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The Application of Question Chain in Senior High School English Reading Instruction

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Abstract

Questioning is an important way of interaction between teacher and students. It's also one of the methods for teachers to focus the students' attention and check their understanding for what they have learned. In reading class, English teachers usually adopt the teaching strategy of providing students with a series of questions to guide them understand the reading materials. However, most of these question designs are characterized by fragmentation and superficiality, which runs counter to the cultivation of students' thinking ability as advocated in the new curriculum standards for senior high school English. This paper aims to overcome these disadvantages of traditional reading instruction through the design of question chain, to help students to understand the reading text deeply and develop their thinking quality like critical thinking and creative thinking.

Keywords

Question Chain; Senior High School English; Reading Instruction

1. Introduction

As a widely used international lingua franca in today's world, English serves as a vital communication tool for international exchange and cooperation as well as a significant carrier of thoughts and cultures (Ministry of Education of the People's Republic of China, 2020). In view of its core role as a vehicle in international communication and the dissemination of ideas, China has attached greater importance to the construction of English as a discipline. English learning can be generally categorized into two dimensions: language input and language output. Reading, as one of the pathways of language input, enables students to accumulate vocabulary, phrases, and sentence patterns, become familiar with authentic English expressions, and thereby enhance their language competence. Furthermore, the process of analyzing texts during reading also serves to train students' thinking abilities. The new curriculum standards stresses that the goal of English teaching is to cultivate students' core competencies, namely language competence, learning

ability, thinking quality, and cultural awareness. It follows that reading occupies a pivotal position in cultivating students' core competencies. Increasing the emphasis on reading instruction and improving its efficiency have become one of the essential teaching tasks for teachers. Professor Wang (2006) points out that questioning is one of the important ways for teachers to conduct classroom management and assess students' learning outcomes. In the practice of reading instruction, teachers commonly use questioning as an assessment tool to monitor students' understanding of the text and their construction of meaning.

However, the questions teachers pose in reading instruction are mostly characterized by fragmentation and superficiality, lacking a linguistic context and a core thread. Students' understanding of the text largely remains at the level of retrieving certain detailed information, without an overall grasp of the text structure from a macro perspective. The purpose of reading instruction is to train students' reading strategies and improve their reading ability, rather than merely testing their understanding of the details of a particular text. Marxist philosophy advocates that consciousness plays a role in regulating human behavior and physiological activities. Accordingly, teachers' understanding of reading directly influences the design of classroom questions.

In response to the above problems, this thesis aims to improve the design of questions in current reading instruction by integrating question chain throughout the whole teaching procedure. This approach encourages students to grasp textual content and structure holistically, and recognize that different sections of a passage are closely interconnected rather than isolated. By maximizing the merits of questioning, teachers can motivate students to engage actively in classroom interaction, enabling them to think, analyze and solve problems purposefully with guiding questions during reading. This process consequently improves students' reading comprehension and reading efficiency. Meanwhile, it stimulates students' intellectual vitality, fosters their critical thinking, creative thinking and logical thinking capabilities, and ultimately improves their thinking quality. Furthermore, it endeavors to implement the students' subject position in learning emphasized by the new curriculum standards, cultivate students' autonomous learning ability, and lay a foundation for their lifelong learning.

2. Literature Review

2.1. Definition

Question chain refers to a series of systematic, hierarchical, relatively independent yet interrelated questions that teachers transform from textbook knowledge in accordance with teaching objectives and teaching content, and based on students' existing knowledge and experience (Zhang, 2025). Question chain is not a simple patchwork or pile-up of several questions, but a collection of questions with a central focus and a clear sequence, in which the questions are both independent and

interconnected, characterized by wholeness, heuristic nature, and logical coherence. The design of a question chain should follow the principles below. First, the logical coherence between questions must be ensured. The questions are closely connected. For instance, the preceding question serves as the foundation for the following one, while the latter deepens and extends the previous one. Second, guarantee alignment between question content and teaching objectives. Serving as both the starting point and ultimate destination of teaching, teaching objectives are of indispensable significance. They function as the fundamental basis on which teachers organize diverse instructional activities and design every segment of classroom procedures (Yu, 2021). Teachers' classroom instruction should be carried out around the pre-established teaching objectives.

The new curriculum standards advocates that teachers adhere to the activity-based approach to English learning, which encompasses three aspects: learning and understanding, applying and practicing, and transferring and creating. The setting of teaching objectives should also follow this sequence, progressing from the superficial to the profound and advancing step by step. Therefore, the arrangement of questions in a question chain should follow the corresponding principle: moving from easy to difficult and gradually deepening, which is also more consistent with students' cognitive patterns. Third, attention should be paid to the alignment between the questions and the students (Yu, 2021). Students are the subjects of learning. The quality of question design is closely related to students' classroom interaction. While there are various measures to encourage students to participate actively in classroom teaching, from the perspective of the question chain, the design of questions demands two key considerations. For one thing, questions need to match students' current cognitive levels, facilitating their further development based on existing competence and helping them reach new zones of proximal development. For another, questions should connect with students' daily lives. Question contexts ought to be constructed as close to students' real-life situations as possible to arouse their desire for thinking and inquiry.

2.2. Theoretical Foundations

2.2.1. Bloom's Taxonomy of Educational Objectives

In 1956, Benjamin Bloom, an American educational psychologist, published Taxonomy of Educational Objectives: Handbook 1, The Cognitive Domain, putting forward the Taxonomy of Educational Objectives (Zhang, 2025). This theory classifies educational objectives into six hierarchical cognitive levels: knowledge, comprehension, application, analysis, synthesis and evaluation. The classification is based on the gradual transition of cognitive activities from lower levels to higher levels. Knowledge refers to the memorization and recall of specific facts, concepts and principles. For example, in the process of English learning, students need to memorize a certain number of words, phrases, grammatical rules, and so forth.

Comprehension denotes learners' ability to interpret the implied meaning of information. A typical example is identifying the information the author intends to emphasize through the passive voice structure. Application means the capacity to transfer acquired knowledge to novel contexts. Analysis involves distinguishing and identifying logical relationships between different components of a text or task. Synthesis refers to integrating discrete pieces of knowledge to solve problems in a creative manner. Evaluation stands for making reasoned judgments based on established criteria.

The sequencing of these six levels of objectives aligns with the characteristic that the design of questions in a question chain should progress from easy to difficult. Teachers can gauge the extent to which instructional objectives have been achieved by examining students' responses to classroom questions. Meanwhile, instructors may design matching questions corresponding to each tier of cognitive objectives, ensuring that the sequence of questions advances progressively from basic to sophisticated cognitive demands.

2.2.2. Constructivist Theory

In the 1960s, the distinguished Swiss psychologist Piaget proposed constructivist theory. Constructivism emphasizes student-centeredness, which aligns with the new curriculum standards' assertion that students are the subjects of learning. The theory consists of three components: the view of knowledge, the view of students, and the view of learning. Among them, the view of knowledge stresses that knowledge is not "objective truth," but rather "interpretations and hypotheses," characterized by subjectivity and contextuality. The view of students argues that students do not enter the classroom with empty heads. Dialectical materialist epistemology states that human beings possess subjective initiative. Therefore, the teacher's task in teaching is to create an appropriate learning environment, provide corresponding learning resources, and guide students to think. The purpose of posing a series of questions in the question chain is precisely to stimulate their enthusiasm for thinking. As for the view of learning, constructivism rejects cramming instruction delivered by teachers. Instead, learning is defined as an active construction process built upon learners' prior knowledge and experience, which highlights the primacy of learner initiative. Several strategies can effectively mobilize students' active engagement in learning: posing guiding questions to prompt independent thinking rather than offering answers directly, reserving sufficient room for students' contemplation, and designing question contexts closely connected to students' daily lives.

2.3. Related Studies at Home and Abroad

Foreign scholars' researches on question chain mainly focuses on question formulation and problem-solving, while studies concerning the practical

implementation of this model in real classroom instruction remain insufficient. The term “question chain” evolved from the theoretical framework of question-based teaching, a pedagogical approach with a long research history abroad. The “art of midwifery” (the Socratic method) proposed by the famous Greek philosopher Socrates is considered the origin of this question-based teaching model (Zhang, 2025). This method consists of four procedures: irony, midwifery, induction and definition. By posing successive questions, teachers guide students to reflect and prompt them to derive solutions on their own.

The distinguished American psychologist and educator, Dewey (1916) proposed the five-step reflective thinking model for problem-solving, which represented a further advancement of question-based teaching. The main steps of this five-step teaching method include: creating a situation and discovering a problem, clarifying and defining the problem, proposing hypotheses and designing a plan, verifying the hypotheses, and drawing a conclusion. There exists substantial overlap between question chain and the question-based teaching model. Duch (1996) argued that question-based pedagogy motivates students to resolve real-life dilemmas independently. During this process, it not only facilitates students’ cooperative learning but also, to a certain extent, mobilizes their critical thinking and problem analysis abilities, guiding students to use appropriate learning resources to find answers. This model helps cultivate students into autonomous learners. Therefore, question chain can also play similar functions and roles in students’ learning.

Over the past decade, research on question chain by domestic scholars has shown a remarkable growth trend, with quite abundant relevant results. A search on CNKI with question chain as the subject term yields more than 7,000 results. Among them, academic research on question chain increased substantially in 2023 and 2024. The classification and design principles of question chain have consistently been a research focus. Sun and Qu (2025) proposed that the design principles of question chain for history in secondary vocational schools include three aspects. More specifically, ideological nature, appropriateness, and logicality. Wang (2025) hold the idea that physics experiments should follow the principles of focus and appropriateness. As different disciplines have different characteristics and advantages, applying question chain in the classroom requires teachers to adjust the design principles on the basis of fully considering the features of the subjects they teach. Current domestic research on question chain within English education mainly centers on two dimensions: deep learning and the cultivation of students’ thinking quality, covering a broad spectrum of educational stages including primary, secondary and tertiary education. Nevertheless, studies exploring the implementation of question chains in senior high school English reading instruction remain relatively scarce.

To sum up, research abroad on the application of question chain in actual teaching is insufficient, with a main focus on the theoretical research level. Question chain has

been a research hotspot in China in recent years, covering a broad scope that includes various educational stages and subjects. However, research on the application of question chain in English reading instruction at the senior high school level is scant. This thesis aims, through a systematic review of relevant literature, to propose specific implementation steps for the application of question chain in senior high school English reading instruction, and to provide pedagogical insights for the teaching of front-line English teachers.

3. Design Strategies of Question Chain in Senior High School English Reading Instruction

3.1. Analyzing the learning situation, studying the teaching materials, and devising the question chain (Huang, 2025)

Students serve as both the principal subjects of learning and the recipients of instruction. The primary criterion for measuring instructional effectiveness lies in whether teaching can advance students' development. Students are in a dynamic developmental process. Teachers need to assess learners' current proficiency levels before instructional design. The design of teaching content shall be grounded in students' present developmental stage while targeting their potential developmental space. It is essential to ensure the accessibility of the content while endowing it with a certain degree of challenge. According to the new curriculum standards, teachers should attach importance to students' affective experience throughout instruction, enabling learners to attain a sense of achievement so that they can be more confident in English learning. Instructional design based on Vygotsky's theory of the "zone of proximal development" not only provides students with the opportunity to gain a sense of achievement in learning but also offers the possibility for their development.

Textbooks act as the fundamental foundation and primary instructional resources for teachers to organize classroom activities. On the one hand, educators need to conduct an in-depth analysis of textbooks prior to designing lessons to grasp the core content and organizational framework of each unit. Besides, instructional design shall be closely integrated with textbook content. On the other hand, as a type of teaching resource, textbooks do not possess a rigid internal content structure. Teacher ought to exert their subjective initiative fully, adjusting or even replacing unit content in light of the characteristics of their own class and their professional judgment. To sum up, the design of question chain should be conceived from two dimensions: student characteristics and textbook content.

3.2. Designing Question Chain Based on Text Structure

English discourse types include spoken discourse and written discourse. This thesis focuses on reading, that is, written discourse. A salient feature of written discourse is its diversity of genres, specifically including narratives, argumentative essays,

expository essays, and practical writing. Texts of different genres differ in their structural organization. On the basis of the previous step of studying the discourse, teachers need to design the question chain based on the textual structure. For example, in the case of a narrative, questions can be designed based on the 4Ws (Huang, 2025), unfolding around the main threads of time (when), place (where), characters (who), and event (what). In this way, the content of the text is connected in the form of questions, presenting the text as a whole rather than in fragmented pieces to the students, and enabling them to grasp the development of events from a macro perspective. For an argumentative essay, the question chain can be designed from two aspects: argument and evidence. Within the evidence module, questions can be designed around facts and examples in the text to guide students' attention to details. In summary, teachers need to flexibly handle reading materials and optimize question design according to the characteristics of the text.

Furthermore, Wang (2006) believes that novel things tend to arouse students' interest more. Therefore, how to innovate in instructional design has become an issue that teachers need to consider. With continuously increasing investment in scientific and technological innovation, substantial progress has been made in technological development across multiple dimensions. Technological achievements have also promoted the development of education sector. For example, the use of Seewo interactive whiteboards has enriched teachers' teaching forms, reduced their workload, and provided technical support for diverse classroom activities. Taking vocabulary in English teaching as an example, unlike the traditional method where teachers check students' word memorization through dictation, small games such as word matching and categorization on the Seewo are more effective in attracting students' interest and alleviating their anxiety about English learning.

The development of the times imposes new requirements on teachers. Teachers' professional development includes not only the development of professional knowledge and skills and the improvement of research capabilities, but also the enhancement of information technology literacy. When designing question chain, teachers should adhere to diversification, constantly innovate, and combine question presentation with modern technology to enliven the classroom atmosphere and increase students' classroom participation.

4. Specific Steps for Implementing Question Chain in Senior High School English Reading Instruction

A common teaching model for reading is the PWP model, which divides the entire reading instruction process into three stages: pre-reading, while-reading, and post-reading. The following will introduce the specific implementation steps of question chain in classroom teaching from these three stages respectively.

(1) Pre-reading

There are many types of pre-reading activities in English, such as predicting the

content of the reading material based on the title, pictures, or key words, introducing background information related to the text to students and teaching new words. The main purpose of this series of activities is to activate students' existing schema, so that they are well prepared physically, psychologically, and thematically for the subsequent reading activities (Wang, 2006). Although lead-in is only a small part of the whole lesson, usually lasting only a few minutes, it is a crucial link in English reading instruction and should not be neglected by teachers. An engaging lead-in can effectively stimulate students' desire for exploration and their enthusiasm for learning (Yang, 2025). Teachers can use pictures, real objects, videos, and other multimedia devices to conduct the lead-in while setting up a question chain to provoke students' thinking. It aims to lay the foundation for the learning activities in the while-reading stage. Take the article "My First Day at Senior High" published by Foreign Language Teaching and Research Press, as an example. This article mainly introduces Meng Hao's school experience and his emotional changes on the first day of senior high school. In the lead-in stage, the teacher can pose the following questions:

Q1: Do you still remember your first day at senior high?

Q2: What did you experience on that day?

Q3: What were your feelings about your first day at senior high school?

Students have just entered senior high school and have experienced senior high school life for the first time. The scenarios created by these questions are those they have personally experienced. Moreover, these three questions are open questions with no fixed answers, allowing students to speak freely, and the classroom atmosphere is relaxed.

(2) While-reading

The while-reading stage includes two parts: skimming and scanning. The purpose of skimming is to enable students to grasp the main idea of the text, while scanning is intended to assess their command of the details. They are both important reading skills. The goal of a teacher's reading instruction is not to check students' understanding of a particular text, but to use the reading material as an example to guide students in acquiring reading strategies and improving their reading ability. Therefore, the design of the question chain must also incorporate the training of reading skills. Teachers should guide students to analyze the content and structure of the text in depth, understand its logic, and organize well-sequenced question chain to enhance students' reading efficiency and help them construct a complete knowledge framework. As mentioned earlier, teachers should proceed in a targeted manner according to the text genre. Take the text "Like Father, Like Son" as an example. This text mainly tells a story in which the son and the father have a serious disagreement over the son's future career plan due to their different standpoints and views, and the conflict is eventually resolved smoothly with the grandfather's mediation. The design of the question chain during this stage can be developed from

the following aspects:

Q1: Why did the son argue with his father?

Q2: Who helped stop the argument?

Q3: What can you learn from this passage?

Among these, Q1, Q2, and Q3 can each be further broken down into several lower-order questions. Through the hierarchical progression of questions, students are guided to think deeply step by step, thereby gaining a clearer understanding of how the events unfold. For example, Q1 can also include the following questions: "What job does the son want to do in the future?" "What career does the father want his son to pursue in the future?" and "Why does the father want his son to become a lawyer?" Answering these questions requires students to find more detailed information in the text, which provides support for answering Q1.

At this stage, teachers need to pay attention to ensuring that the questions focus on the key content of the text rather than on trivial details. It is not a case of the more questions, the better. On the contrary, an excessive number of questions may aggravate students' boredom and reduce their participation. Therefore, teachers need to handle this proportion appropriately. Furthermore, since students' English proficiency levels are differentiated and differences exist among them, teachers can use multiple forms of expression when presenting questions. Only classroom instructions that students can understand are effective. Meanwhile, teachers can also guide students to organize the text content by using mind maps, tables, and other forms to make it more intuitive and vivid.

(3) Post-reading

The activities at the post-reading stage mainly consist of two parts: summary and production. When summarizing, the teacher can present the questions from the while-reading stage to the students once again, providing them with cues for reviewing what they have learned. In language production activities, the teacher can also stimulate students' thinking by posing questions to offer directional guidance for their language output. Still taking the text "Like Father, Like Son" as an example, the teacher can set the following questions for the production activity:

Q1: Did you have similar conflicts with your families?

Q2: What caused this kind of conflict?

Q3: How did you solve it?

When necessary, the teacher can also provide students with some words, phrases, and sentence patterns so that they can express fluently and accurately. Teacher feedback is one of the key links in instruction. A common problem in English teaching is that students are reluctant to speak English for fearing of making mistakes. Compared with the previous two stages, the post-reading stage places greater emphasis on the coherence and fluency of expression and the richness of content. At this stage, the teacher should give students positive feedback as much as possible, encourage them to express their views boldly, and offer verbal praise or

even material rewards to help them build confidence in English learning. Even if students make errors in the production process, the teacher should weigh whether to correct them according to the purpose of the task. There are also various ways of error correction. Generally speaking, self-correction and peer correction are preferable to teacher correction, so as to protect students' self-esteem and self-confidence.

5. Challenges in the Application of Question Chain

5.1. High Demands on Teachers

Teachers are the organizers and managers of educational and teaching activities. The application of question chain requires teachers to design a series of hierarchical questions that focus on the key content of the text, based on students' language proficiency and the reading text. Then, during the reading process, they must also manage the teaching pace and classroom management effectively to ensure the smooth implementation of teaching activities. This means that teachers need to spend more time studying the discourse and carry out targeted design according to the characteristics of different texts. What's more, teachers should constantly attend to students' development, assess their language levels, and continuously adjust the vocabulary, phrases so that the wording of the questions matches students' language ability. It means that teachers need to invest more energy in their students. However, front-line English teachers often undertake the teaching tasks of multiple classes with a large number of students, making it unrealistic to constantly follow the dynamic development of every student. Secondly, apart from teaching tasks, teachers also face other non-teaching tasks such as collective lesson preparation and training. Their time and energy are limited. Furthermore, many teachers still hold misconceptions about the model, believing that it is merely a simple accumulation of questions. In actual teaching, their misunderstanding can lead to problems such as an excessive number of questions, exceeding students' receptive levels.

5.2. Constraints Imposed by Students' Language Proficiency

The question chain is an ideal teaching model that aims to stimulate students' thinking, encourage them to think actively, and cultivate their thinking quality through questioning. In this model, the teacher acts as a guide, leading students to complete the task of text reading, which places relatively high demands on students' autonomous learning ability. However, when students hold a negative attitude towards the educational process or the questions posed, teaching activities are difficult to carry out smoothly and teaching tasks cannot be completed. In addition, the characteristics of the class-based teaching system mean that the teaching content and methods are determined according to the language proficiency of the majority of students. For students whose language ability falls below the class average, it is extremely difficult to successfully find the answers to all the questions

in the question chain in class, which can cause them to fall behind the teaching pace and undermine their confidence.

5.3. Time Limited

Students at the senior high school study a wide range of subjects, of which English is only one. It means that the time for English class is limited. English learning includes the acquisition of language knowledge and the training of language skills. Reading is only one of the language skills. Compared with other teaching methods, guiding students to complete reading tasks in the form of question chain takes more time, and teaching efficiency can't be guaranteed. Influenced by the washback effect of the college entrance examination, pursuing high scores has become the main teaching task of schools, and teachers are more inclined to spend precious time on drilling exercises for students rather than on improving their comprehensive abilities.

6. Conclusion

Applying question chain to senior high school English reading instruction not only embodies the requirement of cultivating students' thinking quality, but also practices the activity-based approach to learning. At the same time, by conducting teaching activities centered on questions, it adheres to students' subject position in learning and emphasizes the cultivation of their autonomous learning ability. However, the question chain teaching model also faces difficulties in practice, such as increasing teachers' teaching burden and being time-consuming. How to overcome these difficulties is a question that English teachers need to consider. Meanwhile, continuously improving one's professional competence and pursuing professional development are important criteria for measuring a good teacher. Teachers should keep learning, actively participate in training, enhance their own quality and classroom management ability.

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