

Difference in Reading Processes between Gifted English Language Learners and General Middle School Learners in English Text Reading

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Abstract—This study examined the difference in reading processes which gifted English language learners (GELLS) and general middle school learners (GMSLs) used while they read English texts. 3 GELLS and 3 GMSLs attended the study, taking English reading test and participating in in-depth interviews and observations, and reflection papers. As a result of the study, it was found that there were similarities and differences in reading processes between GELLS and GMSLs. First, GELLS tended to use more information like affixes, additional information, other sentences, and their background knowledge to infer the meaning of the unknown words than GMSLs. Second, while GELLS did not have difficulties processing syntactic components, GMSLs had difficulties dealing with syntactic components, attempting to find subjects, verbs and conjunctions to process sentences. Finally, while GELLS could construct the meaning from beginning of the sentences to the end of the sentences sequentially without any difficulties, GMSLs had difficulties constructing the meanings of the sentences because they had problems with finding subjects, verbs and conjunctions, not recognizing the sentence structures, and the lack of vocabulary size.

Research Keywords—English Reading, Gifted Education, Gifted English Language Learner, Reading Processes.

1 INTRODUCTION

Reading is a complex process that integrates various components [1], [2]. Readers involve in multiple processes, which range from recognizing each word of a text to reconstructing its meaning. In order to explore the complicated reading processes, many studies have been conducted based on their different models like top-down, bottom-up, and interactive models.

Some studies have explored how lower-level reading processes impact L2 reading comprehension. Despite of inconsistent results, it was generally accepted that the lower-level reading processes contributed significantly to reading comprehension. Others have been conducted regarding the differences in the reading processes depending on learners' level [3], [4]. Fluent readers process L2 reading

rapidly and automatically because they had enough knowledge about L2 vocabulary and grammar compared to less fluent readers.

However, few studies have been carried out to investigate reading processes comparing gifted English language learners (GELLS) and general English language learners (GMSLs). This study examined the difference of reading processes between GELLS and GMSLs with the research question: What are the differences in reading processes between GELLS and GMSLs?

2 READING PROCESSES

In order to understand the complicated reading processes, a number of perspectives of reading processes were suggested to be categorized roughly into three prominent models of reading: bottom-up, top-down, and interactive models [5], [6], [7]. It was suggested that while bottom-up and top-down processes include hierarchical stages through which reading proceeds, bottom-up processes ignored the

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significant role of higher-level processes. Also, the questions as to the abilities of the top-down models to explain reading processes of fluent readers have been raised because formulating a hypothesis about an emerging words must take longer time necessary for simple visual word recognition [8]. Interactive models compensated for the deficiencies of the bottom-up and top-down models. According to Garabé [9] the model was consistent with bottom-up process being integrated with top-down processes. Unlike the top-down and the bottom-up models, each stage of reading processes does not necessarily flow in a serial manner, but can interact at the same time. Also, lower- and higher-level processes are considered essential or adequate reading comprehension.

Numerous information which reader obtained from the text is processed through lower- and higher-level processes. The lower-level of reading processes include word recognition, syntactic processing and semantic proposition encoding. The higher-level of reading processes consist of text model of comprehension, situation model of reader interpretation, background knowledge use and inferencing, and executive control processes were presented [2].

The studies of the impact of the lower-level reading processes to L2 reading comprehension and the differences in reading processes between two different level readers. Some studies explored how lower-level reading processes contribute to reading comprehension. Haynes and Carr revealed that lexical semantic access efficiency was the best predictor of passage reading speed [10]. In a similar study, Shiotsu found that efficiency in accessing meaning had explanatory power in L2 reading comprehension ability when word decoding efficiency was partialled out [11]. In Korean context, Kang et al. revealed that decoding ability was a better predictor of text reading ability than listening ability, examining the relation between L2 decoding and listening comprehension skills to L2 reading comprehension [12].

Others have explored how differently skilled and less skilled readers process texts. In the study of relation between phonological, orthographic, syntactic processing and vocabulary and L2 reading comprehension, Nassaji found that phonological, orthographic, syntactic processing, and vocabulary were correlated at least moderately with reading comprehension [13]. In a study of Japanese EFL students at the university level, Nishida found that the advanced readers were capable of conducting the lower level of reading processes automatically [4].

On the other hand, the intermediate readers could not and had difficulties interpreting the sentences. In the study of Korean EFL proficient and less-proficient readers' awareness and experiences, Chin revealed that the proficient EFL readers used strategies more effectively and were better able to provide satisfactory solutions than their counterparts [3].

Through these studies, it was suggested that lower-level reading processes contributed to reading comprehension and that proficient readers process vocabulary, syntactic components and meaning proposition automatically and rapidly. Most of the studies focused on the reading processes of general readers. However, few studies have explored the differences of GELs and GMSLs while reading English reading materials.

3 RESEARCH METHODOLOGY

3.1 Participant

3 GELs and 3 GMSLs participated in this study. The GELs are being enrolled in gifted English language program in A city. They were selected through a special exam which the office of education in A city developed to screen for GELs every year. The GMSLs were chosen from one of the middle schools in A city because all GELs were middle schools in A city.

Table 1. Personal information

	GELs			GMSLs		
Age	15	15	15	15	15	14
Gender	F	M	F	F	F	M
Period of Study Eng. (yrs.)	8	10	8	8	7	6
Eng. study (hrs.)	4	4	4	2	2	1

3.2 Data analysis

In order to collect data about the GELs' and the GMSLs' reading processes, two following steps were taken. First, the participants took an English reading test for 50 minutes. Second, they were asked questions regarding difficulties and reading processes related to word processes, syntactic processes, and meaning construction which they used while they read English texts. In order to analyze the data, the interview data were transcribed. Second, the transcript was examined and segments pertaining to the research questions were grouped and coded. Finally, the relationships between codes were examined, and some categories amalgamated. A category is a conceptual unit formed by grouping

several related codes like word processing, syntactic processing, and meaning construction.

4 FINDINGS

4.1 Word processing

The similarities and the differences of GELLs' and GMSLs' reading processes were found. First, both learners used the affixes of the unknown words to derive meaning. When encountering the word, "pre-emptive," they inferred the meaning of the word, by using a prefix, "pre-" and a context. They knew that the prefix, "pre-" meant "in advanced." They assumed that "pre-emptive" meant "done an unwanted act in advanced." Also, they used the words which they already knew to draw the meaning of the unknown words. For instance, they did not know the meaning of the word, "plant" of "plant equipment". However, they could get the meaning of the word, "plant" by using the meaning of the word, "plant" of "power plant," which they already knew. They finally inferred the meaning of "plant" as "a factory" or "a facility."

GELLs tended to use more various information to understand the meanings of the unknown words than GMSLs. For instance, when one of the GELLs encountered the sentence including unknown words, she went back to the first part of the sentence including the unknown words to make sense of the sentence. Then, she jumped into the first sentence of the paragraph if she could not figure out the sentence. If not, she repeatedly read the sentences around the sentences including the unknown words until she could make sense of them because she believed that she could infer the meaning by reading the parts again and again.

As for higher-level reading processes, two learners derived the meaning of unknown words in different manners. GELLs tended to use their background knowledge to infer the meaning using a variety of information related to the content of texts. For example, one of the GELLs did not know the meaning of "ample." She attempted to infer the meaning, "supplement" or "complement" because she has heard the word "ample" from one of the cosmetic brands, "ample light," which her mother used. Meanwhile, GMSLs, at first, make several attempts to draw the meaning of "ample," they finally gave up inferring the meaning.

4.2 Syntactic processing

When facing the sentences which they could not understand, GELLs did not analyse the sentences by using slash or other marks.

He said / the economy is expected to achieve its potential growth rate of 5 percent this year / despite the won's appreciation against the dollar and high oil prices.

When encountering above the sentence, GELLs did not chunk the sentences. They did even not mark the subjects and the verbs and the prepositions. They interpreted the sentence with three parts, "He said," "the economy ~ this year," "despite ~ pricess" sequentially.

Meanwhile, GMSLs divided the sentences based on phrases or clauses. Also, they attempted to find subject, verbs, and conjunctions when encountering the sentences at first. One of the GMSLs chunked the sentence into 7 parts,

He said / the economy is expected / to achieve its potential growth rate / of 5 percent this year / despite the won's appreciation / against the dollar / and high oil prices."

They attempted to find the subjects and the verbs. While they recognized that the subjects were "he," they had difficulties finding the subject, "the economy" in the subordinate clause because there was no a conjunction, "that," between "said" and "the economy." They had difficulties processing the adverbial phrase, "this year," because they did not put any slash right before the the phrase, "this year." Finally, they had difficulties processing prepositional phrase, "despite ~ high oil prices" because they could not deal with the prepositions "despite" and "against," and had many unknown words.

GELLs tended to use more various strategies for the syntactic parsing than GMSLs. The formers assumed that the pronoun "its," referred to the Bank of Korea because the subject of the sentence was "the Bank of Korea." The pronoun of the sentence tended to refer to the subject of the previous sentence, she thought. In contrast, GMSLs failed to recognize the antecedent of the pronoun, "its" because one of the GMSLs just attempted to find the antecedent within the sentence.

4.3 Meaning processing

There were significant differences of constructing meaning between GELLs and GMSLs. GELLs interpreted the sentences from the beginning of the sentence to the end of the sentence sequentially. The unknown words did not contribute to understanding the whole sentence.

In December, the bank hikes inter-bank borrowing rate to 3.75 percent in a pre-emptive measure to prevent economy recovery from inflation, and froze the rate the follow month.

GELs could interpret the whole sentence even though they had two unknown words, “pre-emptive measure,” and “stalking.” Also, they interpret the sentence by dividing 4 parts, “In December,” “the bank ~ measure,” “to prevent ~ inflation,” and “and froze ~ month.” They attempted to interpret the sentence from “In December,” followed by “the bank ~ measure,” by “to prevent ~ inflation,” and “and froze ~ month” in sequential manners. Further, after understanding the meaning of the sentence, they continued to check whether they were right or not. If they were wrong, they tried to have the meaning of the sentences, using another strategies. At first, they re-read the whole paragraph including the sentences which they could not understand before. Sometimes, they repeatedly read the part of the sentence, “the bank hikes inter-bank borrowing rate to 3.75 percent in a pre-emptive measure”, which they could not understand. They tried to connect the meaning of the previous sentence to the sentences which they could not figure out. They attempted to use the graph in the paragraph to understand sentences which they could not comprehend.

However, GMSLs failed to interpret the sentences due to many reasons. First, they had difficulties chunking the sentence. They just put the slashes in right after “In December,” right before “in” and “to prevent” and “from,” and “and.” Also, they had many difficulties finding the verbs “hikes” and “froze.” Even though they attempted to interpret the beginning of the sentences, they often interpreted to-infinitive clause. If they failed to interpret it, they went to “and ~ month.” After attempting to interpret several parts, they finally gave up interpreting the sentence. The final reason was that they had many unknown words such as “hike,” “inter-borrowing rate,” “pre-emptive measure,” “froze,” and “rate.”

5 CONCLUSIONS

This study explored the differences in reading processes which GELs and GMSLs used while reading English texts. Both readers process unknown words, syntactic components and meaning construction in similar or different ways. First, both groups of readers process unknown words, by using affixes of the unknown words and the meaning of the words which they already knew. However, GELs tended

to use more strategies than GMSL to figure out the meaning of unknown words. The formers tended to use sentences around the sentence including the unknown words, and supplementary information like tables or graphs to infer the meaning of the unknown words. While GELs used their background knowledge, GMSLs almost never used their background knowledge.

There were significant differences of processing syntactic components. GELs processed syntactic components rapidly and automatically because they had enough knowledge about syntactic information. Although they did not separate the sentences in chunks, they recognized syntactic components. On the other hand, GMSLs did have difficulties recognizing the syntactic components. Thus, they separated the sentence into chunks by using circles, slashes or parentheses. Also, they attempted to find the subjects and the verbs in the sentences, and the conjunctions. When they failed to find them, they had difficulties processing the sentences.

Finally, GELs constructed the meanings of the sentences from the beginning of the sentence to the end sequentially. Sometimes, although they did not interpret the meaning of the unknown words, they did not have any problems with understanding the meaning of the whole sentences. In contrast, GMSLs had difficulties having the meaning of the sentences because they could not find the subjects and the verbs. Also, they interpreted the sentences without sequences like GELs because they could not recognize subjects and verbs and conjunction in the sentences. Finally, they gave up figuring out the meaning of the sentences.

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