

Use of Schema Theory in the Teaching of English Reading Comprehension in Senior High School

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ABSTRACT

This paper examines the use of schema theory in enhancing English reading comprehension in senior high school students. Schema theory, a cognitive psychology framework, emphasizes that readers' prior knowledge and experiences play a crucial role in comprehending new information. This paper summarizes the basic viewpoints of schema theory and discusses its practical applications in English reading comprehension in senior high school. Research has shown that implementing schema theory not only benefits students' language skills but also fosters their critical thinking abilities. When students are able to connect new information with their existing schemas, they become more familiar with analyzing and interpreting complex texts. This theory encourages active engagement with the material and promotes a deeper level of comprehension. This paper also addresses challenges and solutions in implementing schema theory. By incorporating schema theory into reading classes, teachers can help students develop a deeper understanding of texts, improve their reading efficiency, and enhance their overall English proficiency.

KEYWORDS

High School English; Reading Comprehension; Schema Theory.

1. INTRODUCTION

Reading comprehension is a fundamental skill in English language learning, essential for academic success and everyday communication. However, many senior high school students struggle with this aspect of English learning due to various factors, including limited vocabulary, grammatical difficulties, and inadequate background knowledge. Traditional teaching methods, which emphasize sentence-based instruction, often fail to address these challenges effectively. This paper advocates the use of schema theory as a solution to these issues, exploring its potential in enhancing English reading comprehension in senior high school. We will discuss the theoretical basis, practical applications, and potential challenges and solutions in implementing this theory.

1.1. Background to the Research

English is a language subject, listening, speaking, reading and writing are essential skills. Reading is the basis of learning English; students need to read first in order to better understand. Therefore, teachers need to pay attention to improving students' reading ability and cultivating their reading skills. However, traditional English reading teaching mainly adopts the grammar translation method, paying more attention to the presentation, practice and teaching of grammar knowledge, as well as the translation of words, sentences and paragraphs, and relying on the mother tongue for teaching. In view of this problem, schema was put forward by the British psychologist, Frederic Charles Bartlett. According to his assumption of schema theory, a reader who wants to understand a text must have some related knowledge or experience which has been previously acquired, for the text only gives

directions for constructing the meaning but does not carry meaning in itself. Later, Rumelhart, an artificial intelligence expert, claimed that if readers use both bottom-up and top-down processes at the same time, they would reach the successful reading comprehension. Therefore, schemata play a vital role in reading comprehension. In order to make students have a good reading comprehension in their future study, the knowledge about schema theory and related reading skills should be taught to them by their teachers. Besides, the new teaching method also should be adopted positively by English teachers to improve their teaching.

1.2. Purpose and Significance of the Study

The main purpose of this study is to analyze the impact of schema theory-based instruction on students' reading comprehension abilities and evaluate the effectiveness of the instructional framework in terms of student outcomes and teacher perceptions. Schema theory considers that readers' prior knowledge and experience play a crucial role in their ability to comprehend and interpret new information. By incorporating schema theory into English reading instruction, educators aim to activate students' existing knowledge schemas and help them build new ones, thereby facilitating better comprehension of texts. The study is significant for several reasons. Firstly, reading comprehension is a critical skill for academic success and lifelong learning. By examining the effectiveness of schema theory in improving reading comprehension, this study can contribute to the development of more effective instructional strategies that help students develop these skills. Secondly, the findings of this study can inform the practice of educators in senior high schools, providing them with evidence-based strategies for improving English reading comprehension instruction. Finally, the study will contribute to the growing body of research on schema theory and its applications in education, providing valuable insights into the potential of this theoretical framework to improve learning outcomes.

2. THEORETICAL BASIS

Schemata provide readers with conceptual scaffolding to absorb textual information and help them facilitate reasoning and reconstruction. It can also enable them to search for information in memory orderly. This part provides a theoretical framework for this research, in which schema theory and constructivism theory are expounded with the purpose of applying schema theory to English reading teaching.

2.1. Schema Theory

Schema theory is a theory used by cognitive psychologists to explain mental processes. As early as 1781, the psychologist Kant proposed the concept of schema. He believes that the schema is the link between the concept and the perceived object, and the concept is meaningful only when it is connected with people's existing knowledge. Bartlett, an English psychologist, pointed out in his book *Remembering* that a schema is a reaction to or positive organization of past experience. In the 1970s, the American artificial intelligence expert Rumelhart developed the schema theory into a systematic and complete theory. The theory states that any linguistic material, whether spoken or written, has no meaning in itself; it only instructs the listener or reader how to recover or construct meaning based on their original knowledge. In other words, when people understand new things, they need to relate new things to known concepts and past experiences.

There are three types of schemas: language schema, content schema, and formal schema. Language schema refers to the reader's mastery of the original language, such as vocabulary and grammar knowledge. Content schema, also known as topic schema, refers to the reader's understanding of the topic and content category of the article, including the relevant cultural connotation, customs and

other aspects of knowledge. The formal diagram refers to the reader's understanding of the genre, logical structure, and rhetoric of the text.

The schema has three characteristics: growability, adjustability, and reconfigurability. When people come into contact with new things, they always unconsciously compare it with their original related or similar schemas, and adjust it, so as to constantly modify and improve the existing schemas. If we don't already have a related or similar schema in mind, we will actively construct it.

2.2. Constructivism Theory

The earliest proposer of constructivism theory can be traced back to Piaget in Switzerland, who believed that knowledge is neither from the subject nor from the object, but is constructed in the interaction process between the subject and the object. He believes that the essence of learning is the process of mutual construction of subject and object. On the basis of Piaget's theory, Kohlberg made further research on the nature of cognitive structure and the development conditions of cognitive structure. Sternberg and Katz emphasized the key role of individual initiative in the process of constructing cognitive structure, and seriously explored how to exert individual initiative in cognitive process. Vygotsky, on the other hand, proposed the theory of cultural and historical development, which emphasized the role of the socio-cultural and historical background of learners in the cognitive process, and proposed the theory of the "zone of proximal development". Vygotsky believes that individual learning is carried out in a certain historical, social and cultural context. Society can play an important role in supporting and promoting individual learning and development. Constructivism theory is rich in content, with many schools and different theoretical tendencies, but they all firmly believe that knowledge is the result of active construction by cognitive subjects, and learning is a process of meaning construction.

The basic viewpoints of constructivism theory mainly include knowledge view, learning view and teaching view.

Constructivism's view of knowledge holds that knowledge is not an accurate representation of reality, but an explanation or hypothesis of the objective world. Nor does knowledge provide an infallible summary of the laws of the world, a practical method for any activity or problem solving. Knowledge is the product of contextualization and individuation. The real understanding of knowledge can only be constructed by learners themselves based on their own experience background, and depends on the learning process in a specific situation.

Constructivism learning view holds that the essence of human cognition is the process of "construction" of the subject. All knowledge is the result of the subject's own cognitive activity. The subject constructs his own understanding through his own experience. Therefore, learning is not a process in which teachers simply transfer knowledge to students, but a process in which students construct knowledge themselves. Students do not simply passively receive information, but actively construct the meaning of knowledge, which cannot be replaced by others.

Constructivism teaching view holds that teaching should not ignore students' experience, but should take students' existing knowledge experience as the growth point of new knowledge, and guide students to "grow" new knowledge experience from the original knowledge experience. A teacher is not simply a presenter or a transmitter of knowledge, he should pay attention to students' own understanding of various phenomena and listen to their views. Teachers should be the facilitators, collaborators and helpers of students' active meaning construction, as well as the organizers, guides and coordinators of the whole teaching process.

3. PRACTICAL APPLICATIONS OF SCHEMA THEORY IN TEACHING READING COMPREHENSION

Schema Theory is a cognitive framework that emphasizes the role of prior knowledge and experience in understanding new information. In teaching reading comprehension, Schema Theory can be applied through several practical steps:

Activating Prior Knowledge: Before introducing new texts, teachers should activate students' existing schemata by discussing topics related to the reading material. This can be done through brainstorming sessions, mind maps, or asking questions about students' experiences related to the topic.

Building Background Knowledge: If students lack the necessary background knowledge, teachers should provide it before reading. This could involve giving short lectures, showing videos, or providing graphic organizers that fill in the gaps in students' schemata.

Pre-Reading Strategies: Encourage students to make predictions about the text based on the title, pictures, and any other clues available. This helps them engage with the text and prepares their schema for assimilation of new information.

Guided Reading: During reading, teachers can stop at key points to discuss how the information relates to what students already know, helping them to integrate new information into their schemata.

Post-Reading Discussions: After reading, facilitate discussions where students reflect on how the new information connects to their existing knowledge. This reinforces the new schemata and helps with long-term retention.

Vocabulary Development: Teach key vocabulary words before, during, and after reading to ensure that students have the language tools necessary to understand and discuss the text.

Scaffolding: For complex texts, provide scaffolds such as graphic organizers, summaries, or study guides to support comprehension and help students build more sophisticated schemata.

Assessment and Feedback: Use formative assessments to check students' understanding and provide feedback that helps them refine their schemata. Summative assessments can evaluate how well students have integrated new information into their long-term knowledge base.

By following these steps, educators can effectively use Schema Theory to enhance students' reading comprehension skills, making learning more meaningful and accessible.

4. CHALLENGES AND SOLUTIONS IN IMPLEMENTING SCHEMA THEORY

While Schema Theory offers valuable insights for teaching reading comprehension, educators may face several challenges when implementing this approach. These challenges include diverse backgrounds and schemata, limited time and resources, and assessing prior knowledge. Understanding these challenges and exploring practical solutions can help teachers effectively apply Schema Theory in their classrooms.

In a diverse classroom, students come with varying levels of prior knowledge and different cultural backgrounds. This diversity can make it difficult for teachers to select texts and design activities that are relevant and engaging for all students. Students may have different levels of familiarity with the content, which can impact their ability to understand and engage with the material. To address this challenge, teachers can use differentiated instruction, providing various texts and activities that cater to different interests and levels of background knowledge. Differentiated instruction involves tailoring teaching methods and materials to meet the diverse needs of students. Additionally,

collaborative learning activities can allow students to share their diverse perspectives and experiences, enriching the learning experience for all. Group work and peer discussions enable students to learn from each other, helping to bridge gaps in knowledge and understanding. By leveraging the diverse backgrounds of students, teachers can create a more inclusive and dynamic learning environment.

Teachers often face constraints in terms of time and resources, which can limit their ability to implement pre-reading activities and provide extensive background information. With packed curricula and standardized testing requirements, finding time for additional activities can be challenging. To mitigate this challenge, teachers can integrate Schema Theory-based activities into their regular lesson plans, using brief and targeted interventions. For example, a quick brainstorming session or a short video clip can effectively activate prior knowledge without taking up too much class time. These activities can be seamlessly incorporated into the beginning of a lesson to set the stage for new content.

Assessing students' prior knowledge can be challenging, especially in large classes. However, this is crucial for designing effective pre-reading activities and selecting appropriate texts. Without an understanding of students' existing schemata, it can be difficult to tailor instruction to meet their needs. Teachers can use various formative assessment techniques to gauge students' existing schemata. These techniques can include quizzes, questionnaires, and informal discussions. For instance, teachers can start a lesson with a quick quiz or a KWL chart to assess what students already know about a topic and what they are interested in learning. Regular formative assessments can also help teachers monitor students' progress and adjust their teaching strategies accordingly.

In addition to formative assessments, diagnostic assessments can be used at the beginning of a unit or course to evaluate students' prior knowledge and skills. These assessments can provide a baseline understanding of students' schemata and help teachers plan their instruction more effectively. Diagnostic assessments can include pre-tests, surveys, or initial writing assignments that reveal students' knowledge and misconceptions about a topic.

Another challenge in implementing Schema Theory is ensuring that the texts and materials used are culturally relevant and sensitive to all students. Texts that do not resonate with students' cultural backgrounds or experiences can hinder their engagement and comprehension. Culturally responsive teaching involves selecting texts and designing activities that reflect the diverse cultural backgrounds of students. Teachers can include literature and materials that represent various cultures, perspectives, and experiences. This not only validates students' backgrounds but also broadens their understanding of the world. Engaging students in discussions about their cultural experiences and how these relate to the texts being studied can enhance their connection to the material. Teachers can also invite students to share stories, traditions, and perspectives from their own cultures, creating a more inclusive and respectful classroom environment.

5. CONCLUSION

Schema Theory provides a valuable framework for understanding and enhancing reading comprehension in senior high school students. By activating and building on students' prior knowledge, using graphic organizers, scaffolding, and encouraging inference and prediction, teachers can help students develop a deeper understanding of texts. While there are challenges in implementing this approach, strategies such as differentiated instruction, integrating activities into regular lessons, using formative and diagnostic assessments, and employing culturally responsive teaching can help overcome these obstacles. Ultimately, the use of Schema Theory in teaching English reading comprehension can lead to more engaged, motivated, and proficient readers. By recognizing and addressing the diverse needs of students, educators can create a more effective and inclusive learning environment that fosters a lifelong love of reading and learning.

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