



Metacognitive Knowledge, Vocabulary Size  
and EFL Reading Comprehension of Chinese  
Tertiary Students

# 二语阅读成分分析

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## 基于元认知知识和词汇广度


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李洁 ■ 著



华中科技大学出版社  
<http://www.hustp.com>

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中国·武汉

## 内 容 简 介

本书以中国大学生为研究对象,采用有声思维法、访谈法和问卷法等多数据来源,系统探讨了中国大学生在英语阅读过程中运用元认知知识的特点,并调查了元认知知识、词汇广度和英语阅读能力三者之间的关系。结果表明,非成功阅读者和成功阅读者在阅读策略、目的、兴趣、自我效能和角色等方面均存在差异;学生词汇广度不仅对学生的阅读能力发生显著影响,而且还调节元认知知识对阅读能力的影响。研究为语言阈值假说提供了依据,充实了第二语言阅读理论研究。

本书发展了元认知知识的概念,提出元认知知识不仅包含认知成分,还包含自我效能和目标设定等动机性成分,并据此发展出一个二语阅读元认知知识的编码系统。在方法论方面,本书采用质化和量化相结合的方法,以探索性的质化研究开始,形成问卷,研究方法严谨规范。本书完善了有声思维法在实际运用中的一系列操作性问题,可为同类研究的展开提供参考。本书适合外语教师和应用语言学专业的研究人员和研究生阅读。

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## Preface

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With China's fast economic growth, many people in China need to read at reasonably high levels of English proficiency to further their personal and professional goals and to better their lives. This book aims to explore the reading process of Chinese adult EFL learners and to provide useful information for those who want to improve their English reading abilities. Specifically, this book is intended to explore how the selected Chinese tertiary EFL readers utilize metacognitive knowledge in their academic reading process, to discover the possible differences between successful readers and less successful readers in utilizing metacognitive knowledge in their reading and to map out the relationships among metacognitive knowledge, vocabulary size and EFL reading comprehension ability. This book should be of value to researchers, teachers and graduate students who are interested in second language reading teaching and research.

The study reported in this book consisted of two phases. Phase One was designed to elicit and identify the types of metacognitive knowledge utilized by the Chinese tertiary EFL readers and to capture, if any, the possible differences between successful and less successful readers. Five less successful and five successful Chinese tertiary EFL readers participated in the think-aloud reading task and the interviews in Phase One study. Twenty-nine types of metacognitive knowledge were identified and categorized into nine subcategories under two major categories of person knowledge and strategy knowledge following Flavell's metacognitive framework (1979). Differences between the selected successful and less successful readers were discovered on the motivational and affective characteristics such as reader role, goal of reading, interest and self-efficacy between the two groups. The successful readers were more actively engaged in

reading and provided interpretations of the text on their own authority. They also demonstrated an accurate self-knowledge and higher levels of task-mastery goal and interest toward reading.

Phase Two further explored the relationships among metacognitive knowledge, vocabulary size and EFL reading comprehension through a large-scale survey that based itself on the metacognitive types identified in the first phase and from the existing literature. A total of 548 non-English major sophomores participated in the survey. The instruments included Questionnaire on the Metacognitive Knowledge of EFL reading comprehension, Vocabulary Levels Test (Nation, 1990) and EFL Reading Comprehension Test. The findings revealed that Chinese tertiary EFL readers had a good command of 2,000-word level and approached 3,000-word level. Vocabulary size did not only exert direct influences on EFL reading comprehension ability, but also played a significant moderating role in regulating the effect of metacognitive knowledge on EFL reading comprehension ability. When their vocabulary size reached above the threshold of 3,000 words, metacognitive knowledge played an increasing role in EFL reading comprehension ability.

I am much indebted to many people who have contributed to this piece of work. First of all, I would like to express my heartfelt thanks to my Ph.D. supervisors, Professor Cecilia Chun and Professor Yujing Ni for their constant encouragement, insightful advice, patient listening, enthusiastic emails and delicious meals when I was a research student at the Chinese University of Hong Kong.

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Finally, I dedicate this book to my parents. Their love always encourages me to achieve higher in my academic career.

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## Introduction

The role of reading in our life and education goes uncontested. The vast majority of our education and information has been received in the written form. Reading is the major source of learning and practice for L2 (second language) learners, foreign language learners in particular, due to their limited opportunities to contact the target language. At the tertiary level, readers are expected to read extensively in the L2 for their academic purposes. Comprehending written texts becomes even more conspicuous.

In China, English reading for college courses places high cognitive processing demands on EFL (English as a Foreign Language) learners in terms of its extensive reading amount, complex structures of text materials, wide ranges of topics and differing varieties of tasks and purposes. Students at the tertiary level are equipped with heavy reading loads. Freshmen and sophomores are confronted with extensive reading materials covering a wide range of topics in their English reading courses. Beginning from the third year, students have to read English originals in their own academic fields.

In contrast to the extensive reading workloads facing tertiary EFL learners, reading has not been given sufficient attention in either research or teaching practice in China. As a research topic, reading seems to become “Cinderella” among the four basic language skills (listening, speaking, reading and writing). Reading research in the Chinese EFL context is quite disproportionate with its large number of EFL learners (Zhang, 2010). In pedagogical practice, teachers seem not value reading as highly as the other three language skills. The invisibility of reading comprehension process makes it hard for teachers to monitor their students’ reading process and evaluate their

end products compared with that of writing. Moreover, many teachers hold the belief that their students who can get higher marks in reading have fewer problems in reading as compared to listening, speaking and writing.

Different from the scarce research in China, reading research abounds in the west. Starting from the experimental psychology, reading research focuses on either the reading processes or the comprehension products. Three process models including bottom-up, top-down and interactive models have been applied to both L1 (first language) and L2 reading. The multiple-component models have identified a series of variables ranging from word decoding, linguistic knowledge to metacognitive knowledge. The transfer of L1 literacy into L2 reading comprehension has been recognized as one of the distinctive features of L2 reading. Vocabulary knowledge contributes significantly to L2 reading comprehension. At the same time, there still remains areas to be further explored such as comprehension strategies, motivation and interest (Bernhardt, 2005).

This book aims to fill this knowledge gap. The study reported in this book identifies two variables — metacognitive knowledge and vocabulary size to denote L1 literacy and L2 language knowledge respectively for a better understanding of EFL reading comprehension. The study sets out to investigate, in the Chinese EFL context, how metacognitive knowledge affects Chinese tertiary EFL learners' academic reading. It also seeks to understand the relationships among metacognitive knowledge, vocabulary size and EFL reading comprehension.

The purpose of this study is twofold. First, the study is intended to understand the types of metacognitive knowledge utilized by the Chinese tertiary EFL readers in reading English academic texts. It also aims at identifying differences between the selected successful and less successful L2 readers in utilizing metacognitive knowledge in their reading. Second, the study explores the relationships among metacognitive knowledge, vocabulary size and EFL reading comprehension.

The following research questions were formulated in the present study.

1. What types of metacognitive knowledge do the selected Chinese tertiary EFL readers use when they read English academic texts?
2. Do the successful and less successful Chinese tertiary EFL readers

selected for this study differ in their use of metacognitive knowledge when they read English academic texts?

3. What is the vocabulary size of the Chinese tertiary EFL readers?
4. How does vocabulary size contribute to EFL reading comprehension for the Chinese tertiary EFL readers?
5. How does metacognitive knowledge contribute to EFL reading comprehension for the Chinese tertiary EFL readers?

The present study is the first of its kind to explore the relationships among metacognitive knowledge, vocabulary size and L2 reading comprehension for the Chinese tertiary EFL readers. The research data gathered will provide a foundation for other studies that are interested in investigating L2 reading. So far little research has touched upon the motivational and affective characteristics of metacognitive knowledge. The clarification of the concept may help clarify the relationship between literacy and language. The study, situated in the Chinese EFL context, will contribute to the international literature and theory-building on metacognition and L2 reading comprehension.

At a more practical level, the research findings will inform the practitioners of how the Chinese EFL readers utilize metacognitive knowledge to read English academic texts, in particular, how motivational aspects of metacognitive knowledge might lead to different reading efficiency. It will also provide valuable information on the vocabulary size of Chinese tertiary EFL readers and how to improve students' vocabulary knowledge in both knowledge and skill dimensions. The understanding of the relationships among metacognitive knowledge, vocabulary size and EFL reading comprehension will provide reliable guides for teachers on how they should address the metacognitive and vocabulary aspects in their reading instruction.

### Structure of the book

This book includes seven chapters. Chapter 1 sets a scene for the present study by a brief introduction to the background, purpose and significance of the study. Chapter 2 presents the theories of reading in both L1 and L2 reading and elaborates on the theoretical framework of the present study. Chapter 3 furnishes a review of the literature and empirical work on metacognitive

knowledge, vocabulary size and L2 reading comprehension. Chapter 4 describes the pilot study and research scope of the main study. Chapter 5 presents the results on how the selected Chinese tertiary EFL readers utilize metacognitive knowledge in the think-aloud task and discusses the differences between the successful and the less successful readers. Chapter 6 presents the results on the relationships among metacognitive knowledge, vocabulary size and EFL reading comprehension from a large-scale survey. Finally, the last chapter, Chapter 7 summarizes the present study, offers suggestions for the future research and touches upon the limitations.

## Theories of Reading

The interest of reading research has been brought about largely by cognitive psychologists since the 1960s. Over the past three decades, researchers conducted research on reading mainly through overt physical manifestation of the reading process such as eye movements and eye fixations or by examining the comprehension products such as verbal recalls and comprehension test results. As such, reading research can be classified into two categories: process models and product/componential models (Urquhart & Weir, 1998).

L2 reading research has been largely influenced by the studies conducted in L1 reading research since the 1970s. After 20 years' exploration, researchers gradually realize that the variables involved in L2 reading are far more complicated than that in L1 reading. Text-based features such as word knowledge and conceptual features such as affect and interest still remain areas of investigation (Bernhardt, 2005).

This chapter aims to review the major theories of reading in both L1 and L2 reading. Two perspectives including process and product approaches are discussed respectively. For each approach theories pertaining to L1 reading are presented first, followed by L2 reading research. Strengths and weaknesses of these approaches have been analyzed. The chapter ends up with a theorizing on the present research and puts forward the components to be included in the theoretical framework of the present research.

### 2.1 Process models

Process models focus on the actual process of reading. This approach



mainly employs experimental techniques such as eye-movement studies and computer on-line studies to uncover the psychological process of reading. This type of models captures how words are decoded, when the syntactic parsing begins, etc (Urquhart & Weir, 1998). Due to the differing historical contexts and knowledge base on which the models were developed and changes of the variables involved in the experiments, conceptualizations and components of these models may address different aspects of the reading process (Samuels & Kamil, 1988). In general, three types of reading process models have been advanced in both L1 and L2 reading. First came the bottom-up models (Gough, 1972; Rayner & Pollatsek, 1989) and then the top-down models (Goodman, 1967; Smith, 1971), which were replaced by the interactive models at a later stage (Rumelhart, 1977; Stanovich, 1980).

### 2.1.1 Process models of L1 reading

Bottom-up models, also known as text-driven or data-driven models, start with the smallest text unit, either letters or letter features. A bottom-up model conceptualizes reading primarily as a decoding of the text by the reader (Macaro, 2003). This implies that the meaning of the text is entirely driven by the writer and the reader accesses the meaning merely through the decoding of the text. Typical of such an approach is Gough's model (1972) which claims that the reading process starts with eye fixation on a point in the printed material. This sets up a sequence of activities involving the visual system, the phonological system, the meaning system, the memory system and the vocal system. The sequence of processing starts from the smallest individual linguistic units, letters, to words and finally to the largest unit, sentence in a serial manner. It views reading process as a series of stages, each of which is completed before the next stage begins.

Gough's model, though explicit to be tested at various points, invokes some debates. First, there is doubt about the serial nature at the word-recognition stage. The experiments have shown that words can be recognized more quickly than individual letters (Rayner & Pollatsek, 1989). It appears that letters are processed in parallel rather than serial at the word-recognition stage. Second, if the sequential nature of the model determines that all the words in a sentence