Components of L2 Reading

Linguistic and processing factors in the reading test performances of Japanese EFL Learners

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For my parents, Masato and Kiyoko Shiotsu

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Series Editors' note

Compared to the extensive research base on L1 reading available in cognitive psychology, L2 reading research in the Applied Linguistics field has lacked a solid empirical research base and as a result the predictability of L2 reading behaviour is seriously constrained. A more principled effort is needed to generate empirical evidence on the nature of L2 reading which draws on the rigorous investigation of the factors considered by cognitive psychologists to be significant for L1 reading comprehension.

This volume helps to establish such a research tradition. It makes good use of the methodology established in cognitively oriented L1 research and investigates whether those factors considered to influence reading comprehension skills among L1 readers do so among L2 readers. In the componential approach to modelling L1 reading ability a number of contributory factors have been empirically validated. However, research on their relative contribution either singly or in combination to explaining performance on second language reading tests is limited.

It emerges from Shiotsu's thorough overview of the L1 component skills literature that such variables as vocabulary knowledge, word recognition efficiency, phonological awareness, and working memory span account for a relatively larger amount of the variance in reading comprehension than do the others. Shiotsu investigates the contribution of these variables in L2 reading through theoretical and empirical scrutiny. In addition he looks at the importance of the L2-specific variable of grammar knowledge, whose relationship with L2 reading seems to merit more attention than it has been given so far in the reading research literature.

In Chapter 2 Shiotsu examines how reading has been researched and understood and details some of the knowledge and processing subskills which have been demonstrated to be important for reading abilities. The research questions below emerge from this review in relation to the Japanese context the author is working in:

RQ1: To what extent do the linguistic knowledge areas and psycholinguistic and cognitive subskills – L2 vocabulary breadth, L2 word recognition efficiency, L2 working memory span, L2 syntactic knowledge, and language-independent metacognitive knowledge about the text and reading – account for the individual differences in L2 careful passage reading comprehension ability of Japanese EFL learners?

RQ2:   Are there any differences in the extent to which the linguistic knowledge areas and psycholinguistic and cognitive skills (listed in Q1) account for the individual differences in L2 careful passage reading comprehension ability of the Japanese EFL learners as a function of L2 reading ability level, e.g. between 'higher ability' and 'lower ability' subgroups of readers?

RQ3:   To what extent do the linguistic knowledge areas and psycholinguistic and cognitive subskills (listed in Q1) account for the individual differences in computer-based L2 sentence reading speed of Japanese EFL learners?

RQ4:   Are there any differences in the extent to which the linguistic knowledge areas and psycholinguistic and cognitive skills (listed in Q1) account for the individual differences in computer-based L2 sentence reading speed of Japanese EFL learners as a function of L2 reading ability level, e.g. between 'higher ability' and 'lower ability' subgroups of readers?

Chapter 3 considers the research methodology with an emphasis on the practicality and feasibility of the research variables and their instrumentation.

Chapters 4 and 5 describe a total of six preliminary studies which are used to assess the potential values of the initially selected variables for the subsequent main study and to evaluate the instruments and their content to make necessary refinements.

Chapter 6 reports on the nature of the main study providing detailed background and basic descriptive data. Chapters 7 and 8 report the main findings based on two different methods of analysis. A traditional method of analysis, conventional regression, is used to answer the research questions in Chapter 7, but in Chapter 8 Structural Equation Modelling is used to help consider the data from a slightly different perspective.

In Chapter 9 the research questions are revisited and the findings are discussed with reference to the existing research base reported in the literature review; the implications of the findings are critically evaluated, and recommendations for future research are made.

In contrast with previous findings in the literature in this field, this study offers support for the relative superiority of syntactic knowledge over vocabulary knowledge in predicting text reading comprehension test performance.

The volume offers the reader a valuable perspective on L2 reading ability, test score predictability, the potential effects of unequal instrument reliabilities in this research area, and test content validation. It provides rigorous empirical support for a number of the themes emerging from an earlier volume in the series – *Examining Reading* by Khalifa and Weir (2009). In particular it provides evidence for the view that linguistic comprehension is

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best divided into careful text processing ability and the speed of comprehen-
sion. It makes a valuable contribution to the methodology of using test data
to enhance our knowledge of reading proficiency. As such it testifies to the
centrality of language testing for developing our understanding of language
proficiency and offers serious lessons to second language acquisition (SLA)
researchers in the rigorous use of complex statistical procedures.

Cyril J Weir and Michael Milanovic
Cambridge – November 2009

Abbreviations

AGFI	adjusted goodness-of-fit index
AMOS	Analysis of Moment Structures
ANOVA	analysis of variance
AWL	Academic Word List
CALL	computer-assisted language learning
CAT	computer-adaptive test/ing
CB	computer-based
CBT	computer-based test
CFA	confirmatory factor analysis
CFI	comparative fit index
CLA	Communicative Language Ability
COPS	Clustered Objective Probability Scoring
df	degree of freedom
DSL	Dutch as a second language
EAP	English for academic purposes
EFA	exploratory factor analysis
EFL	English as a foreign language
ELT	English language teaching
ESL	English as a second language
ETS	Educational Testing Service
FCE	First Certificate in English
GFI	goodness-of-fit index
IELTS	International English Language Testing System
L1	native language
L2	second language
LCD	liquid crystal display
Max	maximum
MC	multiple choice
MCQ	multiple-choice question
Min	minimum
MS	mean square
msec	millisecond
NFI	Bentler-Bonnet normed fit index
NS	native speaker
PB	paper-based
PBT	paper-based test

Abbreviations

PCA   principal component analysis
RMSEA   root mean square error of approximation
RST   Reading Span Test
SA   short answer
SAQ   short-answer question
SD   standard deviation
SE   standard error
SEM   structural equation modelling
SFL   Spanish as a foreign language
SLA   second language acquisition
SPSS   Statistical Package for Social Sciences
SS   sum of squares
TEEP   Test of English for Educational Purposes
TOEFL   Test of English as a Foreign Language
VLT   Vocabulary Levels Test