Inhibition or compensation: the role of lower- level processing in FL reading and incidental vocabulary learning?

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Abstract

This presentation outlines a research design to investigate the two competing hypotheses: whether inefficiency word processing and small working memory capacity (WMC) inhibit text comprehension and incidental vocabulary learning in FL reading or whether readers could use mechanisms (metacognitive strategies) to compensate so that text comprehension and incidental vocabulary learning are not influenced much with Chinese EFL learners. Verbal efficiency theory suggests that inefficiency in lower-level processing inhibits text comprehension; and efficient lower-level processing frees up readers' WM so that attention can be directed to the new lexical items, leading to superior learning of new words. Compensatory encoding-model (C-EM) maintains that readers with inefficient word processing and low WMC are constantly involved in applying mechanisms in reading when no time constraint is imposed on them to achieve good comprehension by simply spending more time on reading. Whether using mechanism could compensate so that incidental vocabulary learning achieves similar level or even better as a result of deeper processing of new lexical items needs to be tested empirically. The proposed research collects both quantitative (the products of text comprehension and vocabulary learning) and qualitative data (strategy use). The study contributes to the fields of FL reading and incidental vocabulary learning.

Key Words

Lower-level processing, FL reading comprehension, incidental vocabulary learning

1 Summary of the Research

The primary goal of reading is to obtain some information from a text, such as to comprehend for general meaning as well as to learn something from texts (Grabe & Stroller, 2002). When the readers construct a mental representation of meaning of a text, they are at the same time able to obtain additional language features the text is encoded, such as to gain knowledge of grammatical structures or to learn new words incidentally (Lesser, 2007). Performance at complex tasks, such as foreign language reading and incidental vocabulary while reading, is characterized by coordination of multiple levels of sub-component processes. When considering the above activities in a FL, the picture of the interactions of the processes is even more complex. On the one side of the coin, some researchers claim that inefficient subcomponents impair performance by drawing away cognitive resources to make up inefficiencies (inhibition) (i.e. Perfetti, 1985; Haynes & Carr, 1990; Hamada & Koda, 2010). On the other side of the coin, a group of researchers maintain that one can mitigate the effects of inefficient subcomponents and lack of cognitive resources in ways that do not interfere with performance by using effective mechanism (metacogntive strategies) (i.e. Walczky, 2000). The research intends to test two

competing hypotheses: whether slow word processing and WMC inhibits FL learners' reading comprehension and incidental vocabulary learning while reading; or whether FL learners are able to employ strategies to compensate for the inefficiency word processing and small WMC when time constraint is not imposed on them so that reading comprehension and incidental vocabulary learning are not disrupted. In order to achieve this overall aim, the research is comprised of two sub-studies with Chinese EFL learners: a quantitative sub-study and a qualitative sub-study. For the quantitative sub-study, the emphasis is on the products of whether reading comprehension and incidental vocabulary learning while reading is inhibited. Approximately 160 Chinese EFL will be recruited, their English word processing and WMC will be measured, and they will be asked to perform two reading tasks and two incidental vocabulary learning tasks under either time pressure condition or no time pressure condition. The focus of the qualitative sub-study is to examine what and how FL readers do to compensate for slow word processing and small WMC, and to solve language problems (new lexical items) during reading texts for comprehension when no time pressure is added on. Around 30 participants will be invited to think-aloud during reading, and the information of their English word processing and English working memory capacity will also be collected. Both sub-studies are cross-sectional; the quantitative data will be entered into SPSS to perform descriptive and inferential analyses; the qualitative data will be first coded; and the coded data will be also used to perform descriptive and inferential analyses. The findings of the proposed research will contribute to the fields of both FL reading and FL incidental vocabulary learning while reading theoretically and pedagogically. From the perspective of theory, the quantitative sub-study will empirically test whether time pressure is a factor influencing the role of word processing and WMC in FL reading. This has been tested in a few studies in first language reading, but has not been tested with FL readers. Second of all, the study will also provide empirical data for the role of word processing and WMC in incidental vocabulary learning while reading in FL, which is a very little researched area. The qualitative sub-study will examine compensatory mechanism in a more detailed way than that has been done in the only study in FL reading (Stevenson, 2005). It intends to distinguish between compensation for processing problems and compensation for language problems, which have not been clearly distinguished in the literature of C-EM.

2 Research Questions

The research addresses the following questions and hypotheses in the two sub-studies:

In the quantitative sub-study, the research questions are:

1a. What is the relationship between lexical access and text comprehension under time pressure and no-time pressure in FL reading?

1b. What is the relationship between WMC and text comprehension under time pressure and no-time pressure in FL reading?

2a. What is the relationship between lexical access and incidental vocabulary learning (intake, mapping between form and meaning, mapping between form and part of speech) under time pressure and under no-time pressure FL reading?

2a. What is the relationship between WMC incidental vocabulary learning (intake, mapping between form and meaning, mapping between form and part of speech) under time pressure and under no-time pressure FL reading?

In the qualitative sub-study, the research questions are:

3. What strategies do learners use to solve processing problems and to solve unknown lexical problems (lexical inferencing strategies)?

4a. What is the relationship between lexical access and use of strategies (solve processing problems & lexical inferencing strategies) in FL reading?

4b. What is the relationship between WMC and use of strategies (solve processing problems & lexical inferencing strategies) in FL reading?

5. What is the relationship between use of strategies (solve processing problems & lexical inferencing strategies) and text comprehension in FL reading?
6. What is the relationship between use of strategies (solve processing problems & lexical inferencing strategies) and incidental vocabulary learning in FL reading?

3 Setting and Participants

The study will be conducted in Xi'an University of Technology, one of the provincial universities in Shaanxi Province, China. The study intends to recruit approximately 160 second-year Chinese university EFL learners to voluntarily participate in the quantitative part of the study. Another 30 students will also be recruited for the qualitative part of the study, in which a think-aloud protocol will be used to collect details of learners' use of strategies. The recruitment of students will focus on non-English majors since English majors are not be able to fully represent the characteristics of the vast majority Chinese EFL learners due to their innate interests in English language, more proficient in lower-level processing of written English, and possibly more strategic in terms of application of a variety of reading strategies. The ages of the participants will range from 18 to 21, with 19 years old is the typical age for a second year university student in China. The average period of English instruction received by these learners are 7 years (6 years in secondary school and 1 year in university).

4 Pedagogical Implications

Reading is considered to be as both an important skill as well as important source of language input for EFL learners. Although some previous intervention research focus on training of lower-level processing in order to enhance FL reading comprehension, the study will shed some light on whether lower-level processing could facilitate FL vocabulary development as a by-product of reading in FL reading. Furthermore, the results of the study may provide some implications to the standardized testing in FL reading. It will offer answer to whether time-restricted reading assessments may underestimate some students' reading proficiency since it limits their opportunity to apply compensatory mechanisms during reading.

5 References

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