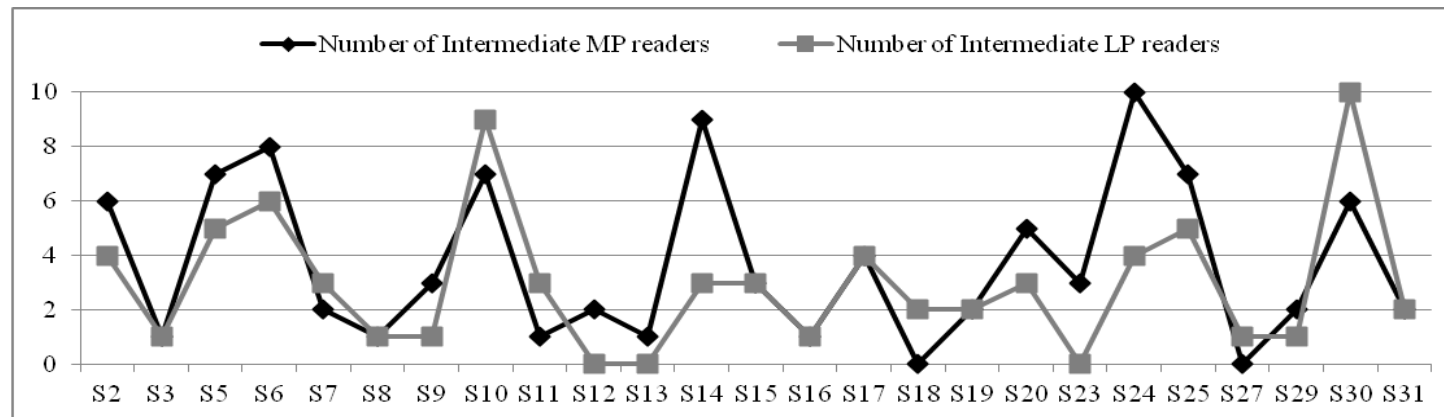
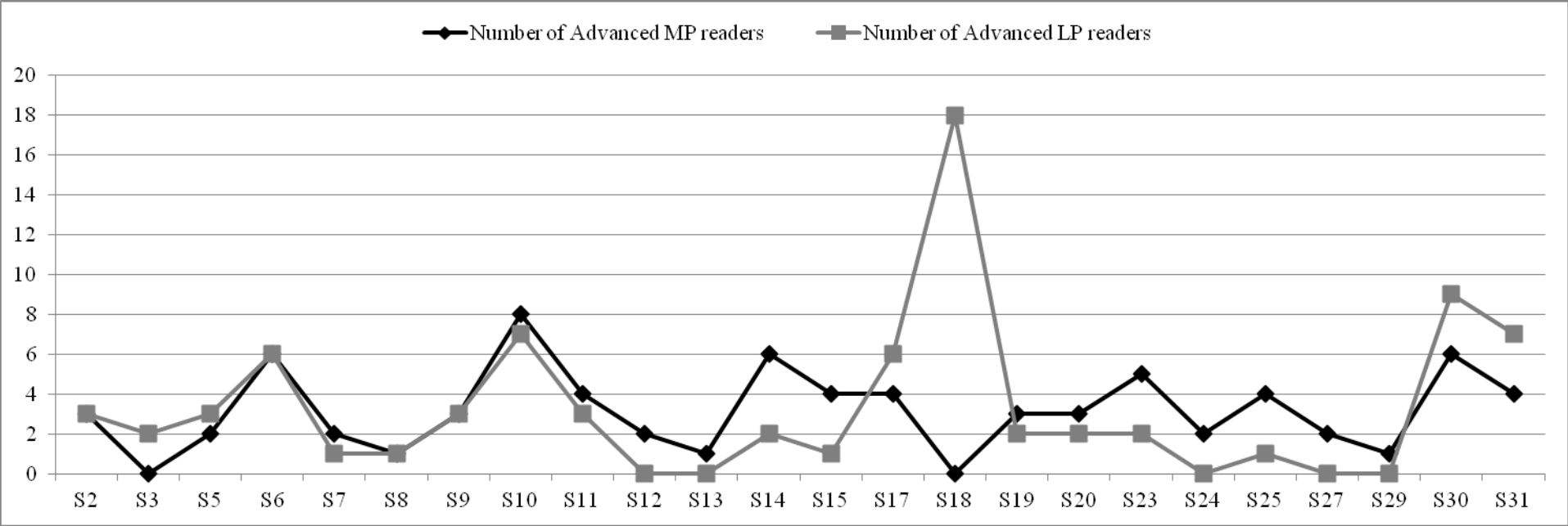


Figure 4.14. CSL Strategies Used by MP Readers and LP Readers at Advanced Level



4.3.2.2 Multiple-case study of MP Readers and LP Readers at the intermediate and advanced levels

A multiple-case study was conducted with nine participants from the intermediate and advanced levels, four being from the intermediate level and five from the advanced level. In order to maintain the homogeneity of participants within each group and to avoid any disturbance of other factors, the selection of cases attended to the educational environment of participants and references for their CSL proficiency. All nine participants were from SYSU, and had recently taken HSK with valid scores. Their background information is specified in Table 4.13. Our purpose was to investigate whether metacognitive use of reading strategies influences CSL reading proficiency or not. Respective attention was paid to the intermediate level in Section 4.3.2.2.1 and the advanced level in Section 4.3.2.2.2. As discussed previously, overall CSL proficiency also has potential effects on CSL reading performance. Therefore, the interaction of reading strategies and overall CSL proficiency in CSL reading has been examined as well.

Table 4.13.

Background Information of Participants in the Multiple-case Study

Participant ID	Overall CSL Proficiency Level	HSK Level	L1	Total Learning Time of Chinese (Month)	Learning time of Chinese in China (Month)	Total Strategy Quantity	Amount of Strategy Types	Reading score	Reading scale (M)	Ranking Based on CSL reading performance in Correspondent Group
61	Intermediate	6	Japanese	26	12	28	6(S2,S14,S24,S25,S26,S30)	109	3.03	1 out of 28
38	Intermediate	3	Spanish	39	3	9	7(S6,S7,S10,S14,S17,S20,S23)	61	2.54	9 out of 28
24	Intermediate	4	Korean	8	2	24	5(S8,S10,S11,S12, S15)	42	2.47	12 out of 28
62	Intermediate	5	Japanese	6	3	8	4(S6,S9,S14,S30)	29	2.42	23 out of 28
69	Advanced	5	English	15	15	57	17(S2,S5,S6,S7, S10,S11,S12,S13,S14,S17,S19,S20,S23,S24,S25,S30,S31)	87	3	1 out of 20
71	Advanced	8	Korean	39	39	15	9(S6,S10,S11,S14, S17,S19,S23,S25,S30)	78	2.79	3 out of 20
8	Advanced	6	Korean	48	24	5	2(S10,S15)	73	2.61	4 out of 20
15	Advanced	5	Korean	6	6	24	13(S2,S8,S9,S10,S11,S12,S14,S15,S23,S25,S29,S30,S31)	60	2.5	7 out of 20
40	Advanced	6	Korean	36	36	7	4(S6,S11,S17, S30)	20	2.5	20 out of 20

4.3.2.2.1 Multiple-case study of MP Readers and LP Readers at the intermediate level

The characteristics of the four participants at the intermediate level are discussed first in this section. Their verbal reports are presented selectively and analyzed regarding their use of reading strategies in CSL reading.

Participant 61:

(Narrative Text)

(1) “嗯嗯，有发生这样的事情吧。在高中的时候，我住在一种宿舍。第一次进来的时候，人们的个子很小很矮的。不窄，我们的房间。但是过了一段时间，他们真的很高了，然后觉得很窄的感觉。”

(2) “哦，这个是怎么表示呢？这个是眼睛看的时候看的度量吗？”

(3) “啊，是这样的看法。我的妈妈也有吧。但是对我的妈妈来说，儿子应该找到自己的路，他的人生的路。我的妈妈是我能帮助你，但是帮助是帮助，帮助的事情是你的责任。”

(Argumentative Text)

(4) “他的看法是什么呢？观点。”

(5) “哦，是是是，东方人的看法是这样的。日本人也常常有这样的看法。

日本热也有这样的看法，以前不知道什么的，所以应该要表示对他尊敬，然后慢慢请教，这样。”

This participant passed HSK Level 6 and commanded the highest CSL proficiency in the intermediate group. She also demonstrated the strongest ability to use CSL reading strategies in terms of both strategy quantity and number of strategy types. She was a CCS learner from Japan. There are two characteristics displayed by this participant when she read Chinese texts. One is that she constantly related text content to her prior knowledge, including her personal life experience and her cultural background. She often evaluated text content and compared Chinese culture with Japanese. The other characteristic is that she thought critically about what she read. She generated questions during reading and tried to find answers to her questions when reading subsequent contents.

Participant 62:

(Narrative Text)

(1) “啊，因为三个人一起长大，所以不舒服，对吧。”

(2) (Reading “人高马大”) “这个不懂，可能是成语。”

(3) (Reading “这张弓上射出去的箭”) “可能是比喻孩子放了出去，不能回来了。比喻孩子的情况吧。”

(Argumentative Text)

(4) (Reading “陆陆续续”)“这个意思是继续的意思吗？ ”

(5) (Reading “谦卑”) “可能是谦虚，还有他说态度。”

This participant passed HSK Level 5. He did not have much to report despite the researcher's prompts during reading. In contrast to Participant 61, he did not relate to his own experience, but merely focused on the text information, especially the meanings of novel words. As a result, there was a lack of variety in his use of reading strategies and his reading performance was the poorest of the four.

Participant 24:

(Narrative Text)

(1) (The participant underlined “趴” because she did not understand the meaning.)

(2) (The participant translated “成熟” into Korean, her L1, and wrote it down beneath the word.)

(Argumentative Text)

(3) (The participant underlined the clause“关键在于你有没有留意”, and divided it into two meaningful units by adding a slash behind“关键在于”.)

Similar to Participant 62, Participant 24 devoted the most effort to understanding the meanings of novel words or clauses. However, this participant used a variety of strategies for decoding words, such as making notes, translating into her native language, and dividing clauses into meaning units. These cognitive activities might have helped to improve her comprehension. Participant 24 had only reached HSK Level 4, but more frequent and diverse use of reading strategies might help to improve her comprehension of Chinese texts, and her performance was better than that of Participant 62 in spite of her relatively lower CSL proficiency level (refer to Table 4.13, p.118).

Participant 38:

(Narrative Text)

(1) (The participant pointed to “成熟”) "This is maturity. "

(2) "He asked the doctor why. He is given the reason why he has to do this. "

(3) "Now, he has to buy the clothes. Like an irony or something. "

(Argumentative Text)

(4) "Can be a boy or a girl."

(5) "Oh, it is a man."

(6) "It is a she."

This participant not only paid attention to retrieving word meanings, but also kept evaluating the text information. She would make predictions and confirm or revise her understanding when she continued reading. She did not use as many strategies as Participant 24, yet the recall report quantity observed was similar to that of Participant 62. Her HSK Level was 3, but she got higher recall scores than both Participant 24 and Participant 62. Compared with the other two, there might be no less unfamiliar words in the texts for Participant 38, but the actions of consciously monitoring her reading comprehension might contribute to her reading performance.

To sum up, at the intermediate level, Participant 61 commanded the highest CSL proficiency and more strategies than the other three participants, which led to the most successful performance. However, for CSL learners with lower CSL proficiency, conscious application of reading strategies could also improve their reading comprehension. As shown in the case of Participant 38, despite the fact that her HSK score was not as strong as those of Participant 62 and Participant 24, the more frequent use of strategies to monitor comprehension and her use of reading strategies helped her to outperform the other two in CSL reading.

4.3.2.2.2 Multiple-case study of MP Readers and LP Readers at the advanced level

This section discusses and compares the use of reading strategies used by MP readers and LP Readers within the advanced group.

Participant 69:

(Narrative Text)

(1) “啊，我读错了。初一孩子跟八九岁的孩子一起玩。但是上初二，变，不是成人吧，就是很快就长大了。”

(2) “医生说可配可不配。但是我觉得 150 度必要戴眼镜。”

(3) “‘反感’就是不同意。”

(4) “这个文章说话的人是他的爸爸吧？爸爸还是兄弟姐妹？不是姐妹吧。因为他说‘大人’，所以我觉得是爸爸妈妈。”

(Argumentative Text)

(5) “‘谈谈’，啊，‘淡淡’。”

(6) “‘而那些已经具备专业知识的人，才看得懂其中的门道。’这是说知识不足的人，这里是说而那些已经...想法，因为他用‘而’。”

Ranked the first out of all twenty participants regarding reading performances, Participant 69 applied the most strategies in terms of both quantity and types. A great repertoire of reading strategies was observed during her reading processes. She paraphrased words in the text and used contextual clues to connect text contents. She also monitored her reading process by evaluating what she read, generated

questions during reading and corrected herself when there was any misunderstanding. With HSK Level 5, this participant did not command the highest CSL proficiency within the advanced group. However, her frequent application of reading strategies might have helped her to improve her reading comprehension of Chinese texts.

Participant 15:

(Narrative Text)

(1) “上面孩子的情况；中间妈妈和孩子的情况；下面我的想法。”

(Argumentative Text)

(2) “这个作者是小刘吗？以后没有小刘的名字。”

Participant 15 also passed HSK Level 5, but, compared with Participant 69, was found to have used fewer strategies during reading. This participant was found to be lower in the ranking as well, scoring seven out of twenty at the advanced level. Although not shown in the examples listed above, the strategy used the most by this participant was to divide the sentences into meaningful units, usually subject-predicate. She also made different notes in the texts to aid comprehension. She marked unknown words and underlined text information that she considered to be important. On the other hand, this strategy might limit comprehension to the lower level, slowing down reading processing, and thus hinder fluent comprehension.

Participant 40:

(Narrative Text)

(1) “前面和戴眼镜是什么关系？”

(2) “这个 ‘投资方’ 是什么意思？”

(Argumentative Text)

(3) “她的态度比小刘积极的。”

(4) (Reading“三人行，必有我师焉”) “以前的话。”

(5) “我觉得这段话说的是，无论什么情况，人的心里的态度是很重要的。”

There were even less reading strategies used by Participant 40. With HSK Level 6, this participant did not perform any better than Participants 68 and 15; instead, her recall score was the lowest at the advanced level. Consistent with the findings when comparing MP and LP readers at the intermediate level, a higher overall CSL proficiency level did not always lead to better CSL reading performance. Without the active application of reading strategies, CSL learners with higher overall CSL proficiency could be less proficient in CSL reading.

Participant 71:

(Narrative Text)

(1) “他是故意的吗？很想戴眼镜？”

(2) “为了好看，很多人这样。”

(3) “果然。”

(Argumentative Text)

(4) “两个不一样吗？这里讲了咖啡。这里又讲了成功。”

Participant 71 commanded the highest CSL proficiency at the advanced level, since she had passed HSK Level 8. She did not rely solely on her Chinese language knowledge, but also demonstrated frequent use of reading strategies when reading Chinese texts. The number of reading strategies used by Participant 71 was less than those of Participants 69 and 15. As predicted, the more frequent use of reading strategies might have helped to improve reading performance, and thus Participant 71 ranked second to Participant 69. Nevertheless, Participant 71 ranked higher than Participant 15 despite the latter having surpassed the former in both strategy quantity and strategy types.

This result suggests that it is likely to improve comprehension in CSL reading by frequent use of reading strategies, but that this might not always be the case. Besides reading strategies, CSL proficiency has an important influence on CSL reading performance.

Participant 8:

(Argumentative Text)

(1) (Reread “西点”.)

Few reading strategies were observed from the verbal reports of Participant 8, except for rereading, but he still managed to present a good performance in the free recall. This might be attributed to his overall CSL proficiency. With HSK Level 6, his reading score was higher than that of Participant 15, despite lacking the use of any reading strategies—— which might also have resulted from the scant verbal reports. There were only five responses in total. This participant might actually have used more reading strategies but failed to present them orally.

In summary, the findings at the advanced level are similar to those at the intermediate level. With frequent and conscious application of reading strategies, the reading performances of learners with relatively lower CSL proficiency levels could be better than those of more proficient learners, for example Participant 69 outperformed Participant 71, and both Participant 69 and Participant 15 outperformed Participant 40. However, there was also exception in this study, as Participant 8's reading score was higher than that of Participant 40 despite the fact that they were at the same HSK level and Participant 8 was less active in using reading strategies. This might be due to the idiosyncrasy of CSL learners or failure to capture Participant 8's holistic reading process by verbal reporting.

4.3.2.3 The effects of reading strategies on CSL reading performance

The effects of using reading strategies on CSL reading performance vary among learners at different CSL proficiency levels. At the elementary level, CSL reading proficiency is determined mainly by the learners' overall CSL proficiency. The application of reading strategies does not guarantee successful reading comprehension. However, when CSL learners reach the intermediate or advanced levels, frequent use of reading strategies and conscious monitoring of reading process will help to improve reading comprehension. Within the subgroups at the intermediate and advanced levels, by more frequent use and cognitive control of reading strategies, it is possible for CSL learners of lower CSL proficiency to cross the language threshold imposed by CSL proficiency, and to outperform those of higher CSL proficiency when reading Chinese texts.

4.4 Summary

The findings of the questionnaire survey and reading tasks have been described and discussed in this chapter. It has revealed a developmental pattern in the use of reading strategies from elementary to intermediate to advanced level. Strategy quantity and the number of strategy types increased as the CSL learners' overall CSL proficiency improved. It was also found that the use of CSL reading strategy was influenced by the CSL learners' L1 literacy. They would transfer reading strategies from L1 reading to CSL reading. Learners with language and cultural backgrounds similar to Chinese, such as the CCS learners, would use their prior knowledge to aid their comprehension in CSL reading. In contrast, the NCCS learners would apply other strategies to compensate for their comprehension.

The effects of reading strategy on CSL reading performance have also been discussed in this chapter. More proficient readers tended to apply more strategies during reading or used reading strategies constantly to monitor their reading processes, such as generating questions during reading, making predictions, and correcting misunderstandings. It is thus predicted that the use of reading strategies could help CSL readers to cross the language threshold and achieve successful comprehension. The nature of the language threshold is discussed further against the background of CSL reading in Chapter 5.

It is worth noting that there might be limitations in the interpretations of results, because the numbers of CCS learners and NCCS learners were not completely even at each level, especially within the advanced group. It was difficult to maintain a well-distributed sample in this research given that the general trend in mainland Chinese universities is that CCS learners substantially outnumber NCCS learners.

Chapter 5 Discussion

5.1 Introduction

The present study was concerned with the application of CSL reading strategies by CSL adult learners and its role in CSL reading. The participants in this research were of diverse CSL proficiency levels and L1 backgrounds. This chapter first analyzes the influences of these two factors on the application of reading strategies in CSL reading. Attention is then given to which reading strategies can, and how they can, improve CSL reading performance. Since the use of reading strategies is also anticipated to be influenced by CSL proficiency, the interaction between them in CSL reading will also be discussed.

5.2 The use of CSL readings strategies by adult learners

According to the results retrieved from the verbal reports and questionnaire survey described in Chapter 4, there were two reading strategies used by the majority of CSL adult learners, namely rereading and decoding at the character or word level. Regardless of their Chinese proficiency levels, the CSL adult learners frequently applied these two strategies when reading Chinese texts. On the other hand, they were less frequent in applying strategies to react to the author's writing styles and summarize what they had read. While many CSL learners enacted cognitive activities in low-level processing, such as understanding word meanings, they were less devoted to high-level processing such as capturing the main idea of the text. A similar result was reported in Du's (2000) investigation into the CSL reading strategies with eight L1 English learners at the intermediate and advanced levels——

intermediate and advanced learners did not differ from each other in terms of using reading strategies, and they tended to apply local strategies for word recognition more frequently than global strategies. Therefore, there seems to be a general trend in using CSL reading strategies by adult learners—— CSL readers need to devote more of their energy to applying reading strategies to lower-level processing than to higher-level processing.

Despite this commonality among CSL learners, it was found that there were also differences in using CSL reading strategies, possibly influenced by the CSL learners' Chinese proficiency levels and L1 literacy backgrounds. Further discussion regarding the relationship between CSL reading strategies and CSL proficiency level, and between CSL reading strategies and L1 literacy, is elaborated in Sections 5.2.1 and 5.2.2 respectively.

5.2.1 Relationship between the use of CSL reading strategies and CSL proficiency level

It was indicated in the findings of both the questionnaire survey and the verbal reports that the elementary learners were more likely to read by a bottom-up approach, in which they read character-by-character or word-by-word at a slow speed, while the intermediate and advanced learners had a higher tendency to use a top-down approach, such as skimming the text, as a preparatory step for subsequent reading. This result is consistent with Chang's (2010) study about English-speaking learners of different CSL proficiency levels. Chang (2010) required participants to read a Chinese text, recall what they had read by writing in English and fill out a

questionnaire (adapted from Carrell's, 1989) so as to measure their cognitive and metacognitive abilities. The results showed that readers at the higher proficiency level were engaged in more global-level processing activities than those who were at the lower proficiency level (Chang, 2010). Nevertheless, no developmental progression in the use of reading strategies was found in Chang's (2010) study. Chang argued that the idiosyncrasy is due to a lack of reading-strategy instruction, which led to the CSL learners having to depend on their own strategies in CSL reading. In the present study, the developmental pattern was not detected in the questionnaire survey analysis either. As discussed in Section 4.3.1.3, since the CSL learners did not receive sufficient instruction about applying reading strategy to reading Chinese texts, it might be possible that they did not fully understand the items listed in the questionnaire and tended to respond positively. Yet, with more details of CSL reading processing, the analysis of verbal reports in this study has revealed a developmental pattern of using reading strategies from the elementary level to the intermediate level, and to the advanced level.

First, as the learners' overall CSL proficiency levels improved, the strategy quantity and the number of strategy types increased significantly. The numbers of CSL reading strategies applied by the intermediate and advanced learners were about twice those observed among the elementary learners. Although the intermediate and advanced learners applied similar numbers of reading strategies, the advanced learners employed a greater variety of strategy types. In addition, the advanced learners were inclined to use a cluster of reading strategies at the same time, which was rarely found among the intermediate learners. Second, there was also a progression in terms of the categories of reading strategies across the three levels. It was more likely for the elementary learners to apply Category 1 (Preparing to read)

and Category 2 (Interpreting words, sentences and ideas in the text), whereas the application of Category 3 (Going beyond the text) and Category 4 (Organizing, restructuring, and synthesizing information in the text) were used more frequently by the intermediate and advanced learners. Moreover, there were differences in using reading strategies within Category 2 across the three levels. The elementary learners tended to use strategies to retrieve the meanings of characters or words; the intermediate and advanced learners, on the other hand, had a higher tendency to make predictions during CSL reading. Overall, the advanced learners commanded more Category 2 reading strategies than the elementary and intermediate learners did.

The developmental pattern found in this research resembles that in Yau's (1997) study of L1 Chinese reading and L2 English reading, in which Cantonese-speaking participants showed progress from the use of literal meaning strategies to elaborated meaning strategies in both L1 and L2 reading, though the development in L2 English was a bit slower than that in L1 Chinese. Because similar patterns of reading strategy use were found in reading L1 Chinese and L2 English, Yau (1997) claimed that readers tend to transfer their L1 reading ability into L2 reading, and hence there is a universal underlying reading competence, as proposed by Cummins (1979). In the present study, without having observed the learners' L1 reading processes, it is not certain whether or not the CSL learners transferred L1 reading strategies directly to CSL reading. As self-reflections on the participants' mental processes, the verbal reports provided more insights about the use of CSL reading strategies not available from the questionnaire survey. These reports indicated that the CSL learners felt more at ease with resorting to strategic knowledge when reading Chinese texts if

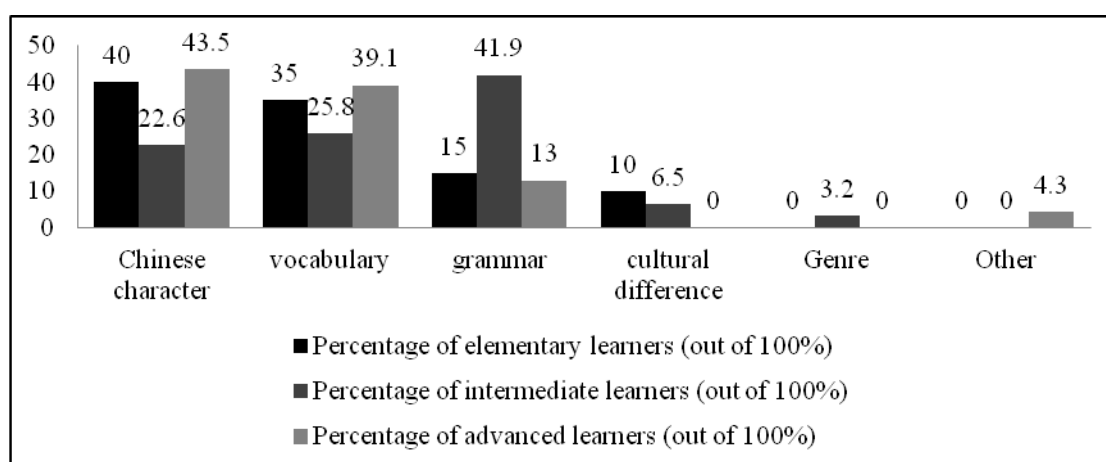
their overall CSL proficiency was reinforced. These adult learners might have commanded reading strategies to different extents based on their L1 reading experience. With increasing overall CSL proficiency levels, the CSL learners applied a greater variety of reading strategies to achieve comprehension.

Among the repertoire of reading strategies commanded by the L2 readers, as suggested by Yau (1997), even though the majority might be transferred from L1 reading, there are strategies unique to L2 reading, including translation and paraphrase, which were also found in this research against the context of CSL reading. However, apart from translating and paraphrasing, the frequent use of strategies to decode at the character level is probably unique to CSL reading. The verbal reports showed that even when the CSL adult learners had reached the advanced level, they still needed to apply decoding strategies at the character level, such as using radicals to guess Chinese characters' meanings. This is consistent with the feedback collected from the questionnaire survey in which the participants were asked about the most difficult part for them when reading Chinese texts, including Chinese character, vocabulary, grammar, genre and cultural differences.

As shown in Figure 5.1, around 40% of the elementary and advanced learners thought the Chinese characters make reading Chinese texts difficult, and vocabulary came second for these two groups. Interestingly, most intermediate learners chose grammar and vocabulary came second, while Chinese character was the third. This might indicate a recurring pattern of the difficulties in CSL reading. At the elementary level, possibly because of the relatively simple construction of reading text and the unsophisticated CSL proficiency, the learners' attention would be drawn to low-level linguistic information such as characters and words. As their CSL

proficiency level increased, say, reaching the intermediate level, the structure of sentences in the designated texts became more complicated. In the meantime, the CSL learners were more aware of L1-L2 distance and thus might have been inclined to be preoccupied by the grammatical information. In contrast, the advanced learners usually had a better command of grammatical knowledge. Since they would be faced with reading materials covering extensive topics, expanding vocabulary knowledge was more important for fluent reading. Therefore, when the advanced CSL learners had difficulty in retrieving the meanings of key words in reading, they would put more effort into decoding.

Figure 5.1. The Most Difficult Aspect in CSL Reading



Overall, Chinese character and vocabulary were deemed as the biggest obstacles in CSL reading by the majority of participants. As discussed in Section 4.3.1.1.2, however, there was a slight difference in the use of strategies at the character and word levels. More than half of the participants across the three levels used S6 (I try to understand the meaning of each word). Even the advanced CSL learners still put

much of their effort into understanding novel words. Participants at different levels also frequently adopted a bottom-up approach to decode character-by-character, but the frequency decreased as the participants' overall CSL proficiency levels improved. Although the CSL learners seemed to be aware of the necessity to move from low-level to high-level processing, they were held up at the word level. It was also found in Everson & Ke's (1997) study on L1 English participants that both intermediate and advanced CSL learners extensively sounded out words to recode characters or words during reading. Everson & Ke argued that this is mainly due to the L1-L2 distance. Since they are learning a new orthography, L1 English learners are faced with greater difficulties when reading L2 Chinese compared with reading other cognate languages, such as German or Spanish, as a second language at comparable proficiency levels. The latter might experience little difficulty with decoding as their L2 proficiency increases. Everson & Ke (1997) thus predicted that it takes longer for CSL learners to develop a fast, context-free word recognition ability so as to apply it to CSL discourse reading.

There is no empirical evidence supporting that word recognition ability improves as the L2 reader's overall language proficiency level increases; instead, L2 word recognition ability is shaped by different factors including L1-L2 distance, L1 reading experience and L2 linguistic knowledge (Koda, 2005). Li (1998) suggested that CSL reading ability development is related closely to speaking ability. In this study, the difficulties with word recognition were not only experienced by NCCS learners, like English speakers, but also by CCS learners, such as Korean and Japanese learners, in spite of different L1-L2 distances between the two groups. Although no specific attention has been paid to the participants' L1 reading processes and CSL speaking proficiency, it was noticed that there was a disproportion between

the speaking and reading abilities of both the intermediate and advanced CSL learners. For instance, they were capable of presenting fluently in Chinese when recalling what they had read, but stumbled to different extents throughout the reading tasks. As shown in the multiple-case study in Section 4.3.2.2, there were few differences between the HSK scores of the intermediate and advanced CSL learners (and reading is the most important part in HSK). The relative slower development in reading ability, compared with speaking ability, might be attributed to the learning environment. The participants were learning Chinese in mainland China, where they had easy access to the target language and substantial opportunities to improve their speaking proficiency. In addition, compared with reading, it is easier to get immediate rewards by practicing speaking. CSL learners will gain more satisfaction by being able to engage in oral communication with native Chinese. Therefore, CSL learners tended to devote more time to practicing their speaking skills than their reading skills

Moreover, the majority of CSL learners spent less time on reading courses than speaking courses. Usually, reading courses were not introduced until the advanced level, irrespective of reading strategy instruction. Some participants reported that they understood the importance of improving reading ability in CSL learning, but reading courses still need improvement. Four reasons were summarized from their reports. First is the inappropriate difficulty level of the reading materials. Compared to other courses, such as integrated Chinese and speaking Chinese, teachers in reading classes spent less time with students and might be less familiar with the students' reading proficiency. Those who attended the reading classes reported the reading materials to be either too easy or too difficult for them. Second,

there is a lack of attention to the different needs of CCS and NCCS learners. In mainland China, they are usually mixed in the same class. Generally, the CCS learners in this study regarded the reading materials to be less challenging for them when compared with NCCS learners at the same level. Some CCS learners even demanded more reading exercises to be assigned after class. The third reason is the routine pedagogy in reading courses. As implied by most participants who attended reading classes, the whole process seemed to be test-oriented, or HSK oriented: the teachers would first teach the students a few novel words before reading, then ask them to read and answer questions, similar to those in HSK, within a limited time period, most of which were closed questions like multiple-choice. Thereafter, the teachers would ask the students about their answers and explain whether they were right or wrong. For those who did not aim to sit in HSK, most complained that learning in this way was boring, which depressed their interest in the reading courses. Based on the backgrounds of the participants in the present study, there was only a small proportion who were motivated by taking HSK. The last reason is the lack of reading strategy instruction. Probably because of the influence of test-oriented teaching, participants at the intermediate and advanced levels were accustomed to finding clues from questions before reading and looking for information related to previous questions to achieve text comprehension. As a result, when required to read a text naturally and then recall after reading, some participants were confused at first and asked the researcher if there was any question to answer. It seemed that being guided by questions provided before reading has become a strategy used frequently. Nonetheless, there is a lack of systemic reading strategy instruction catering for CSL learners of different proficiency levels and L1 backgrounds.

In summary, there is a developmental pattern of CSL reading strategy use across the elementary, intermediate and advanced levels. As the overall CSL proficiency level increases, there is progression in strategy quantity, number of strategy types, and categories of strategies. With enhanced Chinese proficiency, it is likely for CSL learners to apply more reading strategies in a more flexible fashion. Nonetheless, regardless of Chinese proficiency level, CSL adult learners are inclined to use decoding strategies at the character or word level, which might be attributed substantially to the unique Chinese writing system and insufficient reading practice through self- and in-class learning.

It is unclear as to whether reading strategies used in CSL reading were transferred directly from L1 reading, but the lack of reading strategy instruction in the CSL context might, in turn, indicate that the source of CSL reading strategy knowledge is likely to be the CSL adult learners' L1 reading experiences. As to the long-remaining use of decoding strategies, apart from insufficient reading practice, it might also be due to the linguistic distance between the CSL learners' L1 and L2 Chinese. In this light, in addition to the overall CSL proficiency level, L1 literacy is an important factor in the use of reading strategies in CSL reading. The possible relationship between the two is discussed in the following section.

5.2.2 Relationship between the use of CSL reading strategies and L1 literacy

The relationship between the use of CSL reading strategies and L1 literacy is discussed in this section. L1 literacy here refers to the CSL learner's L1 reading

ability, including the command of reading strategies, and the L1 background, which consists of both linguistic and cultural knowledge.

5.2.2.1 Relationship between L1 reading strategies and CSL reading strategies

In the questionnaire survey, the participants were asked to rate 31 reading strategies on a five-point Likert scale to indicate their use of these strategies in both L1 and CSL reading. It was found that, based on the participants' self-perceptions, the use of most CSL reading strategies was connected to those in L1 reading. In both L1 and CSL reading, CSL learners would frequently refer to previous context, and they also tended to imagine what they read; with a lower tendency, they sometimes parsed sentences into units, asked others for help or checked the dictionary, and took notes to guide their reading; but they were not active in using strategies to monitor their reading, including generating questions before reading as well as self-explaining during reading.

Although it appeared that the CSL learners were inclined to transfer their L1 reading strategies into CSL reading, the actual frequency of transferring L1 reading strategies into CSL reading might have differed from their self-reflections. For instance, the CSL learners reported that they often used S27 (I try to picture or visualize what I read), yet the use of S27 was only observed in the verbal reports of a few intermediate and advanced learners. As suggested by Qian (2010), even though they were using the same strategy, it was less effective for the CSL readers. By comparing the application of Chinese reading strategies between native Chinese readers and Korean readers, Qian (2010) found that both groups preferred making predictions when reading Chinese texts, yet the application of prediction strategy was

a predictor for successful reading for the native Chinese readers while it did not lead to successful reading for the Korean CSL readers. This result is echoed in Yau's (1997) study on L1 Chinese and L2 English reading strategy development, in which it was found that, although similar reading strategies are used in L1 reading and L2 reading, L2 reading is underlined by a slower development process.

Apart from the similarity in using the majority of reading strategies in L1 reading and CSL reading, there were a few specific reading strategies applied to CSL reading. One specific strategy is translating Chinese into L1 or English, partly because the participants in this study were required to give verbal reports in either Chinese or English. Nevertheless, it seemed that the CSL learners tried to avoid translating. Some participants reported that they worked hard to force themselves to think in the target language. Given that they were immersed in the Chinese context, the translation strategy was used less frequently compared with others, for example the decoding strategy, at the character or word level. The latter is considered to be unique to CSL reading, which is induced by the demands of Chinese orthography. Since it takes a lot of effort for CSL learners to develop rapid word recognition competence, the use of decoding strategies will remain for a long time.

In this regard, it is highly possible that most CSL reading strategies are transferred from L1 reading knowledge. Given that the advanced CSL learners demonstrated much more flexibility in the application of CSL reading strategies than the elementary and intermediate learners, the CSL readers showed a higher tendency to apply L1 reading experience to CSL reading with increasing CSL proficiency. However, it is unlikely for the CSL learners to achieve the same linguistic sophistication as native Chinese speakers, especially word recognition ability. In

other words, the transfer of L1 reading strategies into CSL reading is limited by CSL proficiency level. Additionally, CSL learners need to develop strategies unique to the CSL reading context, such as decoding Chinese characters. As revealed in Section 4.3.1.2, the use of decoding strategies is maintained regardless of CSL proficiency level, but it is related to the learners' L1 backgrounds and it underwent different developmental processes between the CCS and NCCS learners.

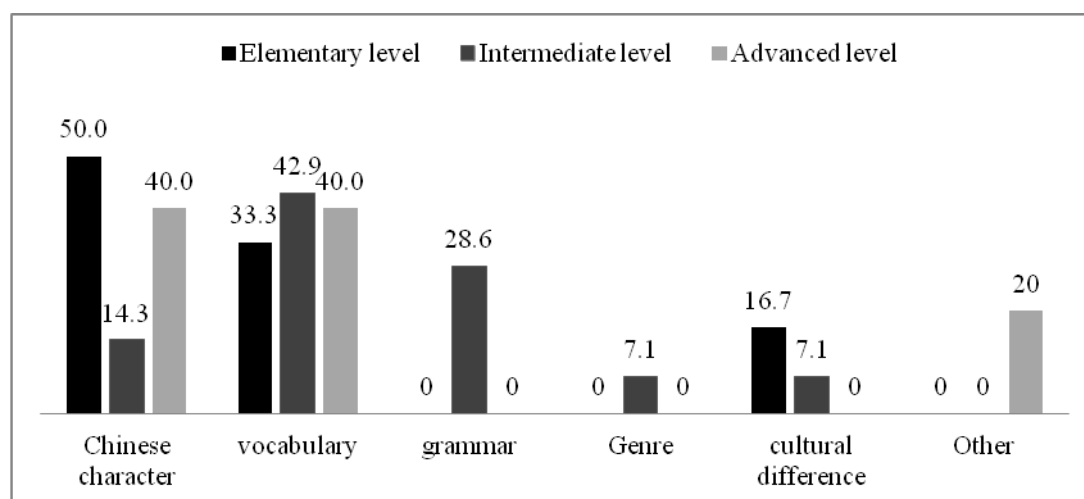
5.2.2.2 Relationship between the use of CSL reading strategies and learners' L1 background

The participants in this study were categorized into two groups according to their L1 backgrounds, CCS and NCCS learners. It was found that the CCS and NCCS learners resembled each other in terms of overall strategy quantities and the numbers of strategy types within each proficiency level, but demonstrated different developmental patterns of CSL reading strategy use. At the elementary level, both CCS and NCCS learners frequently used bottom-up strategies like rereading and decoding at the character or word level. At the intermediate level, there were different processes used by the two groups. The CCS learners took advantage of the relationship between their language and cultural backgrounds and Chinese and consulted their prior knowledge in CSL reading. The CCS learners also showed a lower tendency to use decoding strategies, while the NCCS learners still needed to rely on these. Probably due to L1-L2 distance, the NCCS learners did not use prior knowledge as frequently as the CCS learners did; instead, they compensated by consciously monitoring the reading process, using reading strategies such as generating questions during reading and correcting misunderstanding. When

reaching the advanced level, both the CCS and NCCS learners would switch from the bottom-up approach to the interactive approach, combining bottom-up and top-down processing. For example, both groups would skim the text to get a general idea and continue reading the main content, but neither could get rid of the frequent use of decoding strategies at the word level. However, the use of decoding strategies at the character level decreased for CCS learners, while it was maintained for the NCCS learners.

Comparisons of the use of CSL reading strategies between CCS and NCCS learners suggest that, thanks to their cultural and linguistic background knowledge, the CCS learners seemed to have an advantage over the NCCS learners in CSL reading strategy development. The NCCS learners, on the other hand, seemed more likely to be faced with greater obstacles, due to cultural and linguistic distance when reading Chinese texts. Figure 4.2 shows, however, that cultural difference is less of a concern for NCCS learners than linguistic distance imposed by Chinese characters, vocabulary and grammar.

Figure 5.2. Percentage of NCCS Learners Considering the Most Difficult Aspect in CSL Reading



Given that both NCCS and CCS learners were learning in the immediate context of the target language, they might be similar in terms of familiarity with Chinese culture, but the discrepancy regarding word recognition ability still persisted. As discussed previously, studies about the CSL reading strategies of native English speakers have indicated consistently that NCCS learners commit themselves, long-term, to lower-level reading processing at the character or word level, which might not be experienced by learners who do not need to learn Chinese as a new orthography. Therefore, it can be concluded that, for CSL learners in the immediate context of Chinese, the use of CSL reading strategies will be influenced by the learners' L1 backgrounds, including cultural background and L1 linguistic knowledge. The latter is predominant in leading to different CSL reading strategy developments for CCS readers and NCCS readers. The NCCS learners lagged behind when decoding characters during CSL reading. Nonetheless, at the intermediate and advanced levels, they consciously compensated by metacognitive monitoring of reading comprehension, which was regarded as crucial in L2 reading by McNamara et al. (2007).

Thus far, the discussion has been centered on what reading strategies are applied by CSL adult learners. The following will focus on how reading strategies can possibly influence CSL reading performance.

5.3 The role of applying reading strategies in CSL reading

The use of reading strategies plays a significant role in CSL reading. As revealed in Chapter 4, reading strategies applied with different levels of efficiency

can lead to diverse results. This section discusses the possible effects of reading strategies on CSL reading performance.

5.3.1 Relationship between the use of reading strategies and CSL reading performance

Based on the scores of free recall, the participants were divided into more proficient (MP) and less proficient (LP) CSL readers within their own levels. Comparisons of reading strategies used by MP and LP CSL readers have been drawn in Section 4.3.2.1. Different trends were found across three levels.

Within the subgroups of the intermediate and advanced levels, the MP CSL readers surpassed the LP CSL readers not only in reading strategy quantity but also the number of reading strategy types. This result appears to be congruent with the findings derived from L2 reading research based on cognate alphabetic languages with English (e.g., Grabe, 2009; Hudson, 2007), which posits that, generally, more successful L2 readers use more reading strategies than less successful L2 readers; in addition, more successful L2 readers are more effective in the application of reading strategies. In this study, it was also found that MP CSL readers used strategies more frequently to monitor their reading processing, such as making predictions about the text content, correcting misunderstandings, and formulating questions when reading Chinese texts. LP CSL readers, in contrast, showed lower-level metacognition and they tended to focus on text information more than their ongoing reading activities. A similar finding was identified by Li (2002), when investigating the application CSL reading strategies of Japanese learners at the

intermediate and advanced levels. Li (2002) compared the CSL reading strategies used by more successful and less successful learners, and found that the successful learners were more active in planning, monitoring and evaluating their reading processes, while the less successful learners were passive readers of text materials.

For the intermediate and advanced CSL learners, the more frequent application of reading strategies and consistent monitoring of reading comprehension might help to improve CSL reading proficiency. However, a different result was revealed at the elementary level.

At the elementary level, the LP CSL readers used more reading strategies than the MP CSL readers, but this did not guarantee successful CSL reading performance. A variety of reading strategies was applied by the LP CSL readers at the elementary level, ranging from decoding characters and rereading, to making predictions when reading. The failure to improve CSL reading proficiency might be due to two reasons. One is that the use of CSL reading strategies by the LP readers was actually inappropriate and thus ineffective. As discussed before, Qian (2010) and Yau (1997) posited that same reading strategies could be used with different levels of success. The other reason might be attributed to the effect of different overall CSL proficiency levels of the MP and LP readers. The average Chinese-learning time for the LP readers at the elementary level was shorter than that of the MP readers, which might indicate that the former generally commanded lower level CSL proficiency than the latter. Being linguistically unsophisticated, even if the LP readers tried to use more strategies, for example making predictions during CSL reading, the action might lead to misunderstanding.

To summarize, CSL reading performance is likely to improve as CSL learners apply more reading strategies and constantly monitor their reading comprehension, which is feasible for intermediate and advanced CSL learners, but not for elementary learners. In the present study, there is a lack of standard proficiency test scores (e.g., HSK) to support that MP readers exceeded LP readers in terms of overall CSL proficiency within the elementary group. Therefore, it is not certain whether the fact that more frequent use of reading strategies did not improve CSL reading performance was due to the limitation of overall CSL proficiency or the ineffective application of reading strategies. However, different results derived from intra-level comparisons among CSL learners across the three proficiency levels suggest that there is a close interrelation between the use of reading strategies and overall CSL proficiency in CSL reading.

5.3.2 Interaction between the use of reading strategies and CSL proficiency in CSL reading

In Bernhardt's (2010) L2 reading model, there is mutual compensation between different factors in L2 reading, among which reading strategies and L2 proficiency play important roles. This position can also be applied to CSL reading. In the first place, the use of CSL reading strategies is influenced by overall CSL proficiency. The use of reading strategies increases as overall CSL proficiency level improves, and the frequent use of reading strategies could possibly lead to improvement in CSL reading comprehension. Because the use of CSL reading strategies is influenced by overall CSL proficiency, the effects of reading strategies on CSL reading performance will fluctuate for learners with various overall CSL proficiency levels.

At the elementary level, even more frequent application of reading strategies did not guarantee successful CSL reading performance, indicating that the linguistic threshold in CSL reading could not be crossed by strategic knowledge. It is thus likely for readers with higher CSL proficiency to gain a better CSL reading performance. Therefore, CSL proficiency is a stronger predictor for CSL reading performance than reading strategies at the elementary level.

However, the effects of reading strategies and CSL proficiency changed at the intermediate and advanced levels. Intra-level comparisons showed that higher overall CSL proficiency did not necessarily equate with higher CSL reading proficiency. In contrast, more effective use of reading strategies by CSL learners with lower CSL proficiency could help to achieve better reading comprehension. The multiple-case investigation among the intermediate and advanced learners suggests that the combination of S14 (I made predictions about the text content), S20 (I correct my behavior) and S25 (I formulate questions when I read) was useful for monitoring reading comprehension, and thus resulted in better CSL reading performance, regardless of the language threshold.

In the extant research, there is a lack of absolute identification of the language threshold in L2 reading (Yamashita, 2002). Studies of CSL reading tend to imply that the language threshold might remain for a long-term period because of the unique nature of reading Chinese and the L1-L2 distance induced. Considering the idiosyncratic background of the participants in this study, it is difficult to define the nature of the language threshold in CSL reading. However, the backgrounds of the participants in the multiple-case study at the intermediate level might provide a general idea. It was found that, with more frequent use of reading strategies and

more active monitoring of their reading processes, the participants with HSK Levels 3 and 4 could outperform those with higher HSK scores in CSL reading. HSK score is an important reference for overall CSL proficiency. Since HSK Level 3 is the highest level for elementary learners, while HSK Level 4 is the lowest level for intermediate learners, the transition CSL proficiency level ranging from elementary level to intermediate level might be the language threshold level for CSL readers.

Overall, L2 proficiency is not always a stronger predictor for CSL reading performance. The application of reading strategies is influenced by CSL proficiency on one hand; on the other hand, it can help CSL learners cross language threshold and improve CSL reading performance. When the CSL readers reached the language threshold level, reading strategy was a stronger factor than overall L2 proficiency in determining L2 reading proficiency.

5.4 Summary

The use of reading strategies is correlated with different factors, including overall CSL proficiency level and L1 literacy; the latter is comprised of L1 reading strategy knowledge and L1 linguistic, as well as cultural background. As the overall CSL proficiency level increases, there is a progression in strategy quantity, number of strategy types and categories of strategies. It is easier for CSL learners to transfer reading strategies from L1 to CSL reading when their CSL proficiency is reinforced.

More important, it was found that the effective application of reading strategies, especially strategies combined to monitor reading comprehension, can improve CSL

reading performance. Although the use of reading strategies was influenced by CSL proficiency, it was found that overall L2 proficiency was not always a stronger predictor for CSL reading performance. This suggests that when CSL readers reach the language threshold level, effective application of reading strategies will be a stronger factor than overall L2 proficiency in determining L2 reading proficiency.

Chapter 6 Conclusions

6.1 Introduction

Conclusions are drawn in this chapter by first summarizing the major findings relating to the research questions of the present study, in Section 6.2. Since this study aimed at providing insights for L2 reading theory development, pertinent implications are stated in Section 6.3. Nevertheless, this study is not without limitations, which are reported in Section 6.4 with the emphasis on methodological issues. Besides theoretical issues, this study was also concerned with classroom practice. Therefore, implications for reading instruction specific to the CSL context are discussed in Section 6.5. Finally, in Section 6.6, suggestions are offered for future research on CSL reading.

6.2 Summary of the findings in this study

This study investigated the use of adult learners' CSL reading strategies. 75 University students of various CSL proficiency levels and L1 backgrounds participated in the research. They were required to give verbal reports while reading Chinese texts and to recall when they had completed the reading. Thereafter, the participants completed a questionnaire survey to reflect on their use of reading strategies in L1 and CSL reading. The findings reveal (A) their predilection or dislike for CSL reading strategies (Q1), (B) its relationship with CSL proficiency levels (Q2), (C) its relationship with L1 literacy backgrounds (Q3), and

(D) how the use of reading strategies can possibly improve CSL reading performance (Q4).

A.

It has been shown that, overall, the most frequently used reading strategies in CSL reading included decoding at the character and word levels, rereading, using contextual clues, and seeking external help such as a dictionary, whereas the least frequently used CSL reading strategies were generating questions before reading the main content, paying attention to the author's writing style, and summarizing. Despite the general trend shared among all the participants, the use of CSL reading strategies varied due to the influence of CSL proficiency level and L1 literacy.

B.

There were differences in the application of CSL reading strategies at the elementary, intermediate and advanced levels. When applying reading strategies to construct mental comprehension representations, the elementary CSL learners were inclined to use bottom-up strategies like decoding characters and rereading unknown words. The intermediate and advanced learners, on the other hand, showed a higher tendency to use an interactive approach combining both bottom-up and top-down strategies such as skimming to get a general idea of the text. They also tended to build up situational models by monitoring their reading processes cognitively. A developmental pattern was identified across the three levels. As the overall CSL proficiency level improved, there was progression in terms of strategy quantity, numbers of strategy types and categories of CSL reading strategies. The numbers of reading strategies were similar between the intermediate and advanced learners, but the latter employed a greater variety of reading strategies.

C.

Besides overall CSL proficiency, the application of CSL reading strategies was also influenced by the CSL learners' L1 literacy, which included L1 reading strategy knowledge and the linguistic as well as cultural background in the L1 context. According to the self-reflections of participants in the questionnaire survey, the use of reading strategies in CSL reading is related closely with those in L1 reading. In other words, the majority of CSL reading strategies might be transferred from L1 reading. However, there are strategies specific to CSL reading, such as translating, paraphrasing, and decoding at the character or word level. Regardless of the CSL learners' Chinese proficiency levels, they still needed to use decoding strategies frequently. It is postulated that decoding strategies at the character or word level might be unique to CSL reading because of the demands imposed by the Chinese orthography.

The adoption of decoding strategies varied between learners of different L1 backgrounds, i.e. CCS and NCCS learners. As CSL proficiency level increased, the CCS learners showed a lesser tendency to decode at the character or word level; instead, they frequently applied their prior knowledge linguistically or culturally related to Chinese when reading Chinese texts. In contrast, the NCCS learners consistently relied on decoding strategies even if they had reached the advanced level. Because of the L1-L2 distance, they seemed to compensate their reading comprehension by using strategies consciously to monitor their reading processes.

D.

When it came to the influence of using reading strategies on CSL reading proficiency, the effects varied among learners at different CSL proficiency levels. At the elementary level, CSL reading proficiency was determined mainly by the learners' overall CSL proficiency. The application of reading strategies did not guarantee successful reading comprehension. However, when the CSL learners reached the intermediate or advanced levels, more frequent use of reading strategies and conscious monitoring of reading processes helped to improve reading comprehension. Within the subgroups at the intermediate and advanced levels, the more proficient CSL readers surpassed the less proficient readers not only in strategy quantity but also in numbers of strategy types. The more proficient readers were also more conscious of using reading strategies to monitor reading comprehension, including making predictions, correcting misunderstandings, and formulating questions during reading. More important, through frequent use and cognitive control of reading strategies, it was possible for CSL learners of lower CSL proficiency to cross the language threshold imposed by CSL proficiency, and outperform those of higher CSL proficiency when reading Chinese texts. It appears that the language threshold for CSL readers is within the transitional period from the elementary level to the intermediate level, which is equivalent with HSK Levels 3 or 4.

6.3 Theoretical implications

Based on the 4-pronged Comprehension Strategy Framework proposed by McNamara et al. (2007), this study investigated the reading strategies applied in CSL reading at the discourse level, which is a different perspective from the bulk of L2

reading research on the language of English and its cognate languages. The findings of the present study provide empirical support for the 4-pronged Comprehension Strategy Framework and implications regarding the debates on L2 reading.

In the 4-pronged Comprehension Strategy Framework, McNamara et al. (2007) postulated that monitoring both comprehension and reading strategies is the core of successful reading, a view which is upheld in this study. Intra-level comparisons among the intermediate and advanced learners have demonstrated that the more proficient CSL readers not only used more reading strategies than the less proficient readers, but were also more aware of using strategies to monitor their reading processes. While the less proficient readers received text information passively, the more proficient CSL readers were critical about the reading materials. They reacted to the authors' writing styles and generated questions during reading. They made predictions more frequently. If their comprehension was wrong or disconnected, they tried to fix it. Therefore, a mere increase in the use of reading strategies is not enough. Successful and skillful reading also necessitates the cognitive monitoring of reading processes.

Besides emphasizing the significant role of reading strategies, the 4-pronged Comprehension Strategy Framework depicts four categories of common strategies that are likely to be used for reading comprehension at the discourse level. Since strategies in the framework are identified in a general manner, they can be applied to reading across languages, including CSL reading. In this study, the majority of reading strategies identified in the participants' verbal reports have been covered by the framework. Nevertheless, no decoding strategies have been included in the

framework. As shown in the present study, the use of decoding strategies will be maintained for a long period for CSL readers. In order to achieve fluent reading at the discourse level, decoding ability is indispensable for CSL readers. Therefore, it is necessary to adapt the 4-pronged Comprehension Strategy Framework by adding decoding strategies. In this study, four decoding strategies specific to CSL reading were adapted from Chang's (2010) study of CSL readers, including trying to (1) understand the meaning of each character, (2) understand the meaning of each word, (3) use radicals to guess the meanings of unknown characters and (4) parse the sentence into meaning units. These decoding strategies were introduced into Category 2 in the framework, that is *Interpreting words, sentences and ideas in the text*.

The need for decoding strategies might be attributed to the unique demands of CSL reading, in which the application of reading strategies is influenced by different factors such as overall L2 proficiency and L1 literacy. In the extant L2 reading research, L2 proficiency and L1 literacy are regarded as two important components shaping L2 reading proficiency. In this study, it was also found that most reading strategies used in CSL reading might be transferred from L1 reading. As CSL reading proficiency level increased, more reading strategies were transferred from L1 reading into CSL reading. Nonetheless, there were reading strategies specific to CSL context, including translating, paraphrasing and decoding at the character or word levels. In this regard, L2 reading is such a complex process that it cannot be explained by a single hypothesis, be it the Developmental Interdependence Hypothesis (Cummins, 1979, 1981, 1991), the Language Threshold Hypothesis (Clarke, 1980), or the Restructuring Hypothesis (McLaughlin, 1987, 1990). On the

contrary, the Compensatory Model proposed by Bernhardt (2005, 2010) seems to be more convincing in describing L2 reading.

Bernhardt (2005, 2010) posits that there are three layers in L2 reading: L1 literacy, L2 language knowledge, and other variances such as comprehension strategies as well as content and domain knowledge. All layers are important and compensate for each other in L2 reading. As explained in the Compensatory Model, L2 proficiency is considered as a stronger predictor for L2 reading performance than is L1 literacy. In the present study, the results tend to indicate that L2 proficiency plays a predominant role in L2 reading, but it is not always the stronger predictor for L2 reading performance. At the elementary level, the effect of L2 proficiency is greater than that of reading strategy on L2 reading performance, but at the intermediate and advanced levels, reading strategy tends to be a stronger predictor in determining L2 reading performance. Furthermore, through the effective application of reading strategies, it is possible for L2 readers with lower L2 proficiency to outperform those with higher L2 proficiency, which is consistent with McNail's (2012) proposition that reading strategy is an important predictor for L2 reading performance, other than L1 reading ability and L2 language knowledge.

However, it was also found that the use of CSL reading strategies is influenced by L2 language knowledge, L1 reading ability, L1 linguistic and cultural background, and it is highly possible that reading strategies used in L2 reading are transferred from L1 literacy. Notably, L1 literacy in Bernhardt's (2010) model excludes strategic knowledge and background knowledge, which are placed in a separate layer. In contrast, there is a broader definition for L1 literacy in the present study, encompassing L1 reading strategy knowledge, as well as L1 linguistic and cultural

background. But both definitions acknowledge the tangling interrelationship between different factors in L2 reading. As Bernhardt (2010) stated, various sources support each other whenever it is necessary in L2 reading.

To sum up, the Compensatory Model proposed by Bernhardt (2010) manages to explain the three layers shaping L2 reading development, among which L1 literacy and L2 language knowledge have received substantial attention, yet many variances are left unexplained within a layer, including reading strategies. With a focus on the reading strategies applied in CSL reading, this study resonates with McNail's (2012) position, holding that reading strategy is an important component in L2 reading and a strong predictor for L2 reading performance. Therefore, we suggest that reading strategies should be added as a separate layer of the Compensatory Model, which is of comparable importance as L2 language knowledge and L1 literacy. Since the effective use of reading strategies requires a certain level of metacognitive awareness, as identified among the more proficient readers at the intermediate and advanced level, the layer of reading strategies consists of strategic knowledge as well as metacognition; it shares mutual compensation with other layers in the process of L2 reading.

6.4 Limitations of the present study and methodological implications

Different means were used to investigate CSL reading strategies used by adult learners, including verbal reports during reading, free recall after reading and a follow-up questionnaire survey. The purpose of the present study was to explore CSL reading with the focus on reading strategies applied by adult learners of diverse CSL proficiency levels and L1 backgrounds. While aimed at assessing the effects

of these variances on the use of reading strategies and CSL reading, there were problems induced in the process of data collection.

The primary concern lies in the subject sampling. Despite the fact that the number of participants is comparable with those studied in previous research on CSL reading undergoing both quantitative and qualitative analysis, a larger body of participants might be needed to improve the reliability and validity of the questionnaire survey. There are additional issues with the composition of the sample in this study. Given that the participants were recruited from university students in mainland China, where CCS learners substantially outnumber NCCS learners, the number of NCCS learners is not comparable with that of CCS learners, which might interfere with the examination of the relationship between reading strategies and L1 background. Since this study also investigated the relationship between reading strategies and CSL proficiency, it was necessary to identify the participants' proficiency levels in the first place. In this study, this was achieved by referring to the results of entrance exams designated by local universities along with HSK scores. HSK might be a more convincing reference because it is a standard Chinese proficiency test, widely acknowledged. Nevertheless, only a small portion of the participants had recent test results of HSK. Without a widely-acknowledged benchmark for CSL proficiency, it is thus difficult for this study to contribute a detailed explanation of the nature of the language threshold level in CSL reading when comparing more proficient and less proficient readers within the subgroups of three proficiency levels.

Another concern is attributed mainly to the data gathering methods. In order to observe the actual use of CSL reading strategies, participants were asked to talk

aloud in either English or Chinese when they were reading Chinese texts. They were also required to retell whatever they remembered about the text in either English or Chinese. The recall reports were analyzed so as to assess their reading performances. Although verbal reports are useful in revealing the actual use of reading strategies and online processing that cannot be observed by a questionnaire survey, there is a problem with it—— for participants who were fluent neither in spoken English nor in Spoken Chinese, it might have been difficult to present their ideas. Therefore, the data gathered from these participants might not be able to reveal the holistic picture about their use of reading strategies in CSL reading and reading performance. Similar issues, due to the use of spoken language, might also have occurred in collecting the recall reports.

Besides verbal reports and free recall, the participants were told to reflect on their use of reading strategies in both L1 reading and CSL reading in the questionnaire survey. As mentioned previously, the reliability and validity of the questionnaire, the SRS, needed to be tested among a larger body of participants. The list of reading strategies in the SRS seems to represent common comprehension strategies used by the CSL readers, but the results of both the questionnaire survey and verbal reports indicate that S4 (I generate questions before reading) was not included in the repertoire of CSL reading strategies. On one hand, this may have resulted from the unclear statement; on the other hand, when the researcher explained to the participants that S4 refers to the situation in which the reader might have questions about the text after s/he reads the titles or subheadings, but before s/he reads the main content, most participants still had no intention of using this strategy. This suggests that S4 might be an outlier of the CSL reading strategy list.

Considering the limitations reported above, some implications can be drawn to improve the research methodology of the present study. First and foremost, there is a need to increase the number of participants, especially NCCS participants. Second, it would be better to change the language used in the verbal reports and free recall. The best option would be to ask participants to report in their native or most familiar language. Finally, S4 might need to be deleted from the questionnaire given that it was seldom used in CSL reading, leaving 30 items in the SRS. In this way, the reliability and validity of the CSL reading strategy questionnaire designed in this study could be evaluated further in a larger participant group.

6.5 Pedagogical implications

In the present study, the use of reading strategies has been shown to be of great importance in CSL reading. The effective application of reading strategies can lead to successful performance in CSL reading, but theories should be put into classroom practice to verify the effects of reading strategy (Han & Anderson, 2009, p.132-139). Several books published in recent years have shed significant light on systematic CSL reading pedagogy (e.g., Chen, 2008; Li, 2006; Meng & Chen, 2006; Peng & Lü, 2007; Zhou, Wu & Wang, 2007; Zhou, Zhang & Gan, 2008). However, there has been a lack of detailed design of reading strategy pedagogy, apart from the work of Zhou, Zhang & Gan (2008). According to the feedback collected from this study, the participants had received scant reading strategy instruction in the CSL classroom. It seems that reading strategy instruction has not gained enough attention from CSL curriculum developers and teachers. This study has provided some useful implications for the practice of reading strategy instruction in CSL reading courses,

including when CSL reading strategy instruction should begin, what reading strategies are worth teaching, and how teachers can enhance adult learners' understanding of the effective use of CSL reading strategies.

As suggested by Walker (1984), after helping students establish a clear concept of the written language through 150-300 hours of teaching, reading strategy becomes one of the foci in the CSL reading classroom (p.73). Opinions differ, however, about the most suitable time to start teaching readings strategies. Generally, reading courses (in the context of mainland China) are not started until the CSL learners are approaching or have already reached the intermediate level, which calls for at least 800 hours of learning time, equivalent with HSK Level 3 (Zhou, Wu & Wang, 2007). This is congruent with the findings of this study, which indicate that the language threshold in CSL reading probably occurs in the period when overall CSL proficiency is transiting from the elementary to the intermediate level; and effective use of reading strategies can help CSL readers cross the language threshold. However, adult learners should have commanded reading strategy knowledge in their L1 reading experiences to different extents. As shown in this study, at the elementary level, CSL learners already demonstrated a variety of reading strategies. It may be a bit late at the intermediate level to raise their awareness about reading strategies. In order to get students to foster relevant knowledge in advance, Zhou, Wu & Wang (2007) recommended that, after 400 hours of learning time when CSL learners have commanded the most common vocabulary and characters of the elementary level, usually in the second semester of the first academic year for full-time students, it is acceptable to start teaching relevant knowledge about CSL reading.

Therefore, it is plausible for CSL reading strategy instruction to commence from the elementary level. As to which reading strategies should be taught, the 30 strategies in SRS (excluding S4) seem to suffice the need to generate a general scheme for reading strategy instruction. The SRS was adapted from the 4-pronged Comprehension Strategy Framework (McNamara et al., 2007) and supplemented with another four decoding strategies considered unique to CSL reading. The strategies can be divided into four categories: Preparing to read; Interpreting words, sentences and ideas in the text; Going beyond the text; and Organizing, restructuring, and synthesizing information in the text. Teachers are supposed to decide which strategies are suitable for target students according to their CSL proficiency levels. Given that the elementary CSL learners tend to use less reading strategies and pay less attention to monitoring their own reading behaviors, CSL teachers should foster students' awareness of actively applying reading strategies from the elementary level. Furthermore, teachers also need to consider that CSL learners of different L1 backgrounds might have different characteristics in CSL reading. Since NCCS learners usually lag behind CCS learners in terms of word recognition ability, teachers should probably assign different tasks to the two groups. NCCS learners might need to do more exercise to improve their word recognition speed, while CCS learners could do more extensive reading to be fluent readers of Chinese at the discourse level.

There is a drawback of using the SRS though—it only draws a broad-brush picture for reading strategies that can possibly be used in CSL reading. More sub-strategies can be developed for each strategy in the SCRS. For example, S24 (I use prior knowledge) can be elaborated as using words learned previously, using

linguistic knowledge available in L1 and using word knowledge. But it is beyond the scope of this thesis to discuss this in detail. There are series of reading textbooks organized by reading skills, however, which include different categories of reading strategies along with detailed explanations (e.g., Zhang, 2009, 2011; Zhang & Liu, 1999; Zhou & Zhang, 2001).

Compared to what reading strategies should be taught, how they should be taught is of more concern to CSL teachers (Han & Anderson, 2009). There is no doubt that the ultimate goal of teaching the effective use of reading strategies is to improve students' reading proficiency. In the present study, it was found that the use of reading strategies to monitor reading processing will lead to successful reading, which requires a certain level of metacognitive awareness. Hence, teachers should not only tell students which reading strategies are out there, they need to direct them to become able to apply them, and to monitor the application process, as well as its possible outcome—— comprehension. But it then becomes a question of how teachers can evaluate whether or not students' monitoring processes are effective. Verbal, or think-aloud, reporting, in this regard, is a helpful method. By talking aloud to describe ongoing activities in their minds, students are able to present their application of reading strategies; in the meantime, teachers can judge if their actions are effective or not. This is also good for creating an interactive atmosphere in the classroom.

According to the participants' feedback, reading courses are often test-oriented. CSL teachers tend to distribute questions to the students and then the rest of the class is about explaining answers to the questions, which lacks classroom interaction. Pressley (2002) criticized that teachers simply assume that by continuous reading and

testing, students can become regulated readers to use reading strategies. Adult CSL learners might have been equipped with knowledge of reading strategies in their L1 reading experiences, however, it is still necessary for teachers to raise students' awareness about applying reading strategies in CSL reading. After all, reading strategies need to be practiced consistently so that they can become reading skills and be integrated into the CSL learners' reading ability.

6.6 Suggestions for further research

This study has focused on the impacts of CSL reading strategies on CSL reading performance and has discussed its interrelationship with CSL proficiency as well as L1 literacy in CSL reading. Against the CSL context, a different perspective is provided, distinguishing itself from most research based on English and its cognate languages. However, considering the small number of studies pertinent to CSL reading strategies, there is a necessity to conduct further research.

Theoretically, more quantitative research about CSL reading strategies is needed. Previous quantitative studies on CSL reading strategies have mainly utilized questionnaire surveys as the primary research method, but data from questionnaires might not be able to reveal the actual use of strategies during reading processing. This study has managed to observe this process through verbal reporting, yet the analysis is more qualitative. One important qualitative finding is that reading strategy could be a stronger predictor for CSL reading performance compared with overall CSL proficiency, which is considered as the predominant factor in most previous L2 reading research. Because of the lack of standard

reference for participants' overall CSL proficiency, it was not feasible to collect quantitative data and conduct any statistical analysis such as regression in this study. Therefore, future research might need to screen the participants and recruit those with valid CSL proficiency test scores such as HSK. With quantitative data about CSL proficiency level, it is possible to use regression analysis to evaluate whether reading strategy is a stronger predictor than CSL proficiency in CSL reading performance.

Also, it is better for future research to observe L1 reading process and its outcomes on top of CSL reading, since L1 literacy is another important factor in CSL reading. The results of the questionnaire survey suggest that CSL reading strategy is related closely to L1 reading strategies, but it is unclear how they are connected and whether reading strategies are used with the same level of success in L1 reading and CSL reading.

Another possible direction for future research is to conduct longitudinal studies of CSL reading strategy development. This study is cross-sectional, which only provides a snapshot of CSL reading strategies used by adult learners, and the findings are, to some extent, complicated by the idiosyncrasy of the participants. A longitudinal study would help to provide more insights into the developmental pattern of CSL reading strategies among adult learners.

As noted in the previous section, there is lack of systematic reading strategy instruction in the CSL classroom, irrespective of practical research on the effects of CSL reading strategy instruction. Hence, it is of great value for researchers to combine practice with theory and carry out action research in the classroom with different purposes—— to construct the appropriate CSL reading strategy teaching

scheme, set the apposite time to introduce reading strategy into reading courses, and explore the effects of reading strategy instruction on reading proficiency development.

Appendices

Appendix 1 閱讀策略的分類維度、類別與變量

Note. Adapted from 錢玉蓮(Qian, Y.L.) (2007)。《韓國學生漢語學習策略研究》，

(pp.185-186)。北京：世界圖書出版公司。

維度	因子類別	變量
閱讀學習觀念	文本觀念	依據文本提供的信息感知、分析、猜測、推論等
	超文本觀念	根據背景知識、自身知識結構、方法等理解文本
管理策略	選材	主動選材 被動選材
	監控	調整閱讀方法 自我評價
閱讀學習策略	語境	根據詞語結構線索 根據上下文線索 根據文章結構線索
	母語	翻譯成母語理解 用母語記憶內容 用母語概括大意
	預覽	預覽書名 預覽書目 預覽書中圖表信息

	略讀	粗略熟悉文章內容 瞭解文章結構 注意文章開頭結尾 注意段落中心句 帶著問題閱讀
	互動	感知輸入 領會輸入
	推論	運用背景知識推斷 根據已知內容推斷 理解作者言外之意
	標記	劃重點 作記號

Appendix 2 Reading materials

Narrative texts:

Elementary level

家有小伙初长成

每家的孩子都是在一夜之间长大的。几个月前，上初一的儿子还和八九岁的孩子一起玩。可现在，刚上初二，他已经长得很高了。两个大人一个小孩，我们的房间变得很小。最近，他老说自己看不清东西。他要我们陪他去看眼睛。他觉得戴眼镜看起来很成熟。以前买衣服都是我们管。可现在买衣服，他自己挑。在我心里，儿子已经放了出去。可在他妈妈心里，儿子又被拉了回来。儿子一下子就长大了！

Intermediate level

家有小伙初长成

其实，每家的孩子都是在一夜之间长大的。记得还是几个月前，上初一的儿子还和八九岁的孩子一起趴在地上玩。可现在，刚上初二，一没留神，他已经长得人高马大了。我们不大的房间，三个“大人”挤在一起，顿时觉得很挤。近一段时间，他老说自己看不清东西，到眼镜店一验，近视，不过不严重，只有 150 度。医生说，眼镜可配可不配。后来我观察，他看书可以不戴，看电视可以不戴，但上学、走路是一定要戴的。问他为什么要这样？他反问，你不觉得这样我看起来很成熟吗？以前买衣服都是我们管买他管穿，他不能提什么要求。可

现在买衣服，得由他挑。他挑的，他妈妈大多不满意。我劝解他妈妈，孩子是父母这张弓上射出去的箭。现在你的儿子已不再是你的一部分了，他是他自己的了。我知道做父母的区别，在我心里，儿子早已放了出去，可在妈妈心里，儿子又被拉了回来。但不管怎样，儿子一下子就长大了！

Advanced

家有小伙初长成

其实，每家的孩子都是在一夜之间长大的。记得还是几个月前，上初一的儿子还和八九岁的孩子一起趴在地上玩。可现在，刚上初二，一没留神，他已长得人高马大了。我们不大的房间，三个“大人”挤在一起，空间顿觉拥挤不堪。近一段时间，他老说自己看不清东西，到眼镜店一验，近视，不过不严重，只有 150 度。医生说，眼镜可配可不配。他妈是戴眼镜出身，深知戴眼镜之苦，所以劝儿子别戴。可打那以后看电视，他就一定要皱着眉，眯着眼，做看东西困难状。怕他以后成了眯眯眼，只好带他去配。后来我观察，他看书可以不戴，看电视可以不戴，但上学、走路是一定要戴的。问他为何要这样？他反问，你不觉得这样我看起来很成熟吗？以前买衣服都是我们管买他管穿，他不能提什么要求。我们是投资方，我们说了算。可现在买衣服，得由他挑。他挑的，他妈妈大多不满意，觉得像不良青年，结果回回闹得不愉快。再跟他谈投资方的事，他就反感。再后来，我拿纪伯伦的话劝解他妈妈，孩子是父母这张弓上射出去的箭。现在你的儿子已不再是你的一部分了，他是他自己的了。我知道做父

母的区别，在我心里，儿子早已放了出去，可在妈妈心里，儿子又被拉了回来。但不管怎样，儿子一下子就长大了！

Argumentative texts:

Elementary level

“没什么”和“有什么”

小刘很喜欢咖啡，想开一家咖啡馆。有空的时候，他到处喝咖啡。有一次，他约我喝咖啡。我跟他去了一家咖啡馆。可是，他不喜欢那家店。我问他：“怎么样，这家店的咖啡不错吧？”他说：“没什么！”以后我跟他去不同的咖啡馆，喝过不同口味的咖啡。但他都说：“没什么。”我还有一个朋友，小金。她对蛋糕很有兴趣，而且很认真研究。她说：“每一件事情一定都‘有什么’。”如果我们愿意向成功的人学习，一定可以发现值得学习的东西。

Intermediate level

“没什么”和“有什么”

小刘爱好咖啡，将来要开一家咖啡馆。有空的时候，他到处喝咖啡。有一次，他约我喝咖啡。带着期待的心情，我跟他去了一趟咖啡馆。可是，他对那家咖啡馆似乎没有什么好感。我问他：“怎么样，这家店的咖啡口味不错吧？”他淡淡地说：“没什么！”以后我陆陆续续跟他到达不同的咖啡馆，品尝过不同

口味的咖啡。但对所有去过的咖啡馆，他的评价都是“没什么”。这让我想起一位对蛋糕有兴趣的朋友小金。无论在哪里，品尝谁做的蛋糕，她都很认真地研究。如果做西点蛋糕的师傅在场，她还会向对方请教。她说：“其实每一件事情一定都‘有什么’，关键在于你有没有留意。”

当我们自身的知识还不够的时候，很容易错过其中重要的部分，甚至误以为它没什么学问。而那些已经有专业知识的人，才看得懂其中的门道，态度反而谦卑得多。如果我们愿意向成功的人学习，收获最多的，其实还是自己。只要你仔细观察，一定可以发现值得学习的东西。

Advanced level

“没什么”和“有什么”

小刘是一位咖啡爱好者，立志将来要开一家咖啡馆。闲暇时间，他到处喝咖啡。有一次，他约我喝咖啡。带着朝圣的心情，我跟他去了一趟咖啡馆。不巧他对那家咖啡馆似乎没有什么好感。我问他：“怎么样，这家店的咖啡口味不错吧？”他淡淡地说：“没什么！”以后我陆陆续续跟他到达不同的咖啡馆，品尝过不同口味的咖啡。但对所有去过的咖啡馆，他的评价都是“没什么”，而且带着点儿不屑的语气。这让我想起一位对西点蛋糕有兴趣的朋友小金。无论在哪里，品尝谁做的西点蛋糕，她都很认真地研究里面的配方。如果做西点蛋糕的师傅在场，她还会向对方讨教，研究成功的技巧。她说：“其实每一件事情一定都‘有什么’，关键在于你是否留意。”

当我们自身专业素养还不够的时候，缺乏足够的判断力和鉴赏力，很容易错过其中精华的部分，甚至误以为它没什么学问，不屑一顾。而那些已经具备专业知识的人，才看得懂其中的门道，态度反而谦卑得多。如果我们愿意放下架子，看到别人杰出的地方，看出别人成功的“秘诀”，收获最多的，其实还是自己。正如孔子所说：“三人行，必有我师焉。”只要你仔细观察，一定可以发现值得学习的东西。

Appendix 3 Survey of Reading Strategies/ SRS (three versions)

English and simplified Chinese:

Survey of Chinese Reading Strategies

汉语作为第二语言阅读策略调查

Thank you for participating in our survey. This survey is to investigate the methods or techniques that you use when you read different texts in Chinese silently. You can choose to answer in either English or Chinese. 谢谢参加本调查。本调查的目的是考察你默读不同文本试用的方法或技巧。你可以选择用英语或汉语填写。

Part I 第一部分

Please fill in the personal information (Please ✓ as appropriate).

请填入个人资料。符合的请打“✓”。

1. Gender 性别: Female 女 ☐ Male 男 ☐
2. Age 年龄: _____
3. What is your first language/the most commonly used language in your daily life?
你的母语/生活中最常用的是哪种语言?
Please specify 请说明: _____
4. Is Chinese your 2nd ☐ 3rd ☐ 4th ☐ language? 汉语是你的第 2 ☐ 3 ☐ 4 ☐ 语言。
Other situation, please specify 其他情况, 请说明: _____
5. How long have you learned Chinese? 你学了多久汉语? _____
6. Have you taken any Chinese proficiency test? Yes ☐ No ☐
你有没有参加过任何汉语水平考试吗? 有 ☐ 没有 ☐
If yes, please specify the name of the test and the result.
如果有, 请说明考试的名称和成绩。 _____
7. Indicate how good you consider yourself in speaking, listening comprehension, reading, and writing in each language, using a scale of 1-5 (1 = very poor; 3 = average; 5 = very good).
请从听说读写四个方面评价你对以下语言的掌握程度(1-非常差; 3-中等; 5 非常好)。

Language 语言	Listening 听力	Speaking 口语	Reading 阅读	Writing 写作
First language 母语				
Chinese 汉语				
English 英语				

8. Why do you want to learn Chinese? 你为什么想学习汉语?
(You can choose more than one option. 你可以做多项选择。)

☐ passing an exam 通过考试

☐ sharpening language skills 增强语言技能

☐ looking for a job 找工作 ☐ being interested in Chinese 对汉语感兴趣

☐ cultural enrichment 丰富文化知识 ☐ other(s), please specify 其他情况, 请说明:____

9. Have you received any instruction about reading strategies when learning Chinese?
学习汉语时, 老师有没有教你阅读汉语的策略?

☐ No 没有 (please move on to 11 请跳到 11)

☐ Yes 有 Please specify 请说明:

occasionally 很少☐ sometimes 有时候☐ often 常常☐

10. Please briefly evaluate the reading course in your university (content, teaching method, assignment):_____

11. Which aspect do you consider as the most difficult part when reading Chinese texts?

你认为阅读汉语最难的是哪方面?

☐ Chinese character 汉字 ☐ vocabulary 词语

☐ grammar 语法 ☐ genre 体裁 ☐ cultural differences 文化差异

☐ other(s), please specify 其他情况, 请说明:_____

12. Is there any other information that you consider as important for this survey but has not been included? 你是否认为有其他重要的信息需要告诉我们?

If yes, please specify 如果有, 请说明:_____

Part II 第二部分

Please read the following statements, and circle the number that fits in your own experience.

请根据你个人的经验，在适合的数字上画“○”。

1	2	3	4	5
Never	Occasionally	Sometimes	Usually	Always
从不	很少	有时候	常常	总是

What will you do when you read? 你会怎样阅读?	Reading in your native language 母语阅读					Reading Chinese 汉语阅读				
1. I have a goal when I read. 我带着目的阅读。	1	2	3	4	5	1	2	3	4	5
2. I examine titles and subheadings before reading. 阅读前，我会研究题目和副标题。	1	2	3	4	5	1	2	3	4	5
3. I skim the text to get a general idea about the text. 我很快地浏览，找出文章的大意。	1	2	3	4	5	1	2	3	4	5
4. I generate question(s) before reading. 阅读前，我会对文章产生疑问。	1	2	3	4	5	1	2	3	4	5
5. I try to understand the meaning of each character. 我努力理解每个汉字的意思。	1	2	3	4	5	1	2	3	4	5
6. I try to understand the meaning of each word. 我努力理解每个词语的意思。	1	2	3	4	5	1	2	3	4	5
7. I use radicals to guess the meanings of unknown characters. 我利用偏旁猜不懂的字的意思。	1	2	3	4	5	1	2	3	4	5
8. I try to parse the sentence into meaning units 我努力把句子切分成有意义的单位。	1	2	3	4	5	1	2	3	4	5
9. I try to use context clues to interpret words or phrases. 我会利用情境线索理解词语或词组的意思。	1	2	3	4	5	1	2	3	4	5
10. I reread sentences or paragraphs when the content is difficult. 遇到难的内容，我会重读句子或段落。	1	2	3	4	5	1	2	3	4	5
11. I paraphrase phrases or sentences. 我会用自己的话解释词组或句子。	1	2	3	4	5	1	2	3	4	5
12. I translate Chinese into my native language. 我会把汉语翻译成我的母语。	1	2	3	4	5	1	2	3	4	5
13. I think in both Chinese and my native language. 我同时用汉语和母语思考。	1	2	3	4	5	1	2	3	4	5
14. I make prediction(s) about the text content. 我会推测文章的内容。	1	2	3	4	5	1	2	3	4	5
15. I mark the text or take notes when I read. 我阅读的时候会在文中做标记或者做笔记。	1	2	3	4	5	1	2	3	4	5

16. I try to distinguish what is important and what is not. 我努力辨别重要的内容。	1	2	3	4	5		1	2	3	4	5
17. I refer to previous sentences and ideas. 我会联系前面读过的句子和内容。	1	2	3	4	5		1	2	3	4	5
18. I go back and forth in the text to find relations among ideas. 我会反复阅读，找出上下文的关系。	1	2	3	4	5		1	2	3	4	5
19. I check my understanding. 我会检查自己的理解是否正确。	1	2	3	4	5		1	2	3	4	5
20. I correct my behavior (e.g., when losing concentration). 我会纠正自己的阅读行为（如：精神不集中的时候）。	1	2	3	4	5		1	2	3	4	5
21. I change my reading rate when necessary. 我会适当地调整自己的阅读速度。	1	2	3	4	5		1	2	3	4	5
22. I recognize the text structure. 我努力辨认文章的结构。	1	2	3	4	5		1	2	3	4	5
23. I react to the author's writing style. 我会留意作者的写作风格。	1	2	3	4	5		1	2	3	4	5
24. I use prior knowledge. 我会利用已有的背景知识。	1	2	3	4	5		1	2	3	4	5
25. I formulate question(s) when I read. 我带着问题阅读。	1	2	3	4	5		1	2	3	4	5
26. I speak out or explain ideas to myself when I read. 我阅读时，会对自己说出或者解释自己的想法。	1	2	3	4	5		1	2	3	4	5
27. I try to picture or visualize what I read. 我会想象读到的内容。	1	2	3	4	5		1	2	3	4	5
28. I seek to external sources (e.g., dictionary, teacher, etc.) 我会寻找帮助，如：查字典或向老师提问。	1	2	3	4	5		1	2	3	4	5
29. I use questions, notes or graphs to guide my reading. 我会用问题、笔记或者图表帮助自己阅读。	1	2	3	4	5		1	2	3	4	5
30. I analyze and evaluate the information in the text. 我会分析和评价文章的内容。	1	2	3	4	5		1	2	3	4	5
31. I summarize what I read (e.g., write after reading). 我会总结读过的文章，如：读后写作总结。	1	2	3	4	5		1	2	3	4	5

Japanese with simplified Chinese:

CSL の読む方法の調査

汉语作为第二语言阅读策略调查

私達の調査に参加をありがとう。この調査はいろいろな中国語の文章を黙読する時の方法を調査することである。日本語や中国語で記入して選択します。

谢谢参加本调查。本调查的目的是你考察默读不同文本试用的方法或技巧。你可以选择用日语或汉语填写。

Part I

個人情報を記入してください。必要に応じて“√”してください。

请填写个人资料。符合的请打“√”。

1. 性別: 女性 ☐ 男性 ☐ 性別: 女 ☐ 男 ☐
2. 年齢: _____ 年龄: _____
3. あなたの母語/日常生活に一番使う言語は何ですか。
你的母语/生活中最常用的是哪种语言?
説明してください(请说明): _____

4. 中国語はあなたの第二 ☐ 第三 ☐ 第四 ☐ 外語ですか。
汉语是你的第 2 ☐ 3 ☐ 4 ☐ 语言。

他の情形を説明してください(其他情况, 请说明): _____

5. どのぐらい中国語を勉強したか。你学了多久汉语? _____
6. 中国語の能力テストに参加したか。 参加した ☐ 参加しない ☐
你有没有参加过任何汉语水平考试吗? 有 ☐ 没有 ☐

参加したならば、テストの名前と結果を説明してください: _____

如果有, 请说明考试的名称和成绩。 _____

7. 言語能力の4つの側面を評価してください(1-苦手; 3-アベレージ; 5 優良)。
请从听说读写四个方面评价你对以下语言的掌握程度(1-非常差; 3-中等; 5 非常好)。

国語 语言	聴解 听力	口語 口语	閲読 阅读	書き込み 写作
日本語 日语				
中國語 汉语				

8. どうして中国語を勉強したか。你为什么想学习汉语?
☐ テスト 通过考试 ☐ 言葉能力を強化する 增强语言技能

☐仕事探し 找工作 ☐中国語に興味がある 对汉语感兴趣

☐文化を豊かにする 丰富文化知识

他の情形を説明してください（其他情况，请说明）：_____

9. 中国語を勉強する時、読む方法についての教えがありますか。

学习汉语时，老师有没有教你阅读汉语的策略？

☐ありません（11 回答してください） 没有(请跳到 11)

☐あります 有 あるならば、説明してください（如果有，请说明）：

☐ たまに 很少 ☐ときどき 有时候 ☐よく 常常

10. 大学の読書コースを評価してください（内容や、指導方法や宿題など）
请概括地评价你所在大学的阅读课程（包括内容，教学方法和作业等）：

11. 中国語でどのを読むために最も難しいと思いますか？

你认为阅读汉语最难的是哪方面？

☐漢字 汉字 ☐語彙 词语

☐文法 语法 ☐ジャンル 体裁 ☐文化の違い 文化差异

他の情形を説明してください（其他情况，请说明）：_____

12. 私達に指示する必要がある他の重要な情報があると思いますか？

你是否认为有其他重要的信息需要告诉我们？

説明してください（如果有，请说明）：_____

Part II

次の文を読み、あなたに一番合う数字を選びなさい。

请阅读下文，根据你个人的经验，在适合的数字上画“○”。

1	2	3	4	5
ぜんぜん 从不	たまに 很少	ときどき 有时候	よく 常常	いつも 总是

どのように読み取るか？ 你会怎样阅读？	日本語を読む 母语阅读					中國語を読む 汉语阅读				
1. 私は読む時目的がある。 我带着目的阅读。	1	2	3	4	5	1	2	3	4	5
2. 私は読む前にタイトルと副題を注意する。 阅读前，我会注意题目和副标题。	1	2	3	4	5	1	2	3	4	5
3. 私は文章の大概に通じるため、ざっと読む。 我很快地浏览，找出文章的大意。	1	2	3	4	5	1	2	3	4	5
4. 私は読む前に問題を考える。 阅读前，我会对文章产生疑问。	1	2	3	4	5	1	2	3	4	5
5. 私はすべての漢字の意味を理解してみる。 我努力理解每个汉字的意思。	1	2	3	4	5	1	2	3	4	5
6. 私はすべての単語の意味を理解してみる。 我努力理解每个词语的意思。	1	2	3	4	5	1	2	3	4	5
7. 私は知らない漢字のパートを使い、意味を推測する。 我利用偏旁猜不懂的字的意思。	1	2	3	4	5	1	2	3	4	5
8. 私は文を意味単位に分析してみる。 我努力把句子切分成有意义的单位。	1	2	3	4	5	1	2	3	4	5
9. 私は文脈のヒントを使い、単語の意味を理解してみる。 我会利用情境线索理解词语或词组的意思。	1	2	3	4	5	1	2	3	4	5
10. 私は難しい文と段落をもう一度読む。 遇到难的内容，我会重读句子或段落。	1	2	3	4	5	1	2	3	4	5
11. 私は単語と文を意識する。 我会把词组或句子用自己的话解释。	1	2	3	4	5	1	2	3	4	5
12. 私は母語に中国語を翻訳する。 我会把汉语翻译成我的母语。	1	2	3	4	5	1	2	3	4	5
13. 私は母語と中国語両方で考える。 我同时用汉语和母语思考。	1	2	3	4	5	1	2	3	4	5

14. 私は文章の内容について予測する。 我会推测文章的内容。	1	2	3	4	5	1	2	3	4	5
15. 私は読む時文章にしるしをつける/ ノートを取る。 我阅读的时候会在文中做标记或者做笔记。	1	2	3	4	5	1	2	3	4	5
16. 私は重要な内容を区別できる。 我努力辨别重要的内容。	1	2	3	4	5	1	2	3	4	5
17. 私は前の文を参考する。 我会联系前面读过的句子和内容。	1	2	3	4	5	1	2	3	4	5
18. 私は文章を何度も繰り返し、内容前後の関係を探す。 我会反复阅读，找出上下文的关系。	1	2	3	4	5	1	2	3	4	5
19. 私は自分の理解を検査する。 我会检查自己的理解是否正确。	1	2	3	4	5	1	2	3	4	5
20. 私は自分の行為を正す（たとえば、精神を集中できない時）。 精神不集中或者出现错误时，我会纠正自己的阅读行为。	1	2	3	4	5	1	2	3	4	5
21. 私は必要な時、読む速度を変える。 我会适当地调整自己的阅读速度。	1	2	3	4	5	1	2	3	4	5
22. 私は文章の構造が分かる。 我努力辨认文章的结构。	1	2	3	4	5	1	2	3	4	5
23. 私は著者のスタイルに反応する。 我会留意作者的写作风格。	1	2	3	4	5	1	2	3	4	5
24. 私は背景知識を使う。 我会利用已有的背景知识。	1	2	3	4	5	1	2	3	4	5
25. 私は読む時、文章について問題を考える。 我带着问题阅读。	1	2	3	4	5	1	2	3	4	5
26. 私は読む時、独り言をする。 我阅读时，会对自己说出或者解释自己的想法。	1	2	3	4	5	1	2	3	4	5
27. 私は読むものを視覚化してみる。 我会想像读到的内容。	1	2	3	4	5	1	2	3	4	5
28. 私は外部ソース(たとえば、辞書と教師)に助けを求める。 我会寻找帮助，如：查字典或者问老师问题。	1	2	3	4	5	1	2	3	4	5
29. 私の読みを導くために、質問とノートとグラフを使う。 我会用问题，笔记或者图表帮助自己阅读。	1	2	3	4	5	1	2	3	4	5
30. 私は文章の内容を分析し、評価する。 我会分析和评价文章的内容。	1	2	3	4	5	1	2	3	4	5
31. 私は読むものをまとめてする（たとえば、読む後書く）。 我会总结读过的文章，如：读后写作总结。										

Korean with simplified Chinese:

CSL 읽기 전략에 대한 조사

汉语作为第二语言阅读策略调查

설문 조사에 참여해 주셔서 감사합니다. 본 조사는 당신은 각각 다른 중국어 텍스트
목독할 때 사용하는 방법이나 기법을 조사하는 것입니다. 한국어나 중국어로
대답하면 됩니다.

谢谢参加本调查。本调查的目的是你考察默读不同文本试用的方法或技巧。你可以选择用
韩语或汉语填写。

Part I

개인 정보를 작성해 주십시오. 빈칸에 √ 로 대답하십시오.

请填写个人资料。符合的请打“√”。

1. 성별: 남 ☐ 녀 ☐ 性别: 女 ☐ 男 ☐
2. 나이 年龄: _____
3. 당신은 제 1 언어/ 일상 생활에서 가장 사용되는 언어가 무엇입니까?
你的母语/生活中最常用的是哪种语言?
지정하십시오. (请说明): _____
4. 중국어는 당신의 제 2 ☐/3 ☐/4 ☐ 언어입니까?
汉语是你的第 2 ☐/3 ☐/4 语言。
다른 상황이 있다면, 지정하십시오 (其他情况, 请说明): _____
5. 당신은 중국어를 배운 지 얼마나 되었습니까?
你学了多久汉语? _____
6. 당신은 중국어 능력에 관한 시험을 쳐 본 적이 있습니까?
있음 ☐ 없음 ☐

你有没有参加过任何汉语水平考试吗? 有 ☐ 没有 ☐
있다면, 시험의 이름과 결과를 지정해주시기 바랍니다: _____
如果有, 请说明考试的名称和成绩。 _____

7. 당신에 대한 다음 언어 능력을 평가해주십시오. 1-5 수자를 사용해주십시오.(1=잘
못합니다, 3=괜찮습니다, 5=훌륭합니다.)
请从听说读写四个方面评价你对以下语言的掌握程度(1-非常差; 3-中等; 5 非常好)。

언어 语言	듣기听力	말하기 口语	읽기阅读	쓰기写作
모국어 母语				
중국어 汉语				

8. 중국어를 배운 이유는 무엇입니까? 你为什么想学习汉语?
☐ 시험 공부 通过考试 ☐ 언어 능력을 향상시키기 위해서 增强语言技能

☐취직 找工作

☐중국어에 관심이 있음 对汉语感兴趣

☐문화를 풍부하게 함 丰富文化知识

다른 이유가 있다면, 지정하십시오 (其他情况, 请说明): _____

9. 당신은 중국어를 배울 때 읽기 전략에 대한 지도를 받은 적이 있습니까?

学习汉语时, 老师有没有教你阅读汉语的策略?

☐있음 有 ☐없음 没有 (11 번에 가십시오 请跳到 11)

있다면, 지정하십시오 (如果有, 请说明):

☐절대 很少 ☐가끔 有时候 ☐자주 常常

10. 대학교 읽기 과정에 대한 평가해 주십시오. (내용, 교수법, 과제 등 포함) 1-5 수자를 사용해 주십시오. (1=잘 못합니다, 3=괜찮습니다, 5=훌륭합니다).

请概括地评价你所在大学的阅读课程 (包括内容, 教学方法和作业等) (1-非常差; 3-中等; 5 非常好): _____

11. 중국어를 읽을 때 어떤 것이 제일 어렵다고 생각합니까?

你认为阅读汉语最难的是哪方面?

☐한자 汉字 ☐단어 词语 ☐문법 语法

☐장르 体裁 ☐문화 차이 文化差异

☐다른 상황, 여기서 설명해 주십시오 (其他情况, 请说明): _____

12. 또 알려주고 싶은 것이 있습니까? 你是否认为有其他重要的信息需要告诉我们?

있으면, 여기서 설명해 주십시오 (如果有, 请说明): _____

Part II

다른 내용을 읽고 당신의 경험에 맞는 것을 고르십시오.

请根据你个人的经验，在适合的数字上画“○”。

1	2	3	4	5
절대 从不	거의 很少	가끔 有时候	자주 常常	항상 总是

읽기 습관 你会怎样阅读?	모국어 읽기 母语阅读					중국어 읽기 汉语阅读				
1. 내가 읽을 때에는 목표를 가지고 있다. 我带着目的阅读。	1	2	3	4	5	1	2	3	4	5
2. 내가 읽기 전에 제목과 부제를 확인한다. 阅读前，我会注意题目和副标题。	1	2	3	4	5	1	2	3	4	5
3. 내가 요점을 얻을 수 있도록 텍스트를 대충 훑어본다. 我很快地浏览，找出文章的大意。	1	2	3	4	5	1	2	3	4	5
4. 내가 읽기 전에 질문을 만들어 낸다. 阅读前，我会对文章产生疑问。	1	2	3	4	5	1	2	3	4	5
5. 내가 각각 한자의 뜻을 이해하려고 한다. 我努力理解每个汉字的意思。	1	2	3	4	5	1	2	3	4	5
6. 내가 각각 단어의 뜻을 이해하려고 한다. 我努力理解每个词语的意思。	1	2	3	4	5	1	2	3	4	5
7. 내가 어근어로 알 수 없는 한자를 추측한다. 我利用偏旁猜不懂的字的意思。	1	2	3	4	5	1	2	3	4	5
8. 내가 문장을 의미있는 단위로 나누어 분석하려고 한다. 我努力把句子切分成有意义的单位。	1	2	3	4	5	1	2	3	4	5
9. 내가 문맥을 통해 단어 또는 구절의 의미를 밝힌다. 我会利用情境线索理解词语或词组的意思。	1	2	3	4	5	1	2	3	4	5
10. 콘텐츠가 어려운 때 내가 문장이나 단락을 다시 한번 읽어본다. 遇到难的内容，我会重读句子或段落。	1	2	3	4	5	1	2	3	4	5
11. 내가 구절이나 문장을 다른 말로 바꾸어 표현해 본다. 我会把词组或句子用自己的话解释。	1	2	3	4	5	1	2	3	4	5
12. 내가 중국어를 모국어로 번역한다. 我会把汉语翻译成我的母语。	1	2	3	4	5	1	2	3	4	5
13. 내가 중국어의 모국어와 함께 사용한다. 我同时用汉语和母语思考。	1	2	3	4	5	1	2	3	4	5
14. 내가 텍스트의 내용을 예상한다. 我会推测文章的内容。	1	2	3	4	5	1	2	3	4	5
15. 내가 읽을 때에는 텍스트를 표시하거나 필기를 한다. 我阅读的时候会在文中做标记或者做笔记。	1	2	3	4	5	1	2	3	4	5
16. 내가 중요하는 것 또는 중요하지 않는 것을 구분할 수 있다. 我努力辨别重要的内容。	1	2	3	4	5	1	2	3	4	5

17. 이전 문장과 아이디어를 참조한다. 我会联系前面读过的句子和内容。	1	2	3	4	5		1	2	3	4	5
18. 나는 아이디어 간의 관계를 찾기 위해서 텍스트를 앞뒤로 반복하여 읽어본다. 我会反复阅读，找出上下文的关系。	1	2	3	4	5		1	2	3	4	5
19. 나는 내 이해를 점검한다. 我会检查自己的理解是否正确。	1	2	3	4	5		1	2	3	4	5
20. 나는 내 행동을 교정한다.(예, 주의를 집중하지 않을 때에는) 精神不集中或者出现错误时，我会纠正自己的阅读行为。	1	2	3	4	5		1	2	3	4	5
21. 내가 필요하면 독서 속도를 조정한다. 我会适当地调整自己的阅读速度。	1	2	3	4	5		1	2	3	4	5
22. 내가 텍스트의 스트럭처를 알아본다. 我努力辨别文章的结构。	1	2	3	4	5		1	2	3	4	5
23. 내가 작가의 문체에 응한다. 我会留意作者的写作风格。	1	2	3	4	5		1	2	3	4	5
24. 내가 배경 지식을 이용한다. 我会利用已有的背景知识。	1	2	3	4	5		1	2	3	4	5
25. 내가 읽을 때에는 질문을 만들어 낸다. 我带着问题阅读。	1	2	3	4	5		1	2	3	4	5
26. 나는 읽을 때에는 말하고 싶은 것이나 견해를 말한다. 我阅读时会对自己说出或者解释自己的想法。	1	2	3	4	5		1	2	3	4	5
27. 나는 읽은 것을 상상하거나 마음속에 그려 본다. 我会想像读到的内容。	1	2	3	4	5		1	2	3	4	5
28. 나는 도움이 되는 외부 자료 (예, 사전 선생님 등)를 이용한다. 我会寻找帮助，如查字典或者问老师问题。	1	2	3	4	5		1	2	3	4	5
29. 나는 질문, 메모 또는 도표를 가이드로 사용한다. 我会用问题、笔记或者图表帮助自己阅读。	1	2	3	4	5		1	2	3	4	5
30. 내가 텍스트 중에 정부를 분석하고 평가한다. 我会分析和评价文章的内容。	1	2	3	4	5		1	2	3	4	5
31. 내가 읽은 것을 요약한다.(예, 읽은 후에 글쓰기). 我会总结读过的文章，如读后写作总结。	1	2	3	4	5		1	2	3	4	5

Appendix 4 Survey of CSL Reading Strategies/SCRS

Survey of CSL Reading Strategies

汉语作为第二语言阅读策略调查

Thank you for participating in our survey. This survey is to investigate the methods or techniques that you use when you read different texts in Chinese silently. You can choose to answer in either English or Chinese. 谢谢参加本调查。本调查的目的是你考察默读不同文本试用的方法或技巧。你可以选择用英语或汉语填写。

Part I 第一部分

Please fill in the personal information (Please $\sqrt{\quad}$ as appropriate).

请填入个人资料。符合的请打“ $\sqrt{\quad}$ ”。

1. Gender : Female ☐ Male ☐

性别：女 ☐ 男 ☐

2. What is your first language/the most commonly used language in your daily life?

你的母语/生活中最常用的是哪种语言？

please specify 请说明：_____

3. Is Chinese your 2nd☐/3rd☐/4th☐ language?

汉语是你的第 2☐/3☐/4☐语言。

Other situation, please specify 其他情况，请说明：_____

4. How long have you learned Chinese? 你学了多久汉语？_____

5. Have you taken any Chinese proficiency test? Yes☐ No☐

你有没有参加过任何汉语水平考试吗？ 有☐ 没有☐

If yes, Please specify the name of the test and the result.

如果有，请说明考试的名称和成绩。_____

6. Have you taken any English proficiency test? Yes☐ No☐

你有没有参加过任何英语水平考试？ 有☐ 没有☐

If yes, Please specify the name of the test and the result. 如果有，请说明考试的名称和成绩。

7. Why do you want to learn Chinese? 你为什么想学习汉语？

passing an exam 通过考试☐ sharpening language skills 增强语言技能☐

looking for a job 找工作□ being interested in Chinese 对汉语感兴趣□

cultural enrichment 丰富文化知识□

Other(s), please specify 其他情况, 请说明:_____

8. Have you received any instruction about reading strategies when learning Chinese?
学习汉语时, 老师有没有教你阅读汉语的策略?

Yes□ No□ 有□ 没有□

If yes, Please specify 如果有, 请说明:

occasionally 很少□ sometimes 有时候□ often 常常□

9. When did you start learning Chinese characters?
你什么时候开始学习汉字?

- (1) □ At the same time when I started learning spoken Chinese.
与我学习汉语口语同时

- (2) □ After I started learning spoken Chinese. How long after that? _____
在我学习汉语口语之后。多久以后? _____

Part II 第二部分

Please read the following statements, and circle the number that fits in your own experience.

请根据你个人的经验, 在适合的数字上画“○”。

1	2	3	4	5
Never	Occasionally	Sometimes	Usually	Always
从不	很少	有时候	常常	总是

- | | | | | | |
|---|---|---|---|---|---|
| 1. I have a goal when I read. 我带着目的阅读。 | 1 | 2 | 3 | 4 | 5 |
| 2. I examine titles and subheadings before reading. 阅读前, 我会研究题目和副标题。 | 1 | 2 | 3 | 4 | 5 |
| 3. I skim the text to get a general idea about the text. 我很快地浏览, 找出文章的大意。 | 1 | 2 | 3 | 4 | 5 |
| 4. I generate question(s) before reading. 阅读前, 我会对文章产生疑问。 | 1 | 2 | 3 | 4 | 5 |
| 5. I try to recognize each Chinese character. 我努力辨认每个汉字。 | 1 | 2 | 3 | 4 | 5 |
| 6. I try to recognize each word. 我努力辨认每个词语。 | 1 | 2 | 3 | 4 | 5 |
| 7. I try to understand the meaning of each character. 我努力理解每个汉字的意思。 | 1 | 2 | 3 | 4 | 5 |

8. I try to understand the meaning of each word. 我努力理解每个词语的意思。	1	2	3	4	5
9. I use radicals to guess the meanings of unknown characters. 我利用偏旁猜不懂的字的意思。	1	2	3	4	5
10. I try to parse the sentence into meaning units 我努力把句子切分成有意义的单位。	1	2	3	4	5
11. I try to use context clues to interpret words or phrases. 我会利用情境线索理解词语或词组的意思。	1	2	3	4	5
12. I reread sentences or paragraphs when the content is difficult. 遇到难的内容, 我会重读句子或段落。	1	2	3	4	5
13. I paraphrase phrases or sentences. 我会把词组或句子用自己的话解释。	1	2	3	4	5
14. I translate Chinese into my native language. 我会把汉语翻译成我的母语。	1	2	3	4	5
15. I think in both Chinese and my native language. 我同时用汉语和母语思考。	1	2	3	4	5
16. I make prediction(s) about the text content. 我会推测文章的内容。	1	2	3	4	5
17. I mark the text or take notes when I read. 我阅读的时候会在文中做标记或者做笔记。	1	2	3	4	5
18. I can distinguish what is important and what is not. 我能够辨别重要的内容。	1	2	3	4	5
19. I refer to previous sentences and ideas. 我会联系前面读过的句子和内容。	1	2	3	4	5
20. I go back and forth in the text to find relations among ideas. 我会反复阅读, 找出上下问的关系。	1	2	3	4	5
21. I check my understanding. 我会检查自己的理解是否正确	1	2	3	4	5
22. I correct my behavior (e.g., when losing concentration). 精神不集中或者出现错误时, 我会纠正自己的阅读行为。	1	2	3	4	5
23. I change my reading rate when necessary. 我会适当地调整自己的阅读速度。	1	2	3	4	5
24. I recognize the text structure. 我看出文章的结构。	1	2	3	4	5
25. I react to the author's writing style. 我会留意作者的写作风格。	1	2	3	4	5
26. I use background knowledge. 我会利用已有的背景知识。	1	2	3	4	5
27. I formulate question(s) when I read. 我带着问题阅读。	1	2	3	4	5
28. I speak out or explain ideas to myself when I read. 我阅读时, 会对自己说出或者解释自己的想法。	1	2	3	4	5
29. I try to picture or visualize what I read. 我会想像读到的内容。	1	2	3	4	5
30. I seek to external sources (e.g., dictionary, teacher, etc.) 我会寻找帮助, 如: 查字典或者问老师问题。	1	2	3	4	5
31. I use questions, notes or graphs to guide my reading. 我会用问题, 笔记或者图表帮助自己阅读。	1	2	3	4	5
32. I analyze and evaluate the information in the text. 我会分析和评价文章的内容。	1	2	3	4	5
33. I summarize what I read (e.g., write after reading). 我会总结读过的文章, 如: 读后写作总结。	1	2	3	4	5

Appendix 5 Reading materials of the warm-up task

Elementary level³

(1) 最快乐的一天

一个小女孩儿第一次参加婚礼，她小声问妈妈：“新娘为什么穿白衣服？”妈妈想简单地告诉她，就说：“白色是快乐的颜色，今天是她最快乐的一天。”小女孩儿想了一会儿，又问：“那为什么新郎穿黑的？”

(2) 白头发

一天，一个小姑娘走到妈妈身边，非常认真地看了一会儿妈妈的头发。忽然，她伤心地说：“妈妈，为什么你有白头发啊？”妈妈回答：“是这样，每次当你做了错事，让我生气的时候，我的一根头发就会变白。”小姑娘想了一会儿，又问：“妈妈，那外婆的头发怎么会都是白的呢？”

Intermediate level⁴

叶公好龙

³ Adapted from 張園 (Zhang, Y.) (2005). 《新概念漢語閱讀》(pp.86). 北京：北京大學出版社。

⁴ Adapted from 朱子儀、鄭蕊 (Zhu, Z.Y. & Zheng, R.) (2008). 《閱讀中文(第一冊)》(pp.33-34). 北京：高等教育出版社。

每个人都有自己的爱好。这个人很好学，那个人好吃、好喝酒，另一个人好玩。特别的爱好被称为“嗜好”。嗜好经常说的是有点过分的或者不太好的爱好。

古代有个人姓沈，因为他做官的地方叫“叶”，大家都尊敬地称他为“叶公”。叶公有一个嗜好，他特别喜欢龙，也就是“好龙”。喜欢龙在中国本来不算什么，在古代，龙是最大的吉祥物。大家都很熟悉龙的形象，但是没人见过真的龙。叶公喜欢龙的程度谁也比不上。他家里到处都装饰着龙的图案，柱子和门窗上都雕刻了龙，墙上画满了龙，连自己穿的衣服、盖的被子上也都绣了龙。

叶公因为喜欢龙而出了名，连天上的龙也听说了，叶公这么喜欢龙，让龙非常感动。龙想到他家看看，和他见一面。龙真的来到叶公家了，龙头从窗口伸了进来。没想到叶公一见到真的龙，吓得脸都白了，赶快逃走。原来叶公喜欢的并不是真的龙，而是雕在柱子上、画在墙上的假龙。

如今人们使用“叶公好龙”这个成语，讽刺只是表面上喜欢或假装喜欢某个东西、某种情况，实际上并不真喜欢。

Advanced level⁵

最幸运的人

⁵Adapted from 羅青松 (2005)。發展漢語高級漢語閱讀（上）(pp.73-74) 北京：北京語言大學出版社。

在一个贫寒的家庭里，爸爸辛辛苦苦地工作，儿子很懂事，从不向父母提要求。有一天，儿子双眉紧锁。细心的父亲关切地问儿子，儿子开始什么也不肯说，后来经不起父亲的一再追问，才吞吞吐吐地说：“同学们都有自行车，只有我没有……”父亲沉默了，因为家里实在没有多余的钱。

过了几天儿子说：“给我两元钱吧。我要玩转盘游戏，奖品是自行车。”父亲看着儿子渴望的眼神，马上掏出了两元钱。儿子后来蹦蹦跳跳地跑回家：“我中了自行车，我是世界上最幸运的人，再大的困难也难不倒我了……”若干年后，儿子事业有成，那辆自行车他一直保存着。

父亲临终前，把儿子叫到床前：“你知道那辆自行车是怎样中的吗？”儿子困惑地看着父亲。“那辆自行车其实是爸爸买的。我从亲戚朋友那儿借钱买下那辆自行车，因为我不想让你觉得自己是世界上最不幸的人。”

这个儿子是日本著名心理学家、教育家多湖辉。他的一个著名理论是：让孩子觉得他是最幸福的人，那么他就一定能成为一个成功的人。

Appendix 6 Instruction for the independent rater

Part I Reading Strategy Coding Scheme

Please identify the reading strategy used by the subject according to the transcribed protocol. Each protocol is correspondent to one or more than one strategy. Please write down the number of the strategy or strategies on the right column. For response that is correspondent to more than one strategy, the order should be arranged according to the priority. If no correspondent strategy can be found from the coding scheme, please write down your description. Thank you.

1. I have a goal when I read.	2. I examine titles and subheadings before reading.
3. I skim the text to get a general idea about the text.	4. I generate question(s) before reading.
5. I try to understand the meaning of each character.	6. I try to understand the meaning of each word.
7. I use radicals to guess the meanings of unknown characters.	8. I try to parse the sentence into meaning units
9. I try to use context clues to interpret words or phrases.	10. I reread sentences or paragraphs when the content is difficult.
11. I paraphrase phrases or sentences.	12. I translate Chinese into my native language.
13. I think in both Chinese and my native language.	14. I make prediction(s) about the text content.
15. I mark the text or take notes when I read.	16. I try to distinguish what is important and what is not.
17. I refer to previous sentences and ideas.	18. I go back and forth in the text to find relations among ideas.
19. I check my understanding.	20. I correct my behavior (e.g., when losing concentration).
21. I change my reading rate when necessary.	22. I try to recognize the text structure.
23. I react to the author's writing style.	24. I use prior knowledge.
25. I formulate question(s) when I read.	26. I speak out or explain ideas to myself when I read.
27. I try to picture or visualize what I read.	28. I seek to external sources (e.g., dictionary, teacher, etc.)
29. I use questions, notes or graphs to guide my reading.	30. I analyze and evaluate the information in the text.
31. I summarize what I read (e.g., write after reading).	

Part II Recall Scoring Scale

Please rate the recall reports according to the scoring scale provided below. The basic unit for scoring is *proposition* (propositions are the most basic relational meaning units in text; e.g., noun-action-noun structures). Ratings for the responses of a subject will aggregate an overall score for reading comprehension for that subject.

Rating (level)	Description
1	Prefactual confabulation: a rating of Level 1 is assigned to responses that depend on isolated words or fragmented phrases and do not show an understanding of the text at a propositional level.
2	Knowledge/detail reading: verbatim or near-verbatim paraphrases of the text (detail retelling), and statements of personal knowledge that are cued by a text proposition (knowledge retelling) but do not show text comprehension.
3	Assimilation: responses that gave explicit evidence of comprehension of the text were scored as Level 3. <i>Note:</i> while level 1 and level 2 comments involve responding to the surface features to the text, level 3 responses provide evidence of a meaning-based representation, such as paraphrases and adding simple elaborations.
4	Problem solving: responses are scored as Level 4 if the subject engaged in problem-solving activities to integrate the text information into his or her existing knowledge structures.
5	Extrapolation: responses are rated as Level 5 if they showed an extension of knowledge beyond what was given in the text and beyond what the subject already knows. <i>Note:</i> While both level 4 and level 5 responses entail problem solving, the source of the problem that is addressed is different: at level 4 the problem is text-based, whereas at level 5 it is situation based.

Note. Symbols used in transcription:

"...": The original text context.

[...]: Subject's verbal report(s).

(...): Researchers' observation, including subjects' nonverbal action.

<...>: Characters or words that subject misread.

?: Subject's pronunciation is not clear.

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