Teaching of Reading Comprehension Under Psychology Schemata Theory

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Abstract: *With the globalization and the increase in foreign exchanges, Bangladeshi students have to read more materials in English than before. To help improve Bangladeshi students' reading comprehension skill, the psychology schemata theory has been discussed in this article. The article is intended to show that the schemata theory will really help the students of Bangladesh and they will gradually improve their reading comprehension skills.*

Schema Theory: An Introduction

Schema plays a vital role in teaching reading comprehension. Schema theory views organized knowledge as an elaborate network of abstract mental structures which represent one's understanding of the world. Charles Alderson (2000) mentions that "*writers must make assumptions about their readers' knowledge, since total explicitness would lead to enormously unwieldy use of language ....If readers do not possess the knowledge that writers assume, then difficulties in literal understanding will occur.*" Readers interpret a text using their world knowledge through the activation of "*networks of information stored in the brain which act as filters for incoming information.*" These mental filters have been termed as schemata**.** Schemas, or schemata, are seen as cognitive constructs by which we organize information in our long-term memory (Widdowson, 1983). They "*reflect the experiences, conceptual understanding, attitudes, values, skills, and strategies ... [we] bring to a text situation*" (Vacca & Vacca, 1999). Schemata, therefore, have been called "*the building blocks of cognition"* (Rumelhart, 1982) because they represent elaborate networks of information that people use to make sense of new stimuli, events, and situations. Schema theory is based on the belief that "*every act of comprehension involves one's knowledge of the world"* (Anderson et al. 1977, cited in Carrell & Eisterhold, 1983). Similarly, and more elaborately, Smith, (1994) states:

"Everything we know and believe is organized in a theory of what the world is like, a theory that is the basis of all our perceptions and understanding of the world, the root of all learning, the source of hopes and fears, motive and expectancies, reasoning and creativity. And, this theory is all we have. If we make sense of the world at all, it is by interpreting our interactions with the world in the light of our theory. The theory is our shield against bewilderment".

Students of Bangladesh face bewilderment while answering questions from those comprehensions containing those pieces of information which are not in their Schema. Once in a Language class I asked my students to answer a few questions from a very easy short story with the title 'A Halloween Night"- which explained funny embarrassing incidents that happened to the writer at a Halloween night. I thought the story would be very interesting and students would love to answer the questions. But after a while, I

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realized that my students could not understand what a Halloween night was. They seemed puzzled. Then I realized that my students are completely unaware of a Halloween night. I also discovered that students' failures in comprehension are not always due to some language-specific deficits, for example, their inadequate knowledge of vocabulary and grammar but it is also found that students fail to understand the text because of their lack of background knowledge of different cultures. Even at times some students who do not have language problems are still unable to comprehend what they read in English. Just as Widdowson (1984) says, "*the acquisition of linguistic skills does not mean to guarantee the consequent acquisition of communicative abilities in a language.*"

Since 1960s, ESL (English as a second language) reading theory has come under the influence of psycholinguistics and Goodman's (1971) psycholinguistic model of reading, that is, the Schema Theory. And the ESL reading comprehension study is to be talked about from this perspective.

Schemata Theory and Its Psycholinguistic Model

A schema is a structure in semantic memory that specifies the general or expected arrangement of a body of information. The notion of a schema is not new in psychology. It is generally associated with the early work on story recall by Sir Frederic Charles Bartlett (1932). He argued that, "*it is fitting to speak of every human cognitive reaction— perceiving, imaging, remembering, thinking and reasoning—as an effort after meaning.*" He argued that memory is active, constructive, and schematically determined. Adults better summarize and remember stories that come from their own culture than they do stories from other cultures when those other cultures have distinctly different expectations about storytelling forms. Such expectations are called schemata. Schemata are, in other words, mental structure acquired through many experiences with an event or in routine by setting up their expectations for what usually will happen and helping them interpret what does happen and remember what, in fact, did happen on particular occasions both typical and unusual. Schemata are, in turn, continually modified by experiences.

"*In a broad sense, there are two types of schemata—content schemata and formal schemata. Content schemata contain general or specific information on a given topic. Formal/textural schemata contain information about how rhetoric is, or ought to be, organized* "(Carrell, 1998).

Schemata Theory is based on Goodman (1967)'s psycholinguistic model that reading is a guessing game. The basic idea of the theory is that human memory consists of high levels of structures known as schemata, each of which encapsulates our knowledge about everything connected with a particular object or event. Coady (1979) has elaborated on this basic psycholinguistic model and has suggested a model in which the ESL reader's background knowledge interacts with conceptual abilities and process strategies, more or less successfully, to produce comprehension.

As Kant claimed as long ago as 1781, that background knowledge plays a role in (reading) comprehension, so that new information, new concepts, and new ideas only have meaning when they can be related to something the individual already knows. This

applies as much to second language comprehension as it does to comprehension in one's native language. Recent empirical research in the field of schema theory has demonstrated the truth of Kant's original observation.

According to schema theory, the process of comprehension is guided by the principle that every input is mapped against some existing schema and that all aspects of the schema must be compatible with the input information. This principle results in two basic models of information processing, called 'bottom-up' and 'top-down processing'. Bottom-up processing is evoked by the incoming data; the features of data enter the system through the best fitting, bottom-level schemata. Schemata are hierarchically organized, from most general at the top to most specific at the bottom. As these bottom-level schemata converge into higher level, more general schemata, these too become activated. Bottom-up processing is, therefore, called data-driven. Top-down processing, on the other hand, occurs as the system makes general predictions based on higher level, general schemata and then searches the input for information to fit into these partially satisfied, higher order schemata. Top-down processing is therefore, called conceptually driven. An important aspect of top-down and bottom-up processing is that both should be occurring at all levels simultaneously (Rumelhart, 1980). Bottom-up processing ensures that the readers will be sensitive to information that is novel or that does not fit their ongoing hypothesis about the content or structure of the text; top-down processing helps the readers to resolve ambiguities or to select between alternative possible interpretations of the incoming data.

Thus, a reader's failure to activate an appropriate schema during reading results mostly in a mismatch between what the writer anticipates the reader can do to extract meaning from the text and what the reader is actually able to do. There are at least three possible reasons to account for it. For one thing, readers may not have the appropriate schemata the writer anticipated. So, they simply cannot understand the concept being communicated. For another, readers may find a consistent interpretation of the texts, but may not find the one intended by the writer. In this case, readers will understand the text, but will misunderstand the writer. Finally, readers may have the appropriate schemata, but the writer does not provide sufficient clues in the text for them to effectively utilize a bottom-up skill to activate the content schemata the reader may already process.

Implication in the Teaching of Reading Comprehension

Based on the above analysis, the schemata can improve reading comprehension, and reading, in turn, can help readers build new and correct schemata .What a good teacher should do is to help students facilitate reading comprehension by making use of the schemata. We can achieve this goal through the efforts made in four aspects:

A. Enlarge Students' Background Knowledge
B. Cultivate Students' Ability to Make Prediction and Association of the Reading Material.
C. Enrich Students' Schemata of Different Writing Styles
D. Activate Students' Existent Content Schema and Help to Create their New Content Schema

A. Enlarge Students' Background Knowledge

Plato elaborates the Greek doctrine of ideal types -such as the perfect circle that exists in the mind but which no one has ever seen. Kant further developed the notion and introduced the word schema. For example, he described the "dog" schema a mental pattern which "*can delineate the figure of a four-footed animal in a general manner, without limitation to any single determinate figure as experience, or any possible image that can be represented in concereto.*" (Kant, 1781) Language is the carrier of cultures, so, it is important to strengthen the teaching of cultural background knowledge in the teaching of reading comprehension. For different peoples, their traditions, views and norms, etc. toward the same thing may vary a great deal or even conflict because of cultural differences. My students were troubled with the "Halloween" story. Because in Bangladesh we do not celebrate such festivals. The word "Halloween" does not make them visualize the day of wearing scary dresses or getting chocolates from the neighbors. It is not inside their Schema. Students, therefore, have to equip themselves with related background knowledge on different cultures to achieve good comprehension of the reading materials. Otherwise, they are less likely to make correct judgments and predictions of the questions while they are reading the articles. In view of this, it is necessary for a teacher to strengthen his or her teaching of the related cultural background knowledge of the target language, besides the teaching of language itself. Students can consequently form new schemata about different cultures and improve their reading comprehension. What's more, students' interest in reading will be greatly boosted.

B. Cultivate Students' Ability to Make Prediction and Association of the Reading Material

Psychological schemata theory comes from practice; it also has practical guide. Ferdinand de Saussure, founder of modern linguistics reckons that Speech activity is heterogeneous and language is homogeneous. Making prediction means to build a psychological schema based on the information of the reading material. According to F. Smith (1994) "*making prediction is the core of reading comprehension and also the basis for us to understand the world around us*". The establishment of prediction-making schemata is dependent on what has been stored in our brain such as semantics, syntax and word meanings and the clues hidden in the reading material. In teaching reading comprehension, teachers should guide students to broaden their thinking and inspire them to make prediction from seemingly irrelevant information and extract related information from the brain so that students can gradually enhance their self-awareness of making prediction and association.

C. Enrich Students' Schemata of Different Writing Styles

In the reading process, readers will identify the writing style of the material and form the schemata in their minds. They will use all kinds of knowledge, such as knowledge of the discourse and of the socio-linguistic rules to select the relevant schemata to get the theme and structure of the article. With the knowledge of the theme and structure, students can achieve a better understanding of the reading material. Teachers should help students analyze the style, structure and theme of the material before students begin to read it so

that students can develop stylistic schemata in their minds. Once students have mastered the stylistic schema, they will process information more effectively and hence, improve their reading comprehension.

D. Activate Students' Existent Content Schema and Help to Create their New Content Schema

According to schema theory, the new input information, decoding and encoding are all dependent on the existent schema. The input information must be matched with these schemas to complete the process of information processing. For many students, reading is a passive process and they just passively absorb the information. In order to improve reading efficiency and quality, teachers should develop students' cultural sensitivity and activate students' existing schemata through the organization of class discussions on the subject of reading material. Teachers are advised to make a careful selection of the reading material so that students can achieve the effective accumulation of knowledge and thereby enrich their own content schema.

Conclusion

As mentioned above, students' failures in reading comprehension are mainly due to the lack of appropriate schemata matching with the writers' schemata. Therefore, what teachers should do is to help students activate and make full use of new schemata, when interpreting a text. The teaching of reading comprehension under the psychology schema theory requires teachers to help students construct the new schemata based on students' existent schemata by assisting students to find out the main idea of the text, the links between the chapters and the law the chapters follow. Teachers need to activate students' active thinking, guide them to identify the main points of the passage and the interface between the points to form a matching schema. Teachers should provide background information, such as linguistic forms or content previews, to construct or activate the appropriate schemata. Teachers should ask students to use their brains, to give full play to their creativity and to reflect on material they will read so as to form a correct understanding and inference of the material, build their own new schemata and thus broaden the range of their knowledge. It is very unlikely for students to form at once a suitable schema that matches an article. It takes much time and practice to achieve the goal. Teachers should guide students and offer them opportunities of much practice to help students construct their schemata. Just as a proverb says, "Give a man a fish and he eats for a day. Teach them how to fish and he eats for a lifetime."

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