

Application of Schema Theory in Teaching College English Reading

APPLICATION DE LA THÉORIE DES SCHÉMAS DANS L'ENSEIGNEMENT DE LA LECTURE EN ANGLAIS DANS LES COLLÈGES

Liu Yu-hui¹

Zhu Li-rong

Nian Yue

Abstract: The paper first introduces three models of reading comprehension theory: Bottom-up Model, Top-down Model and Interactive Model, and then discusses in detail the schema theory based on interactive model. Three types of schema theory—language schema, content schema and form schema are introduced and their different functions in teaching college English reading are discussed with sufficient teaching practice.

Key words: reading comprehension; schema theory; reading ability

Résumé: Tout d'abord, l'article présente trois premiers modèles de la théorie de compréhension en lecture: modèle bas-haut, modèle haut-bas et modèle interactif, et ensuite il discute en détail la théorie des schémas basée sur le modèle interactif. Trois types de théorie des schémas - schéma de la langue, schéma du contenu et schéma de la forme sont introduites et leurs fonctions différentes dans l'enseignement de la lecture en anglais dans les collèges sont discutées avec une pratique pédagogique suffisante.

Mots-Clés: compréhension en lecture, théorie des schémas, capacité de lecture

College English Curriculum Requirements issued by Ministry of Education in 2007 emphasizes the importance of developing students' ability to use English in a well-rounded way, in listening and speaking, as well as reading, writing and translation. While listening and speaking are to develop students' communicative competence, reading, writing and translation are connected with written abilities. Among reading, writing and translation, reading is primary. One cannot improve writing and translation without continuous input and accumulation through extensive reading. Therefore, reading is the key to improving writing and translation after mastering certain amount of vocabulary. This paper

¹ College of Foreign Languages, Beijing University of Technology, Beijing, 100124, China
E-mail: liuyuhui@bjut.edu.cn

* Received 15 November 2009; accepted 2 January 2010

discusses how to improve students' reading comprehension through applying schema theory in teaching of college English reading from the viewpoint of cognitive psychology.

1. THREE READING MODELS

What is reading ? Reading is a complicated, actively thinking mental activity, a thinking process to experience, predict, verify and acknowledge information according to readers' previous information, knowledge and experience, and also an interactive language communication between readers and the writer through text. Smith (1985) pointed out that in order to understand language, a reader must utilize direct and implicit information. Direct information refers to words written down, while implicit information includes knowledge of structures and words of a language in a text and knowledge of the discussed topic and certain experience. Based on the characteristics of reading process, the development of reading models can be classified into three phases: Bottom-up Model, Top-down Model, Interactive Model.

Bottom-up Model came into being in 1960s, which emphasizes that readers, taking reading materials as information input, start from letters and words recognition and then combine information continuously to accomplish reading activity. This model highlights that reading must be done in a fixed sequence to get word meaning gradually and readers comprehend the reading materials mainly by language knowledge. In this model, readers' implicit information, that is, one's knowledge and life experience, is neglected and one's active processing of information is not taken into consideration. Following this model, teachers would concentrate mostly on words, sentence patterns and grammatical knowledge related to the reading material but pay little attention to relevant background knowledge when teaching reading.

During late 1960s and early 1970s, Goodman (1967) and Smith (1971) proposed a reading model based on psycholinguistics, named as "Top-down Model". The model takes concept theory as basis, and points out that readers predict reading materials according to previous syntax and semantic knowledge and make confirmation and modification during reading process. The model assumes that reading process is based on readers' previous knowledge and is a circulating process of predicting, verifying and confirming. Under the guidance of this model, teachers would pay too much attention to students' previous knowledge, that is, implicit information in the reading process and overlook basic language knowledge teaching.

In 1977, Rumelhart published *Towards an Interactive Model of Reading*, which holds that in fact reading process is a complicated "interaction" process of many types of language knowledge, including letters, words, syntactic patterns and semantic meaning etc., that is, interaction of direct and implicit information; language processing interacts at different levels. This model theory forms the basis of Schema Theory.

2. SCHEMA THEORY IN READING

In this section, schema theory in reading and its classification into language schema, content schema and form schema will be discussed respectively.

2.1 Schema Theory

Schema theory is one of the theories that have been applied to explain the mental comprehensive process by cognitive psychologists, which was first proposed by psychologist Kant in 1781. He pointed out that meaning exists only when concept is related to personal known information. After that, American

artificial intelligence expert Rumelhart (1980) took schema as “a structure in semantic memory that specifies the expected sequence of events”. There are various kinds of schemata in man’s mind, such as car schemata, teacher schemata, building schemata and so on. The main point of schema theory is that : One needs to connect new things with those known concept, past experience, or background knowledge, to understand new things. Understanding and interpretation of new things depend on the existing schema in mind and the input information must match existing schema.

Schema can help people to understand not only things and experience, but also the language describing these things and experience, including written and spoken form. Because discourse comprehension involves discourse and its listeners or readers, effective comprehension requires that listeners or readers are able to associate the discourse with personal knowledge. Carrell(1983) assumed that language ability is in fact one part of one’s total background knowledge (schema). When reading, students who can not grasp the meaning are usually lacking in content-related schema. Rumelhart(1980) proposed three possible reasons why readers can not understand a text: first, readers lack proper schema. Under this condition, readers can not understand the meaning contained in the text at all. Second, readers may possess adequate schema, but the author does not provide enough clues to activate the schema. Therefore, readers still can not get the meaning. If adequate clue is provided, readers can understand the text. Third, readers interpret the text in a consistent way but deviate from the author’s intention. Under this condition, readers seem to understand the text but misunderstand the author’s intention.

2.2 Classification of Schema

According to schema theory, readers’ schema can be classified into three types: language schema, content schema and form schema.

2.2.1 Language Schema

Language schema refers to readers’ mastery of a reading material, identifying the letters, words and sentences of the reading material. Without language schema, a reader can not utilize content schema and form schema in brain by information and clue provided, not to mention comprehension of the reading material. Therefore, language schema is a prerequisite for reading comprehension and basis for content schema and form schema.

2.2.2 Content Schema

Content schema consists of two aspects: one is situation schema connected with reading material; the other is background knowledge schema previously possessed by readers. Situation schema refers to a schema formed by readers through combining letters and words in the same semantic field by language schema during reading process; background knowledge schema refers to knowledge and experience stored in a reader’s brain, which can affect directly the degree of reading comprehension. The more background knowledge schema a reader possesses, the better his reading comprehension is. For example, when an expression like ‘stinking ninth category’ (of class enemies next to landlords, reactionaries and even spies, etc., a term of abuse by ultra-leftists for teachers and other educated people in the 1966-1976 Cultural Revolution) appear in reading, most people born before 1960s to 1970s would have a ‘cultural revolution schema in mind, and feel easy to understand ‘the Red Treasure Book’ and ‘the Gang of Four’. With good background knowledge schema, readers would also have very good prediction to the matter illustrated in reading, which can greatly raise their reading speed. But to young people of today, it would be a little hard to understand the above information. Thus we can see that content schema can help readers to predict and choose information, to eliminate ambiguity and raise reading speed, or even can make up for shortage of language knowledge.

2.2.3 Form Schema

Form schema refers to the extent that readers master the logic structure and rhetoric knowledge in reading. Different text styles have different form schemas. Readers can make a prediction to later development according to form schema in mind.

3. APPLICATION OF SCHEMA THEORY IN TEACHING COLLEGE ENGLISH READING

In this section, application of language schema, content schema and form schema in teaching of college English reading will be explored with examples from book II, *New Horizon College English* published by Foreign Language Teaching and Research Press.

3.1 Application of Language Schema in Teaching College English Reading

Language schema is a prerequisite for reading comprehension and basis for content schema and form schema. Therefore, it is necessary to enlarge students' vocabulary, and to teach basic words, sentences and grammar. In teaching college English reading, the authors find out that one main problem for poor learners is their lack of language knowledge, with a certain number of students not mastering some basic words. For example, sentences as follows appear in the first paragraph of a reading text —Time —Conscious Americans in section A, Unit One:

Americans believe no one stands still. If you are not moving ahead, you are falling behind. This attitude results in a nation of people committed to researching, experimenting and exploring.

Some students have difficulty in understanding the third sentence. One reason is the confusion between 'result in' and 'result from', without knowing which one refers to cause and which one to effect; the other is the unfamiliarity with '(be) committed to', which affects the comprehension of the following text. Obviously, small vocabulary forms the obstacle to understanding of the text. In teaching, apart from increasing students' reading amount, teachers can help students to enlarge vocabulary by specific context and impart some learning strategy, such as associative strategy, context strategy to learn and consolidate new words and language items to improve language level by applying language schema.

3.2 Application of Content Schema in Teaching College English Reading

Content schema functions in the following three phases in a reading class: pre-reading, while-reading and post-reading.

3.2.1 Pre-reading

In pre-reading, teachers can help to do some reading-related preparation, such as listing and explaining words, phrases and sentence patterns in the reading material. As we have mentioned above, language schema is a prerequisite for reading comprehension, but students may not understand what they are reading only with certain language schema. Students always complain that they can not figure out what the author is narrating even though they know each word in the reading material. We once tested the students with an article which Rumelhart(1981) used to his testees :

Business had been slow since the oil crisis. Nobody seemed to want anything really elegant any more. Suddenly the door opened and a well-dressed man entered the showroom floor. John put on his friendliest and most sincere expression and walked toward the man.

The students were required to tell John's occupation in this article. Most of them figured out that John was a salesman. As to the exact commodity he sold, few of them could get the answer. The reason is that oil crisis schema and car promoting schema do not exist in many Chinese students' mind, which results in their failure to infer the meaning of that paragraph. From this, we know that teachers can help students to establish specific content schema through providing background knowledge for students to predict correctly.

Prediction ability is an important skill for reading. No matter right or wrong the prediction is, it can help students get closer to the thesis of an article which is good for their understanding. Students can judge their prediction through reading. Practice tells us that reading with prediction would have better effect than those without.

The title of an article usually contains important information. Therefore, prediction can be based on it. Some students may feel hard at the beginning of training. It is suggested that teachers enlighten students with some questions about the title of the article. For example, when teaching Section A, Unit Two with the title "Environmental Protection throughout the World", we provide the title first and then let students predict content and thesis of the article through a pair discussion, and then exchange conclusion between pairs and present their final answer. Such interactive reading teaching can not only activate students' potential content schema, but also improve students' enthusiasm and interest which enable them move further to while-reading phase. When a teacher finds students have difficulty in discussion, the following questions can be provided for them:

- (1) What is environmental protection?
- (2) What do you think has happened to the environment throughout the world?
- (3) Why do we protect the environment?

Following title prediction, students are guided to predict possible words used in the article, and then check their prediction at while-reading phase. When students find it difficult to do so, teachers can provide some words and ask students to choose the possible ones to activate students' content schema and language schema.

Sometimes, students can not understand the title though they know every word. Thus, prediction based on the title is not unlikely to implement. The main reason is due to different culture and society background between countries. For example, when students are given the title "Green Bananas", most students would think that this article is about bananas because they do not know the sense of Green Bananas. In fact, they only need to know that "green" in English has the meaning of 'inexperience, newcomer' besides the color "green", and they could figure out the meaning of "Green Bananas". Another example is that with the title "All Greek to Me", teachers need to guide students to know that Greek is a language difficult to understand. Most students would understand the meaning. It is obvious that cultural difference brings students much confusion. Therefore, a teacher is suggested to grasp each opportunity to introduce and explain social and cultural background of different countries to enrich students' content schema.

3.2.2 While-reading

The while-reading phase, or the reading comprehension phase, is a phase for schema embodiment. After students know about the general meaning of an article, teachers are suggested not only to impart language knowledge, but also explain detailed content, especially the different custom and historical culture related to the article.

3.2.3 After-reading

By traditional teaching methodology, students would do some exercises such as multiple choice or cloze in after-reading, or some translation and story retelling. Practice shows that these methods are effective in training students' basic skills, but their interest is likely to be reduced. In order to stimulate their interest and consolidate schema, teachers can exert their imagination and creativity by providing colorful classroom activities to improve students' reading ability.

(1) Discussion

In this activity, students are divided into double, four or five-person groups. Pair groups are good to form a mutual reliable and mutual helpful relationship. An indispensable role is taken by each student during the interactive learning process. Students can share their experience, knowledge, interest and opinions related to learning material, or consolidate content schema by question and response form. In *New Horizon College English*, Comprehension of the Text after each text can be used as pair-discussion topic. The multi-person group (4-5 persons) is suitable for interactive learning, which is good to reduce students' mental stress, especially for lower level students. Students in such groups would like to express themselves in class due to relaxation. Teachers can also provide different subtitles for different groups. Thus, each group can discuss different parts of the text and then exchange among groups to consolidate schema.

(2) Role playing

Role playing can improve students' learning enthusiasm. Students are enthusiastic, active and creative in such activity. This way can be used in learning reading material reflecting foreign customs, such as the reading passage: "Rich Meeting His Future Mother-in-law" in Section B, Unit Three..

(3) Writing

After reading, teachers can have students rewrite, comment on or summarize the reading material, which can not only consolidate language schema, but also turn new knowledge into content schema.

3.3 Application of Form Schema in Teaching College English Reading

Different styles have different form structures. Therefore, understanding of style forms is usually good for students to understand an article. English text form has not yet been established in most students' mind due to the adoption of traditional teaching method which emphasizes word-by-word reading, sentence-to-sentence translating to know about the article thesis. Teachers are advised to guide students to read by applying text form in teaching reading and introduce several English text forms, explaining text form tendencies of different styles. In teaching, teachers can help students establish various style form schemas by consciously analyzing a text structure, instructing some continuous knowledge and skills of the article. When students see relative reading materials, certain form schema would be activated, which is good to improve their reading ability. Text Structure Analysis and Structured Writing in section A of each unit are effective means to guide students to build English form schema.

4. CONCLUSION

The authors believe that language schema, content schema and form schema are all very important to develop students' reading ability. When emphasizing imparting language knowledge, teachers are suggested to activate content schema in students' mind and help them to establish English form schema to improve students' reading ability, and lay a solid foundation for writing ability.

REFERENCES

Carrell P.L. (1983). *Schema Theory and ESL Reading Pedagogy* [J] *TESOL Quarterly* (12).

- Goodman K.S. (1971). *Psycholinguistic universals in the reading process* [A] In Pinsleur.P. and Quinn.T. (eds) *The Psychology of Second Language Learning* [C] CUP.
- Rumelhart D.E. (1977). *Toward an Interactive Model of Reading* [A]. in S.Donic(ed), *Attention and Performance VI* [M]. Hillsdale, HJ: Elbau.
- Smith, F. (1971). *Understanding Reading: A Psycholinguistic Analysis of Reading and Learning to Read* [M]. New York: Holt Rinehart and Winston.
- Smith, F. (1985). *Reading* [M].CUP. Cambridge. 2nd edition.