

Study on the Application of the Schema Theory to the Teaching of College English Reading

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Abstract: Reading is one of the fundamental approaches for acquiring language and information, and it is an essential part of English language teaching. The most influential teaching theory is “bottom-up” and “top-down” reading theories. “Bottom-up” theory argues that reading process is the pure language decoding process, while “top-down” theory stresses the influence of the existing background knowledge on reading. These two theories only focus on a certain aspect of reading, and they can not interpret reading process effectively. According to schema theory, comprehending a text is an interactive process between reader’s background knowledge and the content of a text. Hence, schema theory has an important effect on teaching of English reading. Under the guidance of schema theory, this thesis attempts to explore the application of schema theory from three aspects: linguistic schema, content schema and formal schema respectively. It is hoped that this study will improve students’ reading ability and enhance the teaching effect of English reading in the long run.

Keywords: Teaching of College English Reading; Schema Theory; Linguistic Schema; Content Schema; Formal Schema.

1. Introduction

1.1. Background of the Study

It is commonly believed that English has become the most widely used language in our daily life. The importance of English has been greatly enhanced. Entering into the information era, learning a foreign language is increasingly important in the world. Reading is an indispensable process for people to acquire another language. But traditional teaching methods can't keep pace with time since teachers and students dominate classes are passive receivers of knowledge. It is hard for students to communicate with others fluently in English, and it is difficult for them to read English articles freely in their daily lives. Several reasons lie behind such a phenomenon. On the one hand, students are always stuffed with new words, phrases, and grammar, which cannot form a language system in their mind. They are accustomed to such teaching patterns in the long run, so they cannot read effectively and efficiently. On the other hand, students are not in a real foreign language environment, and they seldom read English after class except for textbooks, so they are exposed to insufficient cultural background knowledge related to the context. When they read English text, they are not aware of the structure and organization of, and as a result, they fail to grasp the integrity of the whole passage. Furthermore, as a foreign language, few students can pronounce it accurately as they do in their native language. After reading a text, they even forget what they have read before. Many teachers apply various reading theories in foreign language teaching. However, some reading theories may not be suitable for any foreign language learners because they cannot meet different needs of learners of different levels.

In recent years, reading comprehension covers a larger proportion in College English Tests, but many students do not know how to read effectively. Reading is the necessary way to master language, and it is an important approach for people to absorb knowledge and gain information. The purpose of teaching reading is to cultivate and improve students' reading ability. But, how to achieve the optimal result of reading,

making readers read more efficiently and more effectively? Applying teaching methods to a real teaching environment is a hard nut to crack. The ability to use correct reading comprehension strategies and approaches is crucial. In order to improve students' reading ability, it is necessary to introduce schema theory to form an effective way of teaching reading.

1.2. Significance of the Study

For many years, students have traditionally learned English. They are taught to read the text sentence by sentence, and they have no problem understanding the words and grammar of each paragraph, but they cannot grasp the whole meaning of the text. They often feel daunted and frustrated when they encounter obstacles in English learning. The traditional reading process follows the "bottom-up" model, paying more attention to vocabulary and grammar and requiring students to read word by word. Teachers regard the reading activity as a process of decoding the intended meaning of the author, so there is no doubt that students cannot grasp the meaning of the whole text. While the "top-down" model emphasizes high-level schema and the cultural background knowledge. It emphasizes on the fact that the reading process is an active and positive activity between readers and the author. But only when the two models are combined effectively can they improve students' reading ability. The author finds that schema theory can not only activate and retrieve readers' pre-existing knowledge and past experience, but also explain that reading is an interactive process rather than a passive process of decoding. According to schema theory, reading comprehension is an interaction between readers' background knowledge and the reading materials. Readers' understanding and flexibility of the three schemata: linguistic schema, content schema and formal schema, determines their reading ability.

1.3. Aims of the Study

This thesis will emphasize the application of schema theory in the teaching of College English reading. The overall objective of this study is to prove that the three types of

schemata are an effective way to enhance students' reading ability and have a positive influence on reading comprehension. Furthermore, the author hope readers can find methods to learn English reading comprehension effectively and efficiently based on schema theory in this paper.

2. Definition and Classification of Schema

Kant Immanuel, a German philosopher, proposed the word "schema" in 1781. Schema was used to explain the psychological process by cognitive psychologists. Sir Fredric Bartlett (1932), a British psychologist, is usually reckoned as the first person to use the term "schema". In his classic book *Remembering*, the schema theory was developed, in which the term "schema" meant "an active organization of past reactions, or experience, which must always be supposed to operate in any well-adapted organic response." Rumelhart (1977) summarized schema as "sets of interactive knowledge structure" or "the building of blocks of cognition." Carrell and Eisterhold (1983) stated that the prior knowledge of the reader was organized as their schema. Language comprehension was largely depended on the background knowledge of the readers.

The so-called schema refers to all kinds of knowledge and experience formed in the brain. The knowledge and cognitive structures of our brain play an important role in our thinking. Schema is a framework of knowledge that stores information in an orderly manner in long-term memory, and it is a kind of information storage structure in a semantic network, formed by one or more complex semantic unit. Everyone has his own schema, which is either systematic or disorganized. Schema theory helps readers make sense of background knowledge and information. According to the schema theory, when readers understand and acquire knowledge, they need to connect the pre-existing information with the known concepts in the brain, the past experience and the background knowledge. There is a close connection between reading comprehension and schema theory. Readers who have orderly concepts of various schemata can retrieve the proper schemata much faster than those whose schemata are out of order when they are reading.

Generally, schemata can be classified into three categories according to the contents: linguistic schema, content schema and formal schema. The linguistic schema refers to the degree of the learner's mastery of the language, including the knowledge of language phonetics, vocabulary and grammar, and grasping linguistic knowledge is the first step to understand the whole reading process. Students should take advantage of the basic knowledge of language to broaden their linguistic schema in their mind. Content schema refers to the readers' background knowledge of the whole text, which is the key for readers to understand the main idea, and if readers understand the content of the text on the whole, they will grasp the author's main idea. Readers' cultural background knowledge and experience play an essential role in understanding text, which enable them to comprehend the text easily even if they cannot understand the syntactic meaning accurately. Formal schema, which is also known as rhetorical schema, refers to readers' knowledge of different text types and genres. If readers are well aware of the layout of different genres, they are able to understand the text speedily and efficiently. To sum up, it may be stated that as long as readers grasp the three schemata thoroughly, they can

solve problems in reading.

3. Overview of the Teaching of College English Reading

According to modern psycholinguistics and cognitive linguistics theories, reading is not only a complex and active psychological activity based on readers' known information, but also a relatively independent cognitive behavior. Reading is no more regarded as a passive process in receiving literal messages, but an active thought activity between readers and author. Schema theory claims that reading a text implies an interaction between the reader's various schemata and the text itself.

At present, lack ability to apply schema theory to comprehend text is one of the most important reasons to affect college students' English reading ability, so the objective of College English Teaching is to cultivate the students' reading comprehension abilities and students must understand the true meaning of reading. The traditional way of reading teaching puts teachers in a leading position, while students are at a receptive and passive status in long-term learning. Students are unaware of the significance of learning outside class, and they are at a low level in accumulating vocabulary, grasping the grammatical system and exploring the profound meaning of semantics. In such an environment, students passively learn English without achieving ideal results.

We can see that students fail to understand the reading materials in the long term. Reading classes are still dominated by teachers lecturing on language knowledge while students noting down, and students passively receive knowledge instructed by teachers without actively participating in class. As a result, this reading teaching is easy to cause comprehension failure when students read English. If the status is not fundamentally changed, the motivation and enthusiasm to learn English will inevitably decrease in and after class. Therefore, the strategies and methods about reading must be improved in College Reading Course.

4. Application of Schema Theory to the Teaching of English Reading

The schema theory plays a significant part in the process of intensive reading. In recent years, students have applied the schema theory to reading, which has achieved a satisfying result. Reading comprehension in essence is a cognitive process; the initial stage of reading comprehension is not only a cognitive process but also a continuous learning process; reading comprehension can also be regarded as a communicative and interactive process. Schema theory plays an important role in linking readers' knowledge with reading materials in the process of reading comprehension. The knowledge of word itself has no meaning, but when schema theory activates the pre-existing knowledge in readers' brains to understand the whole passage, then words turn into a significant part in reading. Reading is a complex process of integration, not simply a reflection of words in the mind. So it requires readers to search for the schema that is relevant to the author's writing intention in the process of reading. They cannot grasp the meaning of the text unless they find the correct schema in their mind.

In the reading process, the amount of schemata available to readers will determine how easily their brains can interpret the text. In order to activate the corresponding schema and facilitate better understanding of the text, readers should

employ the theory of "top-down" and "bottom-up" models on the basis of interaction between the existing knowledge and the information provided by the text. According to background information in this study, readers are able to predict main ideas of the article and what the author argues about. What's more, readers can choose the reasonable schema to deduce, and store the useful information following their knowledge structure by applying existing knowledge. By understanding the article's core idea, readers can conclude the purpose of the text. If readers can find selected and processed reading materials, it will be more beneficial for them to understand the theme of the article clearly and precisely. Schema can be classified into three types: linguistic, content, and formal (Carrell, 1984).

4.1. Linguistic Schema

Linguistic schema lays the foundation for content schema and formal schema. Only when readers skillfully grasp the correct linguistic schema methods can they understand content schema and formal schema accurately, and they can read quickly and effectively if the three schemata combine with each other. However, if readers cannot understand linguistic schema completely, they cannot read efficiently. Here are three suggestions on how to cultivate the linguistic schema ability.

4.1.1. To Enrich Vocabulary

There are different types and genres of reading materials, which allow readers to guess the meaning of the words they are not familiar with. The linguistic schema requires students to grasp the meaning of the text through their understanding of words, phrases and sentences, so they should focus on language itself, and regard the understanding of the text as the understanding of the language. Then readers can make reasonable predictions of the content based on the context in the text, imagining the theme according to the unique words appearing in the sentence. Some conjunctions mean reason, such as "because", "due to" and "as a result of", so it is easy for readers to know that such words are the explanation for the former sentence. Teachers should pay more attention to teaching vocabulary in class to enrich students' vocabulary.

4.1.2. To Grasp Word-formation Clues

In English, prefixes and suffixes are the common word formation. Prefixes generally change the meaning of a word, while suffixes change the word class. It is a very effective way to grasp the meaning of a word and sentence by using such rules. For example, as readers come across a new word "misunderstood" in the process of reading, they can surmise its meaning in the light of English word formation schema stored in the mind. First of all, "mis," a prefix, means "wrong, bad," and the word "understand" means understanding, so "misunderstand" means interpreting something in a wrong way. We can conclude that using word formation to enlarge vocabulary in English learning will be important in reading. Teachers should teach students some word formation rules in order to help them predict some meanings of words in a text they have never learned before.

4.1.3. To Understand Textual Structure

The linguistic schema is the basic unit in the mind, or it can be called a structure. Therefore, students can establish the correspondingly textual schema by combining reading materials and discourse structure in the process of reading, and grasp the whole textual meaning and deepen their understanding of the text by making full use of the known

language. The establishment of textual structure is helpful for the students to analyze and interpret the text reasonably. The structure is shown as follows:

Para.1

The structure of the passage

Para.2

The main idea of this paragraph

Para.3

The main idea of this paragraph

Para.4

The conclusion

If students can set up the above schema, even though they don't understand many words and phrases in the whole passage, they can still grasp its overall meaning and theme, as well as the author's intention.

4.2. Content Schema

Content schema is the background knowledge an essay or the topic it relates to (Carrell, 1988), which is the main part in the English extensive reading, including a variety of comprehensive knowledge, cultural background knowledge, etc. Several second-language and reading comprehension studies indicate that prior cultural experiences are extremely important in comprehending text (Anderson & Lesgold, 1981; Johnson, 1982). No matter what kind of reading materials, they all reflect a certain background knowledge. Even if readers can understand the meaning of every sentence in the whole passage, they cannot accurately grasp the text's main idea for short of the background knowledge. In particular, some of the author's articles are related closely to current politics, economics, culture, and customs, so in order to understand the article thoroughly, readers should apply some background knowledge to comprehend the content of the text. In general, texts are longer in extensive reading books; more words and genres are unfamiliar to readers, and some contents are redundant for readers to answer questions, so it is vital to grasp the core idea and writing thinking when encountering such problems. Generally speaking, based on the understanding of content schema, readers can improve their reading speed by finding the essential content and key sentence (the first sentence, the last sentence, the central sentence), namely, readers should select which part of the text to be read.

The content schema plays an essential role in understanding the theme of a text, so what we need to do is to search for the important part of it, search for the critical comments, the main facts and typical examples. Students can obtain the answers directly based on the questions in the text, finding out the sentences or words related with the questions, overlooking the complex and unrelated ones, and eliminating unnecessary options. For example, the "5w+1h" principle, "5W", that is, "why, what, where, who, when"; "1H" refers to "how". A good reader does not read passively only for the prepositional meaning of each sentence, but more importantly, he reads for the meaning at the pragmatic level. It will be much easier and convenient to read if readers not only comprehend the background knowledge but also find the key words and sentences simultaneously.

4.3. Formal Schema

Formal Schema not only refers to the knowledge and understanding of different text types and genres, but also refers to information about the text organization, rhetorical structure, etc. Different materials include newspapers, reports,

poems, fables, stories, etc. That means students should understand the layout of various genres, which will definitely contribute a lot in reading comprehension. In order to precisely get the theme of the text, readers should make full use of the content and organization of the text. However, lacking such kind of model, readers are definitely short of patterns in the area of information processing and they won't grasp the overall ideas. Accordingly, it is even more difficult for them to understand the whole text. For instance, for exposition, the author usually put forward a question for readers to solve and eventually draw a conclusion. Another example is for organization of argumentation. The basic structure of argumentation is composed of three parts: argument, sources and facts, which are the "three elements" of argumentation. Argument is the main mode of expression, using "concepts, judgments, reasoning" to show the author's point of view, clarify the truth, and refute the views of others. According to the knowledge of argumentation, readers can find the key sentence and, grasp the argument accurately, and read more effectively than before through linking the fixed structure with text genre.

It is necessary to apply formal schema to answer questions about the main content of a text in the College English Test.

The content of a text is related very closely to its structure, which requires readers to understand the structure in the process of reading. On the basis of grasping the structure, readers can conjecture the contents of the text and understand the general meaning of each paragraph by summarizing the key sentence from it. Therefore, readers should pay more attention to the central sentence of a text in the English Extensive reading, and they should take great advantage of this method in order to improve reading efficiency. If readers cannot handle problems by formal schema, then they must encounter troubles in the process of solving practical problems.

Formal Schema demands that readers should not only master a certain number of textual structures of genres, but also enrich the cultural background knowledge to the best of their ability. Consequently, readers can boldly surmise the theme and make reasonable prediction of a text in the reading process, which finally improves reading speed and efficiency.

5. Some Specific Approaches of the Schema Theory to the Teaching of College English Reading

Table 1. Five Stages of SLA

| Silent/Receptive Stage I | Early Production Stage II | Speech Emergence Stage III | Intermediate/Advanced Proficiency Stage IV&V |
|---|--|--|--|
| Use of visual aids and gestures | Engage students in charades and linguistics guessing games | Conduct group discussions | Sponsor student panel discussions on thematic topics |
| Slow speech emphasizing keywords | Do role-playing activities | Use skits for dramatic interaction | Have students identify a social issue and defend their position |
| Do not force oral production | Present open-ended sentences | Have students fill out forms and applications | Promote critical analysis and evaluation of pertinent issues |
| Write key words on the board with students copying them as they presented | Promote open dialogues | Assign writing compositions | Assign writing tasks that involve writing, rewriting, editing, critiquing written examples |
| Use pictures and manipulatives to help illustrate concepts | Conduct student interviews with the guidelines written out | Have students write descriptions of visuals and props | Encourage critical interpretation of stories, legends, and poetry |
| Use multimedia language role models | Use charts, tables graphs, and other conceptual visuals | Use music, TV, and radio with class activities | Have students design questions, directions, and activities for others to follow |
| Use interactive dialogue journals | Use newspaper ads and other mainstream materials to encourage language interaction | Show filmstrips and videos with cooperative groups scripting the visuals | Encourage appropriate story telling |
| Encourage choral readings | Encourage partner and trio readings. | Encourage solo readings with interactive comprehension checks | Use Total Physical Response (TPR) techniques |

They are understanding that students are going through different stages of learning English, which is crucial for teachers to accept a student's current knowledge and make out a specific teaching plan for the next stage. (1) Using students first language to promote understanding a foreign language: In light most EFL students are exposed to a limited context of learning language, completely understanding a foreign language is difficult for them. Teachers merely speak a second language will not enhance their ability of comprehend English. So, using students first language is a practical method to help

them improve their English. (2) Increasing interaction: Students should develop an ability to use language in a social context since they possess different views and backgrounds of the passage. Through collaborating with each other, they can grasp the general meaning of the passage without teachers' instruction. Teachers should give them some meaningful reading materials for them to cooperate with each other, which aims to strengthen their language competency and develop themselves. (3) Increasing comprehensibility: Teachers should not only apply verbal teaching approaches

but also apply nonverbal teaching methods in order to make the content of reading material more understandable to their students. The material includes videos, pictures, graphic illustration, demonstrations and other instruments that can facilitate language learning and comprehension. Here are five stages of second language acquisition linked to appropriate and specific instructional strategies (Ling Jiang,2016).

6. Conclusion

From the perspective of schema theory, teaching reading is considered as an important part of ESL/EFL teaching. Teachers should work out better methods to improve students' reading ability. The major reason resulting in reading difficulties is the lack of schemata. So it is necessary to apply the schema theory to practical English learning, which will be beneficial for students to improve their reading efficiency. The modern schema theory is a comprehensive and interactive theory which interprets the way of obtaining the core idea from reading materials by using schema principle. It provides a new area for researching reading theory, and a new theory pattern for reading teaching as well. Reading ability is affected by linguistic schema, content schema and formal schema, so in daily English learning, students should not only master the meanings of words and enhance grammatical ability but also learn textual structure and cultural background knowledge. In order to improve reading ability, students must choose corresponding schema to speculate the main idea depending on their own semantic network storage structure, and it is helpful for them to understand the text by themselves. Besides, teachers should make specific and different instructional decisions based on students' real level of prior knowledge.

In conclusion, the discovery of schema theory provides a new method for readers to read effectively and efficiently. Nevertheless, there are many complex factors which affect students' reading ability, such as emotional factors, dialectal factors, environmental factors and textual factors, etc. This thesis tries to offer some instructive suggestions on the teaching of reading from the view of schema theory, and tries to argue the importance of language and cultural background knowledge to reading instruction. Teachers should help students construct the structure of language knowledge and enrich the cultural background knowledge by using suitable

approaches. Though this study obtains some satisfactory outcomes, this thesis has some limitations. Firstly, due to the author's limited knowledge and the complexity of the study, this thesis is only conducted in the teaching reading of College English, but not all students at different levels. Secondly, applying schema theory to practical reading teaching is hard because of some real factors. Therefore, it is suggested that further studies on this topic should be continued and make full use of schema theory to enhance students' reading ability.

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References

- [1] Anderson, R. C., & Lesgold, A. (1981). Schema-directed process in language comprehension. In *Cognitive psychology and instruction*. New York: Plenum.
- [2] Bartlett, F. C. (1932). *Remembering*. New York: Cambridge University Press.
- [3] Carrell, P. L., & J. C. Eisterhold. (1983). Schema Theory and ESL Reading Pedagogy. *TESOL Quarterly*, 17, 553-573.
- [4] Carrell, P. L. (1984). Evidence of a formal schema in second language comprehension. *Language Learning and Communication*, 2, 87-112.
- [5] Carrell, P. L. (1988). Some causes of text-boundedness and schema interference in ESL reading. In Carrell, P. L., J. Devine, & D. E. Eskey (eds.), *Interactive Approaches to Second Language Reading*. Cambridge: Cambridge University Press.
- [6] Johnson, P. (1982). Effects on reading comprehension of building background knowledge. *TESOL Quarterly*, 16(4), 503-516.
- [7] Ling Jiang. *A Study on Language Learning and Teaching*[M]. Press of Northeast Forestry University,2016:22-23.
- [8] Rumelhart, D. (1977). Schemata: The building blocks of cognition. In *Theoretical issues in reading comprehension*. R. Spiro, B. Bruce and W. Brewer. Hillsdale, N.J.: Lawrence Erlbaum Associates. 88-96.