Schema Development Process of an EFL Reader in a US University: A Case Study

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ABSTRACT

Reading is one of the basic skills, yet, mostly, learners engage in it individually. Previous research has shown there is an association between the native language (L1) and the second language (L2) reading; however, little research has been done within a qualitative framework on how L2 readers construct or develop their schemata in order to comprehend L2 texts. This article aims at describing how L1 reading habits influenced L2 reading of a non-native speaker of English as an English as a foreign language (EFL) reader, and how she developed her reading strategies and built up formal and content schemata in order to interpret L2 academic texts effectively. To understand the phenomena, an open-ended questionnaire, face-to-face interviews, observation and the participant's reading log were used for data collection. The findings revealed that the participant's L1 literacy training helped her tackle terminology problems but made it difficult for her to read to meet the requirements of her American university. Reading strategies that promoted her schema construction played a key role in enhancing her reading effectiveness.

Key words: reading, qualitative research, L1 and L2 reading association, schema

INTRODUCTION

Reading is a challenging area of study. It is an internal process so it is difficult for researchers to observe it directly, and it is not easy for readers themselves to describe it. Up to the present, researchers have attempted to explain phenomena in the second language reading processing such as relevance of L1 reading to L2 reading, short-circuit hypothesis, development of L2 reading with regard to orthographic sensitivity and decoding skills, and L2 reading anxiety. One intriguing issue in previous research (Barlette, 1932; Rumelhart, 1980; Carrell, 1983; Carrell and Eisterhold, 1988; Parry, 1996) has been the schema theory, and this is the focus of the present study.

This study aims at providing an emic view of schema development in a non-native reader of English and her reading strategies. It includes a description of differences in her L1 reading and L2 reading in different educational settings, her difficulties in L2 reading, and her development of reading strategies that enhanced the improvement of her reading of texts. The use of the qualitative research study can supplement survey-based research, and it is worthwhile to study the issue of the schema development process of an EFL reader in a US university through a participant's reflection on her English reading strategies. In this study, the researcher attempts to answer the following research questions:

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1. Are there differences in the reading strategies used by the participant, a non-native speaker of English, in her L1 and L2 educational settings?

2. How do the differences impact the participant's L2 reading?

3. What are the strategies the participant used in order to cope with such differences?

METHODOLOGY

The researcher selected qualitative methodology in conducting this study for two reasons. First, the researcher wanted to understand the reading process of the participant as she herself described it instead of guiding her responses through a controlled, rigidly structured questionnaire or manipulating her in a laboratory-like experiment. The researcher regarded the participant as a unique individual with her historical knowledge (Haraway, 1995). She had no intention to generalize the study across time and population. The qualitative methodology enabled the researcher to interact with the participant for in depth and thick data through interviews and observation after having gathered some background information at the start of the study. Second, since, up to the present, most research on reading has been conducted using quantitative methodology, this study with its qualitative research design would provide the existing body knowledge of ESL reading with a new perspective of viewing the significance of schema for reading success and the strategies readers might employ in order to construct schema for their reading comprehension.

Participant

The participant was an international third-year female doctoral student in a university in the northeastern United States. She had earned a bachelor's degree in English literature in her native country, and during the course of this study,

she had been in the United States for over four years.

DATA COLLECTON AND ANALYSIS

The researcher gained access to the participant, her classmate, on a voluntary basis. The collection of data lasted for seven weeks starting from background information on the number of years she had studied English in her country, length of her stay in the United States, and differences between her native language and English. This data enabled the researcher to get to know the participant and narrow her focus.

With the data, the researcher constructed semi-interview questions, the design of which allowed the participant to provide data that might not have been included in the researcher's plan but that was valuable for in-depth understanding. The researcher audio-taped the interviews with the participant's consent and selectively transcribed them. She read and reread the interview transcripts to gain understanding and to examine the emerging themes. The process of data collection and analysis performed at the same time allowed the researcher to adjust her tentative study goal because her analysis of the data revealed more interesting issues.

Parallel with the data from interviews, the researcher obtained another set of data from the participant's reading log, in which she recorded her reading behavior on a weekly basis. The log included both her reading for class assignments and for preparation for her comprehensive examination.

The researcher also observed the participant when reading aloud and reading silently. She asked the participant to recall what she read immediately after her reading. The prompt recall could elicit fresh data and provide the researcher with understandings of the participant's interaction with the texts, with the subject matters that were and were not familiar to

her, and the amount of information she could obtain from the readings. While she was reading, the researcher took notes, and audio-taped her when she was recalling the information. In addition to observing her reading aloud and reading silently, the researcher also examined the texts she read for class to see if she had underlined parts of the text or had written notes, glosses, or comments in the margins. Occasionally, the researcher used e-mail to communicate with her for clarifications of some issues after reading her fieldnotes and interview transcripts.

All the data were analyzed and categorized through a coding process. The researcher selected emerging themes for further study. The participant's descriptions and explanations were interpreted and contextualized. The presentation of data is as follows.

PRESENTATION OF DATA

This section presents the data from an interpretivist perspective, with the aim to gain understanding of the participant's L2 reading process. The researcher addresses the problems and the strategies that the participant used in her L2 reading comprehension with her comments.

Differences in the reading strategies of English in L1 and L2 educational settings

Data from the interviews and observation revealed that the research participant used, in her L1 academic reading, the bottom-up strategy, the strategy that readers decode meaning of the text at the linguistic or word level. The participant informed that the bottom-up reading procedure enabled her to memorize details of the content and become a successful learner in her country. In the academic setting in the United States, the participant contended that she still used the same strategy during her M.A. study. However, later, she found it inadequate to cope with reading challenges.

"Though reading for details helped me learn new terms and concepts, the researcher could not clearly patch each piece of jigsaw to form the big picture. That prevented me from thinking critically about issues in focus, leading me to frustrations in class discussions since the researcher couldn't participate with her classmates."

With the awareness of being unsuccessful in L2 academic setting, the participant searched for a new strategy that would facilitate her to gain understandings holistically. For this reason, she tried the strategy she had used for L1 reading for pleasure, the top-down strategy, which enables readers to make general predictions based on the schema and their expectations. The participant found that she read more effectively than before. She used the bottom-up strategy when encountering new concepts and the top-down when wanting to reach the overall ideas. Also reported was the use of both strategies at the same time. According to the participant's words,

"The more the researcher read, the more skillful the researcher became. the researcher think the researcher automatically switch to the reading strategy that works for me."

The account shows that there were differences in the participant's L1 and L2 reading strategies in academic settings.

Impact of L1 reading on L2 reading

From transcripts, her fieldnotes, and e-mail correspondence, one emerging theme was how L1 reading influenced the participant's L2 reading. It had both positive and negative effects on L2 reading efficacy.

The participant's L1 reading habits developed within the framework of her home country educational institutions from primary school through university. In order to succeed in school or university examinations, she had to read for all details, using the bottom-up strategy. The participant contended:

"I *had to know everything so* I *couldn't skip the sentence or chapters* I *wasn't interested in. Even in the university, due to most multiple-choice question format in the test,* I *should read very precisely and intensively."*

The circumstances made the participant a bottom-up academic reader since memorization of details was a necessity. She developed a bottom-up reading strategy for her L1 reading. However, in the researcher's perusal of articles she read for her Ph.D. courses, the researcher noticed that she had underlined some phrases and written down some words beside key points. Thus, it did not seem to me that she was using the same strategy in her L2 reading. So the researcher asked her about the contribution of the bottom-up strategy to her L2 reading in her American university in order to link this information with the change of reading strategies observed. The participant explained that she had applied the bottom-up reading strategy when she had entered her M.A. program in an American university as follows:

"*But when I started my graduate study in America, I figured out the bottom-up strategy was not helpful. The program required me more and various reading rather than narrow and intensive reading."*

With the different requirements of her new educational setting, adjustment had to be made but not from the beginning of the program. Due to the fact that the participant had changed her field of study from English literature at the undergraduate level to education—and more specifically, teaching English to speakers of other languages (TESOL)—she needed to gain familiarity with the terminology of her new field so she could grasp basic TESOL concepts. In her words,

"*That time the terminology about education like TESOL* I *never had that before. So* I *had a problem about that…. The first time, always* I *used the bottom-up, checking all the words, underlining and highlighting a lot.*

Probably not the first time. Perhaps two years (of the master program)."

Apart from her program requirements for more and varied reading, the participant found that reading at the word level in English did not allow her to increase her reading speed to a rate comparable to that when reading in her L1. She reflected:

"*In my L1, I think I read fast. I had speed-reading training in my primary school. But in (reading in) English (in the MA program), I couldn't apply it at first."*

Her slow reading speed made it difficult for her to keep up with all her reading assignments. The participant stated:

"*Also comparing to reading role in America, it's hard. In my country, we only had one or two textbooks per course. But here you know, at least four or five books a course, and sometimes writing papers, reading other articles. Oh my god, that really killed me!* I *had a really hard time adjusting. … It took time.* I *spent all day reading, but* I *couldn't finish reading for the class. …It is hard to cover all the required reading in the limited time and to synthesize various perspectives after only bottom-up reading".*

The effect of being unable to process the text beyond the bottom-up strategy also made it difficult for her to comprehend the text as a whole. The participant pointed out:

"*It is difficult for me to catch a big picture of the article when I concentrated on only the details. After reading, I knew the concept but I couldn't say why the author mentioned this concept or what the significance of this concept is in this article."*

These comments suggest that the bottom-up strategy she used in reading L2 texts helped her learn new vocabulary in order to understand the concepts of her new area of study, while this strategy was also employed in reading L1 texts, the terms and the grammatical system of which were much more familiar than those of her L2, for

getting details but also for getting an overall idea of text. This suggests that the participant did not simply rely on this single reading strategy.

The positive attitudes towards reading shaped in L1 reading had positive effects in L2 reading and its development. The participant reflected on the point as follows:

"I like reading, especially in herL1. I don't mind any genre…. Like in L1 texts, the researcher couldn't find anything uninteresting in L2 because I am learning. New concepts are like…Whatever topics if you go deeply, you find a lot of interesting things though they may not be your main interest. But sometimes the difficult reading, like I want to read something. I want to be interested in what I read. But if at that time, I find it difficult to read and it takes time and sometimes the explanation is long, I said why I was reading this. What you want to talk about? What is your research? That time I would go back and read it again. Ok now I'm comfortable. Then I read. Ok, what you did?"

Her positive attitudes toward reading derived from L1 reading habits motivated her in dealing with her heavy L2 reading load. She commented on this point:

"I like reading in herL1. So that kind of preference makes me feel ok if I had much reading load, ok you I can read it. I read it that much before in herL1. That much really made me scared because if I had this much of reading, I had to finish it. Being scared is kind of hard to concentrate. You read this much before. That kind of concepts really made me think, you know, you can do that, take your time. So that kind of reading skill when reading in L1 really helped (herL2 reading)."

These comments reveal the participant's awareness of her strengths and weaknesses considered as impacts from her L1 reading on L2 reading and admirably manifest her determination in developing her L2 reading strategies for effective reading.

Development of L2 reading strategies: Focus on purposes of reading

Purposes of reading as a key to how the participant read are another recurrent feature. As mentioned earlier, she started reading L2 texts after the undergraduate level with the bottom-up strategy. This was because she was trained to read that way in her home country's educational institutions and because she was unfamiliar with terminology and basic concepts of TESOL in the American university. The participant found using this strategy helpful in expanding her knowledge at the micro level. Yet acquiring too many details in fragments from reading with the bottom-up strategy deprived her of the ability to synthesize the text.

However, with the content schema of TESOL as well as enormous reading load to contend with, the participant developed her reading strategy. While she still used the bottom-up strategy but not as much as before, she applied the top-down strategy to solve the problems she had with a data-driven strategy. Upon her reflections,

"In L2, I'm a top-down reader (most of the time). Sometimes, if I finish my reading, when I reread I may do some bottom-up, but not my regular reading. …Headings, subheadings help me a lot. … I just keep reading it. But I have some kinds of chapters and I should totally understand, like second language acquisition, first time I look at the title and subtitle. I then know how they are organized. Then I go to the introduction with the title and sub-title introduction, I have whole ideas of what part I should be more careful, spending more time. Then I set up my strategy before I start reading. When I have that, when I go and find some titles very interesting, probably I slow down my reading and go line to line to get some points from there."

The participant read L2 texts more than once. The first quick reading was to grasp the text organization and to select parts on which to focus

in her second reading. The participant described her L2 reading style as top-down in both her first and second readings, the latter being slower but more selective than the first reading. The researcher considers the second reading as interactive. This is because the participant was developing formal schema and content schema by going through the text very quickly in her first reading. In the second reading, thus, there was more interaction between text decoding and processing and the schema she had developed. This helped her process the text more effectively. The participant reported:

> "*Usually when* I *read,* I *do the first reading and immediately the second reading. If* I *have some concepts, this article is about something, then, it's easy to process the next step. If* I *don't know what's going on, even though* I *read the whole paragraph,* I *have no idea what it is all about.*"

This extract depicts another developmental stage of the participant's reading strategy. The exploration of the text helped her perceive the text framework. With this perception, she digested and conceptualized the text with ease. Evidently, the first reading served as a scaffold, without which her comprehension might be short-circuited. The researcher asked if the participant felt satisfied with her reading quality, using the strategies according with her reading purposes. She responded:

> "*First time reading: I get words. You know it is like words because I really skimmed it and came up with two sentences (of summary). My second reading, I get at least some knowledge. I can't recall the whole article. If I finish the reading, I think so (satisfied with her L2 reading) because if I don't meet my purposes, I need to reread it.*"

To sum up, to achieve her reading purposes, the participant developed her reading strategies by incorporating the bottom-up and top-down strategies with the emphasis on the latter.

What was important for the participant in the reading process was to gain understanding of the text. Her two readings of the text, the first quick and the second less so, revealed that her first reading was to obtain a general idea of the text as written by the author and to discover which issues were of interest to her. The second reading was for specific purposes; she would pay attention to selected parts important for her and read them more meticulously than in the first reading.

Strategies used to tackle with L2 reading problems

The participant's emphasis on the schema of the text for reading success is repeatedly reflected through her reading activities. Group discussion was an activity she used on many occasions. She discovered the use of the discussion strategy when she entered the MA program and used the bottom-up strategy. In the participant's words,

> "*We had study groups; we shared (ideas) in the meetings. So* I *gained some ideas when discussing reading assignments. If you had some ideas about the reading, you know, it helped speed up your reading.*"

The participant found that in her Ph.D. program courses, group discussions were helpful in information confirmation, clarification, and expansion. In addition to sharing information with group members, she could raise questions on issues she found unclear, or issues that interested her or that warranted debate. Her rereading of the articles discussed became more interesting and more focused.

Paraphrasing was another recurrent feature that paved basic knowledge of the text for the participant's rereading. From time to time in the course of her reading, say, after reading a page, she would look away from the text and try to express the content of what she had read in her own words. The participant explained:

> "I *think paraphrase is the way* I *can…*

the direct quotation… I need to use the whole sentence. That means I have to reflect the whole meaning. To paraphrase, it doesn't mean that I change the meaning but I can change some of the words or I can change the word order in my way of writing. Also paraphrasing helps me understand more. Keep(ing) the citation some time doesn't make me understand."

Another emerging theme on reading activities that helped the participant construct the schema for later reading was ordering texts on related topics from simple to complicated ones. She said:

"I make my schema by myself by looking at other articles. Or sometimes I couldn't understand an article. Sometimes, our assigned reading is not only one but two or three articles, I go back to easy articles first. That could help me understand more. Then I could go back to read the difficult article."

It is noteworthy that the participant's concerns about her reading problems were associated mainly with the content, some vocabulary, and text organization rather than structural patterns. She explained:

"Language proficiency doesn't explain everything. We have to learn how to read. Reading is not just the start from the first word to the last word. We can do that now. But in the middle of the passage, how do you understand, how do you get the main point? How do you really react to them? That kind of stuff is reading through your learning."

The participant's reflections revealed that a schema was important for successful reading. To enlarge it, she searched for strategies to facilitate her reading such as group discussion, paraphrasing, and cross-referencing.

DISCUSSION AND CONCLUSION

Impact of L1 reading on L2 reading

This study revealed that the participant'

s L1 reading habits had impacts on her L2 reading. These included her bottom-up reading strategy and her positive attitudes toward reading. According to the findings of Parry (1996), the cultural and literacy backgrounds of EFL learners had an important role in shaping the way they read. In this study, the participant was trained in her country to do academic reading in a way that it would enable her to collect details for discrete point multiple-choice examinations. She transferred her bottom-up reading strategies to her L2 reading when she entered an MA program in an American university. She found it necessary for her to learn the terminology of her the new field of study, without which she would not be able to establish a schema and use it in pursuing her studies toward a degree in that area. Yet, she discovered difficulties with the bottom-up reading strategy. These might have been due to many reasons. First of all, she was not required to remember all details she read for academic success in the new academic setting. Second, the number of reading assignments was very high when compared to what she had experienced in her home country. The huge amount of information obtained from reading was too much for her to remember the way she used to do when reading in her country. In addition, the bottom-up strategy slowed down her reading speed. Last but not least, the participant could not grasp the interrelationship of concepts presented in the text she read. Due to these reasons together with her becoming familiar with her area of study, she gradually changed her reading strategies in order to develop her L2 reading efficiency to suit the purposes of her reading. In her silent reading and reading aloud of short texts, recall protocols revealed that she read for key concepts and for the overall idea rather than for discrete and separate pieces of concepts.

In terms of positive attitudes toward reading in L1, the participant motivated herself to read the L2 text based on her L1 reading experience even though the L2 texts were lengthy

and complicated. The participant's strong MOTIVATION to make sense of what was written in those texts, no matter how complicated it was, led her to finding ways to facilitate her comprehension. She searched for articles or texts on similar topics to read before reading a complicated text. In so doing, she could provide herself with the content schema that would help her process the difficult text more effectively. She would not give up reading. If she found that the reading was tedious or that she could not concentrate, she did something else before returning to the text again.

Reading strategy development for schema establishment

Considering the impact of L1 reading on L2 reading, the participant evidently developed her reading strategies to meet her needs. Employing intensive reading and the bottom-up strategy, she could not construct the schema of what she read to meet her expectations. Realizing that the schema was very important to her reading, she tried new strategies to establish a schema. Instantaneous interactions at all levels of the bottom-up and top-down processing took place in successful reading (Rumelhart, 1980 cited in Carrell and Eisterhold,1988). In this study, it was found that the participant employed the bottom-up and/or top-down strategies in a wider range. In other words, she found she used one strategy for one particular purpose and a different strategy for another purpose. Sometimes she used both.

This study establishes new knowledge on the participant's reading process in depth through her own reflections. Understanding how the participant read in her L1 and L2, what kind of problems she had, and how she solved them is helpful for reading teachers in understanding students' reading processes and helping students develop them for academic success.

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