

# A Review of Content-Based Instruction on Critical Thinking in College English Reading Instruction

Mengyi Zhang, Lin Tang\*

School of English, Zhejiang Yuexiu University, Shaoxing, 312000, China

\* Corresponding author

---

**Abstract:** Content-Based Instruction (CBI) has gained substantial recognition as a transformative approach in English reading instruction, particularly in enhancing not only linguistic skills but also critical thinking abilities among university students. This paper presents a comprehensive review of the integration of critical thinking skills in college English reading courses under the framework of CBI. The synthesis of domestic and international research literature reveals that CBI, by integrating subject matter content with English language learning, provides a rich context for fostering analytical abilities along with language acquisition. The theoretical foundations of CBI suggest that the contextual application of language within relevant subject matter not only improves reading comprehension but also encourages a deeper intellectual engagement necessary for critical thinking. Studies included in this review have demonstrated that students exposed to CBI show significant improvements in their abilities to analyze, evaluate, and synthesize information in English, which are key components of critical thinking. Successful case studies are discussed, showcasing enhanced critical thinking capacities in students and improved academic performance when CBI is effectively implemented. This review underscores the dual benefits of CBI in enhancing English language proficiency and critical thinking skills, suggesting that CBI is a valuable pedagogical strategy in the arena of higher education.

**Keywords:** Content-Based Instruction; English Reading Teaching; Language Acquisition; Integrated Learning.

---

## 1. Introduction

Expanding critical thinking skills while simultaneously advancing English proficiency in tertiary education has increasingly become a focal point for educators and curriculum developers. Content-Based Instruction (CBI) has evolved as a robust pedagogical model that inherently fosters the acquisition of language through immersion in subject-specific content, making it a highly relevant approach for university-level English reading courses. The integration of critical thinking within this framework particularly addresses contemporary educational imperatives that emphasize both cognitive flexibility and linguistic competence in a globalized context.

Critical thinking encompasses a suite of abilities including the capacity to reason effectively, identify and evaluate arguments, solve problems, and apply knowledge pragmatically. When these elements are cultivated within the realm of English language education through CBI, students are not only becoming proficient in a new language but are also developing robust analytical skills capable of crossing disciplinary boundaries.

This review paper examines the interplay between CBI and critical thinking development in the context of university English reading classes. It delves into the theoretical underpinnings of CBI, highlighting how it facilitates an integrated learning experience that promotes both language fluency and higher-order thinking skills. The synthesis of current research illuminates the methods through which CBI has been employed to strengthen critical thinking and explores the empirical outcomes of such pedagogical interventions.

Through exploring this dual focus, the review aims to articulate effective strategies and pinpoint potential challenges within the CBI framework, thereby providing valuable insights for educators looking to optimize English

reading instruction. This examination not only reaffirms the value of CBI as a transformative educational tool but also underscores its capacity to enhance critical thinking, thereby preparing students for complex intellectual and professional landscapes.

## 2. Content-based Instruction and Critical Thinking Ability

### 2.1. Definitions of Content-based Instruction

Content-based Instruction (CBI) was originally introduced by Lambert and Tucker's "immersion programme" in Montreal, Canada in 1960s. In this initial experiment, foreign languages were already used as teaching languages. However, Content based teaching is not about allowing students to directly acquire basic knowledge of a second language, but about integrating language teaching with subject teaching. This combination can not only improve students' language abilities but also enhance their cognitive abilities.

There is currently no unified view in the academic community on the definition of content based instruction, and different perspectives of scholars will lead to different definitions. Due to the diverse definitions currently available, this paper has provided a certain summary of some of the definitions proposed by scholars.

Brinton, Snow and Wesche (1989, as cited in Leng, 2021: 10) defined CBI as the combination of content teaching and language teaching, but CBI is the acquisition of second language skills in the process of thematic learning and does not focus on language learning. This definition indicates that scholars pay more attention to the impact of content-based teaching on subject teaching.

On the contrary, some scholars have defined it as language teaching and placed greater emphasis on the importance of language teaching content. Richards thought that content-based instruction is a second language teaching method that

centers on the content and information obtained by students, rather than a teaching method that centers on language and grammar syllabus. (2001, as cited in Zhao, 2014: 77).

In summary, whether researchers view content based instruction from the perspective of language teaching or subject teaching, the essence of this teaching method is to combine language with specific content for teaching.

## 2.2. Models of Content-based Instruction

According to the different content, subjects, and requirements of language teaching, there are four main models of content based instruction, namely Theme-based Instruction, Sheltered Content Instruction, Adjunct Instruction, and Language for Special Purposes.

Firstly, Theme-based Instruction is the most important among all models. It refers to teachers adopting different teaching methods based on the different themes chosen by students, such as using music, art, and other methods to cater to students' interests and cognitive needs. This model is more suitable for beginner language learners.

Then, Sheltered Content Instruction is the model that language is only used as a tool for students to learn subject content, and language knowledge is not emphasized in teaching. This model is more suitable for students with intermediate language abilities.

Thirdly, Adjunct Instruction aims to simultaneously impart language knowledge and subject knowledge to students. Language teachers are responsible for imparting basic knowledge and theories of language to students, while subject teachers are responsible for teaching professional knowledge. This model is more suitable for students who major in professional subjects but lack certain language abilities.

Lastly, the model called Languages for Special Purposes pays more attention to language learning with special purposes in daily life. Similarly, the content of language teaching comes from actual life or professional fields.

## 2.3. Critical Thinking Ability

Critical thinking ability is a creative thinking activity of human beings in the process of cognition. It does not mean negating everything, and it is a dialectical unity of negation and affirmation. In this paper, the author observes the impact of CBI on critical thinking ability by dividing it into seven levels, namely truth seeking, open mindedness, analytical, systematic, confident, inquisitive, and cognitive maturity.

There is no unified definition in academia for critical thinking ability. And the term critical thinking ability often appears in the fields of medicine and nursing. In recent years, research both domestically and internationally has demonstrated the significant impact of critical thinking ability on medicine and nursing, with more exploration of its impact on clinical practice and nursing students. However, the author of this article is committed to exploring the relationship between critical thinking ability and language teaching and learning.

## 3. Related Studies Abroad

### 3.1. Studies on Content-based Instruction in English Reading

The research on the application of CBI theory in foreign countries is relatively rich because CBI theory itself was born in the 1960s in an immersive curriculum teaching experiment abroad (Lou 2015: 1579).

According to Lyster and Ballinger (2011: 280-281), content-based language teaching is about two parts: content-driven programs and language-driven programs. They also thought that 'designing a two-way immersion program could help integrate two target languages'. They focused on the application of content-based teaching methods in multidisciplinary or multilingual input.

The difference is that Sibulkin (2018: 190) focused on the output of language from the students' perspective. He analyzed the effectiveness of CBI and its impact on ESL students in higher education. The results indicated a positive correlation between content-related courses and the overall improvement or sustained improvement of students' academic performance.

In fact, reading instruction requires higher input of a large amount of text and high-quality output. 'Reading is probably the most important skill for the student language learning development because students basically use written texts in searching for information and acquiring new data of knowledge' (Khruawan & Dennis 2017: 369). In Khruawan and Dennis's research, they investigated the students' achievement and attitude based on CBI teaching in reading. This study focused on language learning on reading skills and analyzed students' achievement and attitudes toward reading learning in an attempt to identify the impact of CBI on reading skills. Novelty is that this study takes into account students' subjective attitudes and also draws attention to the fact that students' subjective feelings and abilities are key to the success of teaching.

However, although there is great emphasis on the cultivation of critical thinking ability and teaching based on CBI theory both domestically and internationally, there is not much research abroad on the impact of CBI-based English reading teaching on critical thinking ability. The impact of critical thinking ability on foreign CBI English teaching mainly focused on other skills or disciplines, and rarely involved reading teaching. However, their research could not avoid the impact on reading comprehension.

For example, Pally (2010: 294-295) focused on the critical thinking ability in writing skills based on sustained CBI. In this scholar's research, it was found that 'the papers of low-level students with sustained CBI showed stronger arguments than those of high-level students without sustained CBI'. This indicates that students' original language proficiency is not an influencing factor in the experiment, and CBI does improve students' critical thinking ability in writing and reading. The focus of this study was on the impact of continuous content-based teaching on the critical thinking ability of paper reading and writing skills. Two directions of attention are relatively novel: the first direction is the continuity of content based teaching, and the second direction is the writing of academic papers. Because the completion of academic papers is based on extensive reading and accumulation of writing, he actually studied the impact of two skills. This provides a clear framework for the research of this article, as well as a theoretical basis for studying the impact mechanism of CBI on critical thinking ability.

The above researcher mainly focused on the impact of CBI on the critical thinking ability of multiple language skills, while later scholars found that critical thinking ability has a more significant impact on skills in science subjects than language learning. 'Content-based language instruction can assist English as a second language (ESL) students to achieve better learning and teaching outcomes, however, it is

primarily used to understand the content, and may not help to develop critical analysis skills' (Burder, Tangalakis & Hryciw 2014: 1). They wanted to develop critical thinking skills for ESL undergraduate biomedical science students through CBI. Although the purpose of this study was to enhance the abilities of students in the field of science, the actual focus was on whether reading texts based on science would affect ESL students' critical thinking abilities.

The above research indicates that there are various forms of CBI application in English teaching, but there is not much research on the application of CBI in English reading. Similarly, there are many forms of research abroad on the relationship between CBI and critical thinking ability. Although their research is essentially inseparable from the step or ability of reading, few scholars have directly explored the relationship between CBI-based critical thinking ability and reading ability.

### **3.2. Studies on Critical Thinking in English Reading**

English reading ability is formed based on a large amount of text input. The most fundamental and important aspect of English reading ability is critical thinking ability. The essence of language is the expression of logic, so there is also a lot of research on critical thinking ability in English reading abroad. Leon-Abao (2014: 336) focused on the impact of teacher ability on intermediate students' critical thinking ability in reading. In this study, the target audience is intermediate students, who often tend to see what is available and lack proactive thinking when reading. And providing interesting reading texts and activities by teachers can greatly enhance students' thinking abilities, which provides a new approach for the strategy analysis in this article.

Differently, Muhammad (2020: 10) tried to know the critical thinking ability which was reflected by reading tests from student's perspective. From his research data, there seemed to be no definite correlation between students' attitudes towards critical thinking ability and students' critical reading ability. This indicates that the attitude of students towards critical thinking ability is not the main impact on critical thinking ability in English reading, and it is necessary to reflect on whether the teacher's teaching has an impact on the improvement of students' critical thinking ability. If the paper could continue to try to study the relationship between the two from the perspective of teachers, it might be more comprehensive.

The above two studies focused on the critical thinking ability in reading from the perspective of teachers or students, while earlier studies explored the impact of reading teaching strategies on critical thinking ability. In Ghabanchi and Behrooznia's study (2014: 513), they explored 'the impact of brainstorming as a pre-reading strategy on English learners' reading comprehension and critical thinking abilities'. It has been proven that there is a correlation between the two, but brainstorming is only a reading strategy activity before reading. Its function is to stimulate students' internal background knowledge or schema rather than strengthen the content of the reading text. Therefore, the article does not specify which strategy the teacher should choose in reading, which is also the problem that this article aims to consider.

Unlike the previous study, Syarkowi (2018: 4) focused his research on guided learning of after-school reading assignments rather than brainstorming before reading. The research has shown that providing reading assignments is

beneficial for guiding students in exploratory learning and building critical thinking abilities.

Based on the above research, it seems more reasonable to explore the impact of reading teaching under CBI on students' critical thinking.

## **4. Related Studies At home**

### **4.1. Studies on the Impact of CBI-Based English Reading on Critical Thinking**

Similar to foreign countries, there is also limited research on the impact of CBI-based English reading teaching on students' critical thinking abilities in China. However, the research on English reading teaching in China is multidimensional. For example, Yuan (2010: 55) thought that in the CBI environment, students need to analyze and synthesize new content in the process of continuously learning new subject knowledge based on their existing knowledge, which will have a certain impact on their critical thinking ability. This indicates that research on the impact of CBI on students' critical thinking abilities has begun to pay attention to the impact mechanisms in the process. In short, it means studying whether CBI affects critical thinking ability and how CBI affects critical thinking ability. Based on these two points, this article further explores how to enhance students' critical thinking ability in CBI language teaching. Also, the critical thinking assessment table used in her research was evaluated from five aspects: identifying hypotheses, induction, deduction, interpretation, and evaluation. This article draws on the evaluation of critical thinking ability and improves it.

In subsequent academic research, researchers gradually focused on the novelty and rationality of teaching methods. For example, in Zhou's (2016: 99) article, a method of setting up elective courses such as college English culture was proposed, which relied on cultural comparison to stimulate students' thinking. According to Wang (2019: 113+116), the combination of Roland Barthes' reading theory and CBI can better enhance students' reading and critical thinking abilities. Roland Barthes' reading theory shifts the subject of reading towards students rather than teachers, giving students the initiative to read. This provides a good idea for the strategic analysis of this article: CBI can be better integrated into English reading teaching through innovative or reasonable teaching methods.

### **4.2. Studies on Critical Thinking in English Reading**

In China, research on the cultivation of students' critical thinking ability in English reading is abundant because scholars attach great importance to it. For example, Chen (2017: 27) said that teachers should pay more attention to students' personalized understanding and thinking of text. In reading teaching, teachers should treat students as the main body rather than aimless input. Only in this way can students' critical thinking ability be improved because critical thinking ability is an individual's proactive thinking activity. Sha (2014: 124) thought that teachers should guide students to preview the title before reading the text and predict the content of the text by reading it. By doing so, students' critical thinking abilities will be greatly improved. Similarly, according to Zhou, Jiang and Yao (2015: 90), non-English majors' critical thinking ability in English reading is weak and teachers should encourage students to express their views

from various aspects and give their explanations. As they said, the more they question, discuss, and share, the better CT ability they may get.

In the research literature of the past three years, researchers have also focused on providing reasonable suggestions and strategies for teachers' teaching processes. For example, Zhang (2020: 1149) said that students should have more opportunities or time to play a positive role, both individually and in group work. Critical reading strategies should be applied before, during, and after reading. And this precisely means that the exercise of critical thinking ability cannot only stay while reading, which also aligns with Sha's suggestion to predict the content before reading. The difference is that the scholar proposed issues that should be noted after reading. This also provides a good idea and direction for the strategic analysis of this article.

In the context of the new liberal arts, some scholars have also conducted corresponding research and completed corresponding papers. For example, Rui (2023: 72+75) constructed a critical thinking ability cultivation model based on teaching objectives, environment, content, methods, and evaluation, and believed that incorporating humanistic knowledge into foreign language teaching is beneficial for cultivating critical thinking ability. And this indicates that the cultivation of critical thinking ability requires interdisciplinary knowledge input and a full-process teaching strategy. This is the foothold of this article's research.

### 4.3. Studies on Content-based Instruction in English Reading

Content-based teaching has also received great attention and development in China due to the complexity of disciplines and languages. In domestic research, scholars have focused more on content-based teaching in English reading for middle and high school students. For example, Yang and Liu proposed that under the pressure of further education, teachers should enhance the pleasure and initiative of middle school students in reading through content-based teaching. Similarly, Sun (2022: 9) found that the content-based teaching model could improve high school students' skills in understanding the main idea of an article, summarizing titles, and guessing word meanings. Leng (2020: 9), who also studied high school English reading teaching based on CBI, believed that students' reading micro skills have been well developed in content-based reading teaching. It is easy to find that they all focus on the impact of CBI on students' reading skills, with a focus on reading skills that are more micro-level. In fact, from a macro perspective, the reading skills they focused on, such as guessing word meanings, belong to the category of critical thinking ability. In addition, these studies focused on the reading ability of middle and high school students, while this article focuses on the English reading ability of college students. This is because the critical thinking ability of middle school students is not yet mature. The subject of this study is senior English major students. At the same time, the thinking ability of senior students has also developed and matured.

Lou (2015: 1583) said that CBI-based English teaching can improve the learning motivation and language ability of non-English major students in the post-classification period, but the premise is that students have a good foundation in English. This indicates that English proficiency can also interfere with the impact of CBI on students' reading ability. Therefore, this article selects students majoring in English with the same

English proficiency as the research subjects to avoid the impact of students' original language proficiency.

Unlike the above research, some researchers have focused on the emotional attitudes and performance of students and teachers. For example, Zhao (2014: 77) wanted to explore whether the application of CBI to extended reading is helpful for students' learning, and research showed that teachers and students hold a positive attitude and perspective towards CBI. Similarly, Li and Zhang (2023: 11) directly explored content-based teaching from the perspective of students' emotional understanding. They believed that cognitive dissonance in content-based English teaching can be regulated because it is a characteristic of interaction between people and the environment.

Based on the above research, it is easy to find that CBI has been applied to reading teaching, and gradually explore the impact of CBI on students' abilities and emotional attitudes, which provides a solid research foundation for the development of this article. At the same time, researchers have focused on students' reading skills, but the formation of certain reading skills cannot be separated from the cultivation of critical thinking ability. This article aims to explore whether the impact of CBI-based English reading teaching on students' critical thinking ability is related to reading skills.

## 5. Conclusion

Content-based Instruction (CBI) has been emerging as an influential approach in the realm of English reading instruction, emphasizing the integration of language learning with academic content learning. This approach aids in enhancing reading comprehension and overall language proficiency by engaging students in meaningful and contextually rich educational experiences. In reviewing the application of CBI across various settings and cultures, several key insights and recurring themes have been identified.

First and foremost, CBI leverages the intrinsic motivation that students have towards learning specific content, which in turn facilitates a more natural and effective acquisition of language skills. By focusing on content that is relevant and interesting to students, such as environmental issues, science, or social studies, CBI encourages deeper engagement and cognitive involvement, which are crucial for building language competencies.

Different models of CBI implementation have been highlighted in the literature, each catering to specific educational needs and environments. The theme-based model focuses on specific thematic units that integrate language objectives with academic content. Sheltered instruction is designed to make academic instruction more accessible to non-native English speakers by using simplified language and additional visual aids. The adjunct model pairs language classes with content courses, providing students simultaneous instruction that reinforces language development through content learning.

The challenges associated with implementing CBI in educational settings are non-trivial and include the need for comprehensive teacher training, curriculum development, and the adjustment of assessment methods to better evaluate both language proficiency and content understanding. Effective implementation requires educators to possess a dual expertise in both language instruction and the subject matter, and often necessitates intensive professional development.

## References

- [1] Burder, R. L., Tangalakis, K., & Hryciw, D. H. (2014). Use of content based instruction and socratic discussion for ESL undergraduate biomedical Science students to develop critical thinking skills. *Journal of Curriculum and Teaching*, 3(1), 1-7.
- [2] Chen Xiaoyan. (2017). A study on the cultivation of critical thinking ability in senior high school English reading teaching. *Overseas English*, (1): 25-27.
- [3] De Leon-Abao, E. (2014). Teachers' instructional competence on students' comprehension skills and critical thinking ability. *Open Journal of Social Sciences*, 2, 334-339.
- [4] Ghabanchi, Z., & Behrooznia, S. (2014). The impact of brainstorming on reading comprehension and critical thinking ability of ESL learners. *Procedia - Social and Behavioral Science*, 98, 513-521.
- [5] Khruawan, P., & Dennis, N. K. (2017). A study of English reading comprehension using content-based instruction approach. *International Journal of Research - GRANTHAALAYAH*, 5(1), 368-375.
- [6] Leng, S. T. (2021). An experimental study on content-based instruction in senior high school English reading teaching [Master's thesis, Hebei Normal University]. CNKI.
- [7] Li, D. Y., & Zhang, L. (2023). Exploring EFL learners' cognitive/emotional dissonance in content-based foreign language instruction: An ecological perspective. *System*, 114, 1-11.
- [8] Lou, Y. G. (2015). An empirical study of content-based instruction applied in non-English-majored graduate English teaching in the post-massification. *Creative Education*, 6, 1578-1583.
- [9] Lyster, R., & Ballinger, S. (2011). Content-based language teaching: convergent concerns across divergent contexts. *Language Teaching Research*, 15(3), 279-288.
- [10] M. Din. (2020). Evaluating university students' critical thinking ability as reflected in their critical reading skill: A study at bachelor level in Pakistan. *Thinking Skills and Creativity*, 35, 1-10.
- [11] Pally, M. (2001). Skills development in 'sustained' content-based curricula: case studies in analytical/critical thinking and academic writing. *Language and Education*, 15(4), 279-305.
- [12] Rui, L. (2023). A study on the cultivation of critical thinking ability in foreign language teaching: taking the course "a brief introduction to English-speaking countries" as an example. *International Journal of New Developments in Education*, 5(20), 72-76.
- [13] Sha Rina. (2014). Training Students' Critical Reading Ability based on Text Interpretation in College English. *Journal of Inner Mongolia Normal University*, (9): 123-127.
- [14] Sibulkin, J. J. (2018). Analysis on content-based instruction methods influencing student outcomes in higher education. *Open Journal of Social Science*, 6, 176-190.
- [15] Stoller, F. L. & W. Grabe. (1997). A Six-T's approach to content-based instruction. In M. N. Snow & D. Brinton (eds.). *The Content-Based classroom: Perspectives on Integration Language and Content* (pp: 78-94). Longman.
- [16] Sun, X. Y. (2022). An experimental study on content-based instruction in senior high school English reading teaching [Master's thesis, Hebei Normal University]. CNKI.
- [17] Syarkowi, A. (2018). The effect of reading assignments in guided inquiry learning on students' critical thinking skills. *Journal of Physics: Conference*, 1013, 1-4.
- [18] Wang Yuhua. (2019). Roland Barthes' View on the CBI Model of English Speculative Reading Teaching. *Journal of Chongqing Second Normal University*, (3): 112-116.
- [19] Yuan Pinghua. (2010). An Empirical Study on the Impact of Subject-Content-Based Language Teaching on Students' Critical Thinking Ability. *Foreign Language World*, (6): 49-55.
- [20] Zhang, Y. (2020). Developing EFL students' critical thinking competence in English reading class. *Creative Education*, 11, 1145-1151.
- [21] Zhao, Y. Y. (2014). Applying content-based instruction to extensive reading class. *Studies in Literature and Language*, 9(1), 77-81.
- [22] Zhou Dan. (2016). Training of Critical Thinking Ability in English from the Perspective of CBI. *Journal of Wuhan Institute of Shipbuilding Technology*, (1): 97-99.
- [23] Zhou, J., Jiang, Y., & Yao, Y. (2015). The investigation on critical thinking ability in EFL reading class. *English Language Teaching*, 8(1), 83-90.