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Case Study Analysis of High School English Reading Instruction for Developing Critical Thinking Competencies

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Abstract: In response to the new curriculum standards 'requirements for cultivating critical thinking, this study explores effective approaches to foster logical reasoning, critical analysis, and creative thinking in high school English reading classes. Using the 'Scientists Who Changed the World' unit from Yilin Press Edition 4 as a case study, we integrated cognitive stratification, constructivist tasks, and a three-dimensional critical model. Through observation, interviews, and text analysis tracking the entire classroom intervention process, the results demonstrated that chain tasks focusing on title prediction, structural summarization, viewpoint questioning, and role transfer can continuously activate students' higher-order thinking. These tasks guide learners from information extraction to meaning creation and value judgment, significantly enhancing independent thinking and cross-textual expression abilities. The research indicates that explicitly embedding critical thinking cultivation into news narrative reading provides an operational framework for implementing core competencies in English education.

Keywords: Thinking Quality; English Reading; Core Literacy; Teaching Cases

1. Introduction

Under the overarching framework of the New Curriculum Reform, high school English education is undergoing progressive development to comprehensively enhance students 'core competencies in the subject. Among these, thinking quality-explicitly identified as a core competency in the new curriculum standards-holds undeniable significance. This encompasses logical reasoning, critical analysis, and creative thinking, aiming to cultivate students' proactive cognitive patterns and self-directed learning abilities through English studies, thereby laying a solid foundation for future academic growth. Correspondingly, critical thinking represents one of the fundamental skills required for talent development, referring to the capacity for comprehensive understanding through analytical, synthetic, evaluative, and deductive processes. This includes questioning skills, analytical synthesis, and imaginative reasoning [1]. In high school English reading instruction, reading transcends mere information acquisition and language knowledge acquisition; it serves as a crucial vehicle for developing students 'thinking qualities. The importance of reading materials is self-evident. Tian emphasizes that junior high school English teachers should prudently select reading materials that embody contemporary characteristics and cultural depth, while employing diversified teaching strategies to effectively stimulate students' intrinsic motivation for reading practice. This approach endows reading classes with enduring vitality and generative dynamism, which equally applies to high school English reading education [2]. By guiding students through in-depth reading, comprehension, analysis, and evaluation of texts, teachers can effectively stimulate cognitive activities, helping students develop independent thinking and problem-solving capabilities. This teaching model not only aligns with the requirements of the new curriculum standards but also adheres to students 'cognitive development patterns, helping enhance their comprehensive qualities and competitiveness. However, practical teaching often suffers from issues such as overemphasis on high scores, utilitarian reading, neglect of humanistic values, and instrumentalized reading [3]. Cultivating critical thinking skills can partially alleviate these problems. The Yilin Press Senior High School English textbook Unit4 "Scientists Who Changed the World" provides an enlightening teaching case. Focusing on scientists, this unit offers rich reading materials through introducing outstanding scientists from various fields and their achievements. During instruction, teachers

can fully utilize these resources in conjunction with the new curriculum standards, guiding students through observation analysis, summarization, construction, and innovation-specific student-centered cognitive activities-to deeply explore scientific research methods, contributions, laws of scientific development, and future trends, thereby cultivating scientific thinking. Through in-depth analysis of this case, we aim to explore effective ways to develop students' critical thinking skills in high school English reading education. By integrating relevant curriculum standards, we will analyze the role and effectiveness of these cognitive activities in nurturing students 'thinking abilities, while discussing how to better incorporate critical thinking cultivation into reading instruction to improve students' overall competencies and competitiveness. In recent years, research on developing critical thinking skills in reading education has gained increasing attention.

2. Teaching Philosophy and Theoretical Analysis of High School English Reading Instruction for Developing Critical Thinking

2.1 Teaching Idea

Educational Framework The cornerstone of high school English reading instruction is the "student-centered, teacher-guided" approach. This philosophy emphasizes students 'proactive engagement and teachers' supportive guidance, aiming to stimulate reading interest through effective teacher-student interactions while cultivating critical thinking skills. Students are central to learning processes, where their initiative, enthusiasm, and creativity drive educational outcomes. In reading classes, educators should encourage active participation in reading activities, motivate students to express personal perspectives and reflections, and foster independent learning capabilities. Teacher Guidance: As instructional facilitators, teachers should provide strategic direction and inspiration. By designing thought-provoking tasks tailored to students' actual conditions and text characteristics, educators can ignite intellectual curiosity and guide deeper exploration. Ultimately, teachers should help students construct knowledge frameworks that integrate existing knowledge with new acquired insights, creating well-organized and structured learning systems [4].

2.2 Theoretical Analysis

In reading classes, cultivating students 'cognitive qualities can be advanced through three synergistic approaches: Cognitive Theory, Constructivist Theory, and Critical Thinking. First, applying Cognitive Load Theory to "hierarchical encoding" of textual information. By using pre-teached vocabulary, visual structural diagrams, and problem chain designs, we reduce external cognitive load while optimizing internal cognitive load. This enables students to complete the hierarchical transition from lexical recognition to discourse inference within the "solvable zone," thereby enhancing logical thinking. Second, reconstructing classroom environments through Constructivist's three-dimensional framework of "context, collaboration, dialogue." Utilizing "complex authentic tasks" to drive students to "multi-dimensionally graft" text themes with personal experiences and social issues. Through group cycles of "cognitive conflict and meaning negotiation," students generate "flexible knowledge," achieving a leap from "textual understanding" to "meaning creation," ultimately developing profound and original thinking. Third, introducing Critical Thinking's "evidence-reasoning-assessment" triad model. Guiding students through "stance-refutation-integration" strategies for "symptomatic reading" of rhetorical purposes, cultural stances, and implicit power dynamics. Using "cross-textual cross-verification," students examine the reliability, bias, and ethical implications of viewpoints, fostering critical questioning, reflective awareness, and value judgment capabilities. These three approaches converge to transform reading classes into "thinking incubators" that combine cognitive efficiency, meaning growth, and critical tension, ultimately promoting holistic improvement in students' thinking quality across logical rigor, depth, and critical dimensions. Information Processing Process: According to Cognitive Theory, human thought processes involve complex information processing. In reading class, teachers can design different reading tasks, such as prediction, reasoning, generalization, etc., to exercise students' information processing ability. These tasks can help students better understand and grasp the text content, improve their thinking quality.

Deep Reading: Beyond information processing,

cognitive theories also emphasize the importance of deep reading. The proposal and implementation of deep reading teaching concepts in high school English education result from applying constructivist psychology to English reading instruction [5]. Teachers can guide students to focus on textual details, character relationships, and emotional changes to help them gain deeper understanding and form their own perspectives.

Constructivist Theory: Realistic Context: Constructivist theory posits that knowledge is acquired through active construction within specific contexts. In reading classes, teachers can create authentic reading scenarios where students experience, engage, and reflect. Chris argues that core elements of learning environments include "context," "collaboration," "conversation," and "meaning construction" —all of which collectively support students 'active learning and deep comprehension [6]. Fan notes that according to constructivist learning theory, when teachers create relevant learning contexts that activate students' prior experiences, enabling them to actively build new knowledge upon existing knowledge and weave a novel knowledge network, this effectively enhances students 'cognitive quality [7]. For instance, role-playing and situational simulations can immerse students in text-based scenarios for better content comprehension.

Knowledge System Construction: Within these contexts, students collaboratively construct knowledge systems through interactions and cooperation. Teachers should encourage students to share their views and feedback while listening to others' opinions and suggestions, thereby continuously refining their knowledge frameworks.

Critical Thinking: Text Analysis: In reading classes, teachers can guide students to engage in critical reading of texts. This involves analyzing the text's viewpoints, evidence, and logical structure, as well as evaluating its credibility and value. Through this approach, students can develop their critical thinking skills and cultivate independent, objective, and rational thought processes. Teachers may design questions tailored to students' cognitive development levels and comprehension abilities based on textual content, promoting deep processing and meaning construction of the text. This aligns with Zhu et al's concept of carefully designed questions that stimulate student reflection and enhance text comprehension [8].

Perspective Clash: Additionally, teachers can organize group discussions or debates where students exchange ideas on specific topics or viewpoints. Such activities help broaden students' perspectives, deepen their thinking, and teach them to analyze issues from different angles while identifying core principles through critical examination. Critical thinking skills can be nurtured and enhanced through these interactive exchanges of diverse viewpoints.

3. Teaching Case Analysis of English Reading Class in High School Based on Cultivating Thinking Quality

Discourse: Chinese Scientist Wins 2025 Noble Prize

Step1 Lead-in

T: Although I have been here for many times, I'm still impressed with these beautiful places and amazing people, right? So are there any famous people in Zhejiang, in Hangzhou? Can you give me some names?

T: And today, actually, I want to introduce you to a very famous scientist who is also from Zhejiang. So let's see who she is Okay, now she was born in Ningbo. Do you know who she is? No. And her discovery saved millions of people's lives and she won the Nobel Prize. So who knows who she is?

Design Intent: By mentioning the scientist's birthplace Ningbo, teachers can provide students with contextual information to help them connect with the reading material and better understand the scientist's achievements. Through questions like "Do you know who she is?" and "Her discovery saved millions of lives and earned her a Nobel Prize," teachers can create suspense that sparks curiosity, encouraging active participation in reading activities. This introductory activity helps students predict upcoming content—such as guessing the scientist's identity, her accomplishments, and the significance of her discoveries to society. Such anticipation aids comprehension of the text's structure while developing reading strategies and critical thinking skills. Mentioning the scientist's "Zhejiang origin" fosters emotional connection, making students feel proud and motivated to engage more actively.

Evaluation: Evaluate this teaching activity through observation, analysis, and inference in

cognitive quality. Observation: The teacher initiates by asking "Are there any famous people in Zhejiang or Hangzhou?" to guide students' attention to local figures. By observing responses, the teacher uses answers like "No" to assess students' prior knowledge, laying groundwork for subsequent introductions. The teacher's attention to detail in mentioning the scientist's "birthplace of Ningbo" provided crucial clues for later identification. Analysis: By selecting a renowned Zhejiang-born scientist as teaching material, the teacher leveraged both geographical relevance and educational significance. Through observing student reactions, the teacher recognized students 'unfamiliarity with the scientist's identity, thus sparking their curiosity through guided inquiry. Pedagogical Strategy: The teacher employed questioning and revelation techniques, guiding students to deduce the scientist's identity from known information through logical reasoning—a method that cultivates critical thinking. Inferences: Regarding factual deductions, the teacher inferred the scientist's immense social value and influence based on her "life-saving discoveries and Nobel Prize." From student responses, the teacher identified knowledge gaps requiring instructional reinforcement, demonstrating how classroom interactions naturally foster learning.

Step2 Pre-reading

T: And today we are going to read a news report about her. And when we are reading a news report, where do we start first?

Very good. Okay, so let's have a look at the title. Okay, let's read it together. Okay, Chinese scientist went to go. Thank you. So what information can we get from this title? All the information, any volunteers?

So from just now your answers, we can learn that we can know who, right? And where and what, and also maybe when, right, about this news report. But we don't know any exact information. So maybe we can guess in this news report what will be talked about.

Design Intent: To foster active student engagement with teachers, this approach activates students' background knowledge of text genres and content, enhances critical thinking skills through contextual training, and develops headline interpretation and predictive abilities—laying the groundwork for formal reading activities.

Evaluation: The teacher first clarifies that analyzing news reports begins with examining headlines, then guides students through headline analysis. This demonstrates clear understanding of instructional content (how to read news reports), recognizing headlines as key to obtaining preliminary information. By asking students to identify key points from headlines and encouraging voluntary responses, the teacher evaluates comprehension through student participation. Following logical progression, the teacher guides students from headline analysis to actual reading, showcasing well-structured pedagogical flow. Through factual deductions about potential figures (Chinese scientist), locations (not explicitly stated), events (went to go—a grammatically incorrect phrase but inferred as an action or event), and time (not specified), the teacher effectively sparks curiosity and interest in news content. By instructing students to extract information from headlines and encouraging speculation, the lesson design cultivates reading comprehension, analytical thinking, and inference skills. This analytical approach also manifests in teachers 'subsequent instructional practices. By observing students' interpretations of news headlines, educators can further develop content explanations and discussions. Through students' responses, teachers can gauge their comprehension of headline meanings and assess whether they possess the ability to extract key information from titles. Such insights into student capabilities enable teachers to adjust teaching strategies according to actual learning situations.

Step3 While-reading

T: 1. Okay, so now I want you to focus on paragraph 1 and then tell me what kind of information can we get from the first paragraph. Okay, can you find the answers to just now these questions?

2. Reading for details (para. 3, 4, 5)

But actually, you know, sometimes we want to know more, right? For example, just now you may wonder how she received the Nobel Prize, guys, right? So now we may come to go on reading and find more detailed information. And that part in the news report is called the Body. Yes. So now we will come to go on reading and find more details.

3. Now let's watch a short video about how she did that. Okay, so after watching the video, do you think it's easy to be a scientist? No, of course. So we can see that a scientist must have

very great qualities. So now, boys and girls, I want you to read. I want you to go back to these three paragraphs, the information we just got.

Design Intent: The first activity aims to have students quickly read the first paragraph to extract key information, supplementing the content from the title and considering the role of this section in news reporting discourse. The second activity guides students to delve deeper into the thematic components of news reports, enabling them to read main paragraphs and understand their core ideas through problem-solving frameworks while answering teacher questions. The third activity uses video learning to explore Tu Youyou's arduous journey in developing artemisinin, highlighting her exceptional qualities. Evaluation: Guidance and Summarization: In Phase One, teachers first guide students to focus on Paragraph 1 and pose questions to help them extract critical information. This step cultivates summarization skills by enabling students to identify key points from texts. Through this approach, teachers not only help students grasp the main idea but also lay the groundwork for subsequent comprehension. In Phase Two, teachers encourage students to examine more detailed sections (Paragraphs 3-5) for specific information, demonstrating their emphasis on students' analytical abilities. By guiding students to explore textual details, teachers help build a comprehensive understanding of the content while fostering critical thinking for holistic analysis. In Phase Three, a short film about the protagonist's Nobel Prize journey is shown. This step not only enriches students 'intuitive understanding but also helps them integrate previously read information with video content, further deepening their comprehension of the text. The use of videos makes the construction process more vivid and intuitive, aiding students in forming deeper impressions. In the final stage, the teacher posed an open-ended question: "Do you think becoming a scientist is easy?" This question aims to stimulate students' thinking and encourage them to apply previously acquired knowledge in their responses. Through this process, the teacher not only assessed students 'understanding of the text but also cultivated their critical thinking and communication skills. The design of this question chain enables teachers to guide students in exploring the author's writing intentions and viewpoints through targeted questions, facilitating reflection, judgment, analysis, and evaluation—effectively enhancing their higher-order thinking abilities [9].

Step4 Post-reading

T: And today, I think we can have a chance to show our respect, to give us sincere tribute to her. So now, group leaders, I want you to take out your handout and then have a look at the tasks you have to complete. And now students with Task A, just suppose you are Tu Youyou and what do you want to talk to the young students and the students with task B. So you are a young student. And we know Tu you is a very great Chinese scientist, right? But actually, is she the only one? Of course not. So do you know any other great Chinese scientist? Do you know Chinese scientist? Do you want to be one of them in the future? To be Frank, do you want to be one of them in the future?

Design Intent: Students start with Tu Youyou and connect to numerous scientists, reflecting on whether they have dreams of becoming scientists and what essential qualities are required to become one.

Evaluation: First, the teaching activity encourages students to think and express themselves from multiple perspectives and roles by setting tasks such as "Imagine You Are Tu Youyou" and "Imagine You Are a Young Student" (Task A and Task B). This role-playing approach stimulates students 'empathy and innovative thinking, allowing them to understand Tu Youyou's achievements and spirit through simulated scenarios while contemplating how young students should learn and inherit her legacy. Second, the teaching activity mentions that "innovative thinking refers to proposing insights and methods that differ from conventional or common approaches within specific environments using existing cognitive patterns, knowledge, and resources." In this activity, teachers do not directly present Tu Youyou's achievements but instead guide students to actively learn and think through completing tasks. This teaching method that encourages independent discovery, exploration, and critical thinking helps cultivate students' innovative thinking and problem-solving abilities. Finally, the activity poses the question "Are there other great China scientists?" further stimulating students 'curiosity and desire to explore China scientists and their contributions. Through this inquiry, students not only focus on outstanding scientists like Tu Youyou but also

proactively learn about other scientists' stories and achievements, thereby broadening their horizons and enriching their knowledge. Summary. This paper explores teaching cases of high school English reading classes focused on cultivating critical thinking competencies. Through practical teaching methods, it analyzes and validates effective strategies for developing students 'cognitive abilities in English reading education. Under the new curriculum reform framework, enhancing core literacy—particularly in critical thinking—has become a key mission in English instruction. By examining the "Scientists Who Changed the World" unit from Yilin Press's high school English textbook, this study demonstrates how guiding students through deep reading comprehension, analytical evaluation, and textual analysis can stimulate their cognitive processes, thereby fostering logical reasoning, critical thinking, and creativity. It highlights how various classroom activities in English education contribute to developing learners 'intellectual capabilities [10]. The paper establishes a student-centered pedagogical philosophy emphasizing learner autonomy and teacher guidance. Integrating cognitive theory, constructivism, and critical thinking frameworks, it provides detailed analysis on cultivating students' thinking qualities through reading instruction. By designing challenging yet thought-provoking tasks and authentic reading scenarios that encourage active participation and self-expression, teachers can effectively spark students' interest in reading, develop independent learning skills, and ultimately enhance their critical thinking competencies.

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