

The lesson design of "problem chain" in junior high school English reading teaching based on the cultivation of thinking quality--Take the eighth grade textbook of People's Education Press as an example. Unit2 What Do No. 5 High School Students Do in Their Free Time?

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ABSTRACT

The "Compulsory Education English Curriculum Standards" proposes core competencies in the English subject, clearly stating that English teaching should cultivate these core competencies, with particular emphasis on fostering students' thinking qualities. English reading classes are the primary type of class in junior high school English learning, and it is crucial to focus on cultivating students' thinking qualities during English reading instruction. Problem chains are one effective method for developing students' thinking qualities. Therefore, this paper, based on Bloom's Taxonomy of Educational Objectives, integrates problem chains throughout the entire process of reading instruction, using the example of Unit2 What Do No. 5 High School Students Do in Their Free Time? from the People's Education Press Grade 8 textbook as a lesson design, aiming to promote the development of students' thinking qualities.

KEYWORDS

thinking quality; problem chain; English reading teaching; lesson design

1 Introduction

Thinking quality is a particularly significant aspect of the core competencies in English education and also one of the dimensions most closely related to the individual development of students' core competencies. Thinking quality shows how a person thinks while learning, which comes out in ways like analyzing, classifying, generalizing, judging, and synthesizing, and it reflects their skills in logic, critical thinking, and creativity. Classroom teaching is a crucial method for fostering students' cognitive activities; English reading instruction not only promotes the development of language skills but is also a vital component in cultivating students' thinking qualities. The problem chain plays a vital role in developing students' thinking qualities. Integrating the problem chain with English reading instruction can effectively enhance students' thinking qualities. This article uses the example of Unit2 What Do No. 5 High School Students Do in Their Free Time?, from the People's Education Press Grade 8 textbook, based on Bloom's Taxonomy of Educational Objectives, to design a series of problem chains in reading instruction. The approach provides practical experience for improving the level of English reading instruction and has practical significance for promoting the development of students' thinking qualities.

2 Meaning and types of problem chain

2.1 The meaning of problem chain

One common teaching strategy for teachers to guide students in understanding text content and cultivating their thinking qualities is the question chain. Currently, a widely accepted definition of the question chain comes from Wang Houxiong's proposal in 2010: the question chain is based on the teaching objectives and content, combined with students' existing experiences or knowledge, to address potential questions that may arise during the learning process, transforming the knowledge in the textbook into a series of layered and systematic teaching questions^[1].

2.2 Types of problem chains

There are three types of question chains in English reading class: the introductory question chain, the progressive question chain, and the exploratory question chain.

The introductory question chain is generally used in the pre-reading or introduction phase. The introductory question chain is a series of questions designed by teachers to introduce new content, activate students' existing knowledge and experience, and connect new and old knowledge with purpose and planning. The primary goal of the introductory question chain is to spark students' interest in reading, encourage them to be willing to learn new concepts, and lay the

foundation for subsequent teaching. Therefore, the introductory question chain typically has situational, engaging, and practicals^[2].

Progressive question chains are generally used in the reading phase of lessons to help students understand the details of the text. The design of progressive question chains should align with students' cognitive development, progress from easy to difficult, and also follow the logical sequence of the reading material, moving from simple to complex. In English reading instruction, progressive question chains are typically designed based on the relationships between paragraphs and sentences. Therefore, progressive question chains generally possess hierarchy, logic, and focus.

Inquiry-based question chains are typically used in the post-reading phase of English reading classes. Inquiry-based question chains are designed to foster students' innovative and investigative skills^[3]. In English reading instruction, inquiry-based question chains generally inspire active thinking and bold conjectures, training students' cognitive abilities and transfer innovation capabilities. They are also the most effective question chains for developing higher-order thinking skills. Therefore, inquiry-based question chains generally possess openness, evaluative nature, and summarization.

3 Theoretical basis

American educational psychologist Bloom systematically expounded on the six levels of thinking in his published article "Taxonomy of Educational Objectives: Cognitive Domain": knowledge, comprehension, application, analysis, synthesis, and evaluation^[4]. As education continued to evolve, student Anderson revised this goal classification, transforming the original system into a two-dimensional framework of "knowledge" and "cognitive processes"^[5]. The new version of Bloom's Taxonomy divides cognitive levels into memory, comprehension, application, analysis, evaluation, and creation.

The memory level involves the learning of language knowledge; the comprehension level pertains to the extraction and understanding of textual information; the application level refers to teachers guiding students to connect what they have learned with their real lives, internalizing new knowledge; the analysis level promotes open communication and intellectual exchange among students, where teachers can design open-ended questions to encourage active participation in class; and the evaluation level involves teachers guiding students to explore and evaluate the viewpoints of characters or authors based on their existing knowledge and experience, fostering personal cognitive development. The creation level aims to guide students in innovatively applying and transferring knowledge from texts.

4 The key points of reading class problem chain design

In the problem chain, whether it is the main issue or sub-issues, they should all have clear directionality, pointing to the central idea of the reading text. In reading instruction, determining the problem chain should be based on the theme of the text, closely focusing on the core content to gradually deepen students' understanding of the text and guide them to grasp the hidden educational significance behind the text. To ensure that the designed problem chain has clear directionality, teachers should thoroughly study the text, determine its theme and central idea, accurately identify the key points and difficulties, and avoid issues lacking specificity. They should design a clear and well-defined problem chain with precise instructions.

4.1 Close connection

In the chain of questions, the preceding and following questions should maintain their independence while also being interconnected. They must have both internal logic and distinctiveness, forming a cohesive system. When designing the question chain, teachers should consider the relationships between paragraphs and sentences within the text, ensuring that the questions are logically designed to create a tightly connected system.

4.2 Reasonable hierarchy

Hierarchical refers to the design of problem chains in reading instruction, which should progress from simple to complex, from straightforward to difficult, and from what students already know to what they do not^[6]. To foster the development of students' thinking qualities, the design of problem chains should also align with Bloom's Taxonomy of Educational Objectives, transitioning from lower-order to higher-order thinking skills.

4.3 Student subjectivity

In reading instruction, the main subjects of the text are the students. The design of the question chain should focus on

the students' subjectivity, putting them at the center. It should align with their existing knowledge and development levels while also designing questions that fit within their latest developmental zone ^[7]. When designing the question chain, teachers should also ensure that the questions can spark students' interest and choose appropriate times to pose them, encouraging active student participation in class.

5 The design of problem chain lesson based on cultivating thinking quality in junior high school reading teaching

5.1 Read the text

This text falls under the sub-theme of "Life and Learning" within the broader theme of "People and Self." The content aims to enrich students' lives, self-awareness, self-management, and personal growth. We can analyze the article using the "what," "why," and "how" discourse structures. First is "what": This article discusses various ways of relaxing through physical exercise. Next is "why": It showcases the frequency of various extracurricular activities among students at No. 5 High School. Through data, it prompts students to reflect on their extracurricular activity patterns, recognizing areas for improvement, and conveys the idea of a healthy lifestyle. Finally, it is "how": This article serves as a survey report that presents the extracurricular activity patterns of students at No. 5 High School, helping them learn how to manage their free time effectively.

5.2 Problem chain design

Based on the "3P" teaching mode of reading before, during and after reading, this study explores how to improve students' interest in English reading, help students understand the text, master language knowledge points and cultivate students' thinking quality through the design of problem chains.

5.2.1 Introduction

(1) The teaching design adopts the way of video introduction to present the common after-school activities of foreign junior high school students to the students and then ask the students about their views on these activities. We design the problem chain in the following way:

Q1: What do you think of these free time activities?

After the student has answered, ask the following questions:

Q2: What do you do in your free time activities?

Q3: How often do you exercise? What sports do you like best?

(2) Design Analysis: This teaching design first showcases the after-school activities of foreign students, then asks students about their own extracurricular activities. Through comparison, it prompts students to reflect on their daily behaviors. It then purposefully inquires about the sports they enjoy, starting with familiar leisure activities to engage students in class and awaken their existing language knowledge and practical experience regarding extracurricular activities, thus leading into the text topic. In the introduction phase, this design employs an introductory question chain, where questions are based on the discourse and closely tied to the text's theme, helping students initially perceive the target language and laying the groundwork for subsequent teaching.

5.2.2 Read before

(1) Before reading the text, students are required to carefully read the title and make reasonable predictions about the content of the article according to the title. Then students are required to read the article quickly and find out the general meaning of each paragraph. The following question chain is designed:

Q4: Look at the title. What do you think the passage is mainly about?

Q5: Can you find out the main idea of each paragraph?

(2) Design Analysis: In this stage, students are required to predict the main idea of an article based on its title. After engaging in divergent discussions, students are eager to know the main content of the article, which stimulates their interest in reading and fosters divergent thinking. The problem chain designed for this stage is progressive, involving memory and comprehension levels.

From the perspective of the difficulty of the problem chain design, the questions in this section, as the first sub-question of the progressive problem chain, are not overly difficult overall, aligning with students' learning characteristics and allowing students of different levels to participate in class.

5.2.3 Read it

(1) Next, questions should be set according to the basic elements of the text so that students can transition from the structure of the article to the mining of detailed information and cultivate students' logical thinking. The problem chain design in this stage is as follows:

Q6: What percentage of the students at No. 5 High School do not exercise at all ?

Q7: What percentage of the students use the Internet every day ?

Q8: What do most students use the Internet for? How about watching TV?

Q9: What other information can you get from these numbers in the passage?

Q10: What does the writer think is the best way to relax? Why? What's your opinion about it?

(2) Design Analysis: Questions 6 and 7 are designed to help students gather basic detailed information. By comparing these two questions, students will realize the difference between "not exercising" and "surfing the internet every day." Question 8 is designed to guide students in thinking about the significance of activities such as surfing the internet and watching TV, encouraging them to reflect on the meaning of their after-school activities. Question 9 aims to help students understand the underlying intentions behind these data, training their higher-order thinking skills. Question 10 assists students in summarizing the main idea of the article, promoting the establishment of correct after-school activity behaviors.

The intermediate reading stage is a crucial phase for processing texts. The problem chain in this stage is progressive, with questions designed at levels of comprehension, analysis, and judgment. This stage gradually expands on the text, progressively analyzing it to enhance students' understanding of its content. It encourages students to explore the more profound meanings of the text and to develop higher-order thinking skills in analysis and judgment.

5.2.4 After reading

(1) In the post-reading stage, this teaching design mainly guides students to think about the value orientation behind the text and understand the author's writing intention. This stage's problem chain takes the following form:

Q11: Where can you find this passage? Could the passage be found in a science book, a story, or a newspaper? Why do you think so?

Q12: How does the writer write the survey report? What can you learn from it?

Q13: What's the meaning of the pictures on P13? Do you think it's suitable to put these pictures here? Why or why not?

Q14: Do you think the students at No. 5 High School are healthy ? Why or why not ?

Q15: Do you think you are healthy ? Could you explain your reasoning?

(2) Design Analysis: The 11th question asks students to analyze where the text would appear in a book, which helps develop their practical application skills. The 12th question aids students in reviewing the structure of the article, encouraging them to apply the general-particular-general structure in future writing, promoting internalization. The 13th question prompts students to notice the illustrations below the text, training their judgment and fostering critical thinking^[8]. The 14th question summarizes the entire text, guiding students to focus on the central idea and learn correct values from the article. We designed the 15th question to assist students in reflecting on their post-class activities and evaluating their health.

The design of the problem chain in this stage is an exploratory problem chain, and the problem design is raised to let students make judgments, evaluate and innovate, and let students achieve the theme context of self-improvement through reflection on themselves.

5.2.5 Self-evaluation

Design self-evaluation form, obtain feedback from students, and improve teaching, as shown in Table 1:

Table 1 Self-evaluation form

Evaluation Sheet	
Standards	Scores
1.Can I find out the main sentences of each paragraph?	
2.Can I know and use the structure of the article?	
3.Can I understand the meaning behind the data?	
4.Can I judge the right free time activities?	
5.Can I use my free time reasonable?	
Good:5-8 Great:9-12 Excellent:13-15	

5.2.6 Homework

This stage of operation adopts hierarchical design:

Mandatory assignments:

What can you do to stay healthy? Please record a video of about 2 minutes.

Optional homework: Search for more information about the benefits of exercise and talk with your classmate.

Design intention: It aims to cultivate students' health awareness and learn healthy activities. It is an open task that implements students' core literacy.

6 Conclusion

Based on the above teaching practices, it can be observed that in middle school English reading instruction, the design of question chains can help activate students' thinking before reading and introduce the class theme; during reading, it helps students uncover the main themes and central ideas of the text, fostering higher-order thinking development; and after reading, it promotes the internalization and innovative transfer of language knowledge points. When designing question chains in reading, teachers should fully consider students' existing knowledge and development levels, closely align with the text's theme, and design tightly connected question chains to assist in the development of higher-order thinking.

References

- [1] Wang Houxiang. (2010). Types and Teaching Functions of "Problem Chains" --Taking Chemistry Teaching as an Example. *Educational Research*, (05):50-54.
- [2] Wu Ying. (2019). Problem chain design for junior high school English reading class based on development of thinking quality. *Basic Foreign Language Teaching*, (04):83-88.
- [3] Li Tiantian. (2023) Design of "Problem Chain" in High School English Reading Class Based on Thematic Context. *Overseas English*, (23):185-187.
- [4] Du Hongqing. (2022). Research on Ideological and Political Education in English Major Courses under Bloom's Taxonomy of Educational Objectives. *Overseas English*, (17):96-97.
- [5] Zhu Xun, Ma Wenjing. (2014) The Implications of Bloom's Taxonomy of Educational Objectives for College English Reading Instruction. *Chinese University Teaching*, (09):67-71.
- [6] Gong Yu. (2024). Design of the Problem Chain for Junior High School English Reading Instruction Based on the Cultivation of Thinking Quality--Taking He Lost His Arm But Is Still Climbing as an Example. *Modern Education and Practice*, (06):6.
- [7] Wang Di. (2021). A Brief Discussion on the Design and Application of "Problem Chain" Teaching Model in Junior High School English Reading Teaching. *Overseas English*, (02):195-196.
- [8] Sun Haiyan. (2023). Application of Prediction and Inference Strategies in English Reading Comprehension Teaching--Review of "Eight Core Strategies for English Reading Comprehension: Design and Tools". *Chinese Journal of Education*, (07):120.