

# Study on the Influence of Critical Thinking on College English Reading Teaching

Xiandan Ran<sup>1, a</sup> and Chudan Chen<sup>1, b</sup>

<sup>1</sup>School of English, Zhejiang Yuexiu University, Shaoxing 312000, China

<sup>a</sup> 3528567131@qq.com, <sup>b</sup> 20132011@zyufl.edu.cn,

## Abstract

Nowadays, the cultivation of critical thinking has attracted great attention in the field of education at home and abroad. However, there are few empirical studies on the cultivation of critical thinking in China, it is even less in the field of foreign language teaching. The traditional foreign language teaching model in China focuses on the training of language skills and neglects the cultivation of thinking skills, which leads to more serious speculative absenteeism among English majors in China. The study selected 51 English major students to conduct a teaching experiment and further investigated 1) what is the impact of critical thinking training on students' critical thinking skills? 2) what is the change in students' critical thinking tendency after training? The study mainly draws a conclusion through the questionnaire survey and the analysis of the data with statistical software. The research shows that strengthening the cultivation of critical thinking lies not only in English contents and methods which should be closely related to the development of students' cognitive ability, but also in students themselves that they should change their traditional English learning attitudes and habits to form an autonomous and critical learning model.

## Keywords

Critical thinking; Critical thinking training; College English reading.

## 1. Introduction

### 1.1. Research Background

In the middle of last century, the United States set off an upsurge of critical thinking research. With the introduction and development of critical thinking, Chinese scholars also started the research of this area. Due to the long-term influence of traditional educational concepts in our country, the understanding of critical thinking ability is not deep enough, and the research on critical thinking ability starts relatively late compared with foreign countries. Since the reform and opening up, with the introduction of the new trend of thought, Chinese educators began to pay attention to the cultivation of critical thinking ability, but due to the lack of solid theoretical foundation, coupled with the influence of lack of experience and other factors, the research on critical thinking ability in China has not yet formed a complete theoretical system. Most studies are based on the translation and introduction of relevant foreign theoretical works, or only to explore critical thinking at the theoretical level. At the same time, the research on critical thinking is limited to a small number of fields, mainly related to psychology and philosophy.

There are many views on critical thinking in traditional academia, and there are different situations in the understanding of critical thinking in the process of education. In a general sense, critical thinking refers to someone's ability to make subjective judgments about something. Under the influence of examination-oriented education in China, teachers focus on students' language knowledge and language skills in teaching college English reading, while neglecting the cultivation of students' critical thinking ability. Therefore, paying attention to the

cultivation of students' critical thinking ability in college English reading teaching is helpful to develop students' innovative and creative ability, so that the trained students can meet the needs of real social development to prepare for the rapid development of social economy. In this case, it is necessary to cultivate English majors' critical thinking pertinently and effectively. At present, the research on critical thinking in English is mainly focused on writing, while there is little research on reading. Therefore, this study attempts to cultivate students' critical thinking ability by integrating critical thinking into English reading courses.

## 1.2. Research Significance and Purpose

It is of great significance to pay attention to the cultivation of students' critical thinking in college reading teaching. On the one hand, it helps to stimulate college students' interest and enthusiasm in English learning. Students can combine their existing knowledge and experience and screen, identify, classify and judge information according to their own critical wisdom to form a unique cognitive ability. On the other hand, through a series of teaching activities to distinguish between true and false, conjecture and rebuttal, students can be more actively involved in learning and cultivate their innovative thinking. Only in the process of critical thinking can students learn self-reflection, questioning and exploration, bold imagination, and then take the initiative to find and raise problems. This study not only points out the influencing factors of critical thinking in college English reading, but also attempts to make an empirical study on the cultivation of critical thinking of English majors in English reading courses. The purpose of this study is to understand the general characteristics of English college students' critical thinking ability and reading ability, and to explore whether critical reading teaching can improve students' English reading ability. This study fills the gap in the empirical study of this subject and provides some references and suggestions for the future study of critical thinking in college English reading.

## 2. Literature Review

### 2.1. Critical Thinking

There is still no definite conclusion on the denotation of critical thinking. However, the most representative and consensual definition was jointly studied by 46 experts led by the American scholar Peter Farjorn[1]. They believe that critical thinking is a purposeful, self-proofreading judgment, which points to interpretation, analysis, evaluation and inference, and explains the evidence, concept, method, standard or background on which the judgment is based. Critical thinking skills include reasoning, elucidation, analysis, analysis, evaluation and self-regulation, while the personality tendencies of critical thinking can be divided into self-confidence, truth-seeking, analytical, interrogative, systematic, open thinking and mature. In essence, critical thinking is a tool of exploration, a force for liberation education, and a powerful resource for individuals and citizens in social life [1]. Therefore, the goal of training excellent critical thinkers is to integrate and improve their critical thinking skills and critical literacy[2]. Thus it can be seen that through the cultivation of critical thinking, the main task of English teachers is to enable students not to follow blindly superstition in daily life, but to have their own ideas about what they hear and see, and to have the ability to analyze problems, judge value, form personal opinions, self-question and proofread [3].

#### 2.1.1. Definitions of Critical Thinking

The early research literature on critical thinking is mainly on Dewey's research. At the beginning of the 20th century, John Dewey, an American educator, put forward the concept of "reflective thinking" in his book *How Do We Think* and discussed what reflective thinking is, that is, to think continuously and carefully according to the reasons of belief or hypothetical knowledge and their inferences, emphasizing a cautious attitude and delaying judgment before

further rational exploration of hypotheses. In the 1940s, critical thinking has become a theme of American education reform. In 2014, influenced and inspired by Dewey, American educational psychologist Glaser [4] studied critical thinking from the perspective of child psychology in his book *An Experimental Research on the Development of Critical Thinking*. It introduced the attitude of critical thinking, the knowledge of rational reasoning and the skills of applying these attitudes and knowledge, and the term “critical thinking” has been formally put forward and established [5]. From the 1960s to the 1970s, critical thinking has increasingly become the focus of the American education movement. During this period, critical thinking is a way of thinking with cognitive skills, represented by Robert Ennis and so on. Critical thinking entered a preliminary prosperous period from 1970s to 1990s, and the research on works and papers of critical thinking increased significantly, such as Richard Paul. In addition, the critical thinking movement was carried out vigorously in the United States during this period. The research mainly includes three aspects: the relationship between critical thinking ability and English reading, the influence of the development of critical thinking ability on reading comprehension, and the cultivation of critical thinking ability in English reading teaching [6]. Although it has made great achievements, it is still in its infancy, the theoretical research is more than the practice in education and teaching, and it is difficult to operate some abstract concepts. Some scholars believe that special courses on critical thinking should be set up in China, while others think that critical thinking is an idea rather than a specific discipline [7].

## 2.2. Critical Reading

Critical thinking is the core of innovative ability. College English reading, as an important content and a way of English learning, is a main means to cultivate students' critical thinking ability. The basic premise of cultivating critical thinking ability is to carry out critical reading teaching, to create a good classroom atmosphere and educational environment, to change traditional reading concepts, and to form a teaching culture of “critical thinking reading”.

### 2.2.1. Definitions of Critical Reading

Critical reading is one of the effective ways to develop students' critical thinking in classroom teaching. Critical reading is a way of reading with a deep understanding of the text. It can not only make the reader distinguish the opinion from the fact, clarify the author's intention and attitude, but also help the reader to deduce the implication of the author, fill in the implied information in the text, and finally draw a conclusion in accordance with the conventional logic [8]. Critical reading is a kind of reading activity in which readers judge and evaluate the authenticity, validity and value of the text according to some methods and principles on the basis of a general understanding of the content of the text [9]. It usually includes three steps: understanding the text, evaluating the text and responding [10]. In a word, critical reading is an advanced stage in the reading process, which pays attention to rational evaluation on the basis of understanding the text.

### 2.2.2. Critical Thinking in Reading

English reading plays an important role in the process of English learning, and it plays an irreplaceable part in the improvement of individual English cognitive ability, oral communication ability and critical thinking ability, especially in universities. In reality, it is found that the teaching efficiency of English reading in some colleges and universities is not high, which undoubtedly has a negative impact on the cultivation of college students' critical thinking ability. With the deepening of college English reading teaching in China, the cultivation of critical thinking has gradually become an important part of college English reading training that can not be ignored at the present stage. It not only hinders the actual cultivation of college English reading, but also affects students' thinking ability after entering the society to a great extent.

### 2.2.3. Critical Reading Ability

Critical reading ability is the ability to use knowledge to solve practical problems through reading. In order to cultivate critical reading ability, we should first start with students' psychology, break the previous thinking framework of blind appeal to authority, and selectively appreciate and absorb relevant materials from a critical point of view. As far as college English teachers are concerned, they should do the following: first of all, cultivate college students' critical thinking and guide them to view problems from a dialectical point of view. Secondly, interactive and task-based classroom activities are taken as the main forms. What's more, it is suggested to enhance students' understanding of cultural background knowledge. The British and American culture is the inexhaustible source of English and the driving force for language to sustain life. College students' extensive knowledge of British and American culture in the process of learning English can not only stimulate their interest in learning, but also have an in-depth and comprehensive understanding of the language, laying a solid foundation for the improvement of reading ability.

### 2.3. Critical Thinking and Critical Reading

There is a dialectical relationship between critical reading and critical thinking. First of all, critical thinking is the theoretical basis of critical reading. Critical thinking requires critical evaluation of a certain information and allows people to receive information through evaluation. Critical thinking belongs to ideological critical evaluation. On the other hand, critical reading is to distinguish between the right and wrong information extracted from the text in a series of scientific ways. Therefore, it has intuitive and concrete characteristics. Therefore, from the conclusive point of view, critical thinking can provide theoretical support for conclusion evaluation in critical reading, so that people can truly reflect on the content of the text they read. Critical reading is the consolidation channel of critical thinking. In a word, critical thinking and critical reading complement each other in college English teaching activities, forming a dialectical and unified development relationship, so as to promote the improvement of college students' English reading ability and English learning ability.

### 2.4. Researches on Critical Thinking in China and Abroad

#### 2.4.1. Researches on Critical Thinking in China

The research on critical thinking started relatively late in China. It was not until the 1980s that critical thinking attracted the attention of Chinese scholars. In China, Professor Liu Rude [11] first began to explore the connotation, significance and training ways of critical thinking. In his view, "critical thinking refers to the cognitive process of thinking through active thinking to make reasonable decisions about what individuals do and believe, and to make personal judgments on the authenticity, accuracy, and evaluation of the knowledge they have learned. Emphasis is placed on choosing what you think is the most important and correct through your own analysis, argumentation and experiments". At the same time, he stressed the importance of cultivating students' critical thinking ability. Teachers should pay attention to teaching students' thinking skills in class and place more emphasis on the relationship between thinking ability and real life. Subsequently, Professor Luo Qingxu [12] conducted relevant research on the cultivation of critical thinking. He believes that in the field of critical thinking education, we should focus on developing invisible pedagogical methods that are not mature enough. Therefore, how to form an atmosphere of critical thinking education in schools is worthy of educators' in-depth thinking. In the past ten years, foreign language scholars in China have begun to pay attention to the combination of critical thinking ability and language teaching. The Wen Qiufang team of the China Foreign Language Education Research Center began to adaptively improve the tools for measuring the critical thinking ability of Chinese foreign language majors and make them more suitable for Chinese students on the basis of the original

theory, so that the measurement results have good reliability and validity. Subsequently, Professor Wen Qiufang [13] put forward some positive suggestions on cultivating the thinking ability of foreign language majors. Since the 1990s, logic teachers have been trying to reform the logic curriculum which is recognized to be divorced from reality with the content of critical thinking. In 2003, Peking University, China Youth College of political Science, Renmin University of China and China University of Political Science and Law successively offered this course, and the corresponding teaching materials were also listed as national recommended teaching materials. In recent years, translation and self-compiled teaching materials have been published almost every year. In 2008, Qiming College of Huazhong University of Science and Technology offered a critical thinking course guided by inquiry and innovation. As far as colleges and universities across the country are concerned, the proportion of colleges and universities that start critical thinking courses is still small. Peking University has held the National Seminar on Critical Thinking Teaching and the Advanced Training course for critical thinking teachers, which has been held for four times by July 2014. As of June 2013, Qiming College of Huazhong University of Science and Technology has held a national seminar on critical thinking course construction for three consecutive years. In China, the research on critical thinking is still in the stage of exploration and development, and there is still a lot of room for development in the construction and practical application of the theoretical system of critical thinking with Chinese characteristics. In China, most scholars agree that critical thinking is divided into two elements: skill and attitude [14] [15] [16] [17]. For example, the translation of critical thinking measurement tools should be revised according to the actual situation of primary school students, middle school students and college students; a survey of critical thinking skills and attitudes should study the correlation between critical thinking and learner characteristics, critical thinking training and application strategies, multi-disciplinary and wide-field cooperation to study critical thinking from a unique and novel perspective. The problems existing in the cultivation of critical thinking of domestic college students lie in: First of all, the concept of critical thinking is only introduced, not combined with the reality of China; secondly, there is a lack of diachronic research and dynamic investigation of college students' critical thinking; in addition, it ignores the positive transfer of college students' critical thinking training; finally, the ignorance of the construction of critical thinking classroom culture is another issue.

In general, the research on critical thinking in China has achieved a lot of important research results, critical thinking research has also become an important discipline, which has been widely concerned by the society. At present, domestic scholars have reached a consensus on strengthening the cultivation of students' critical thinking, and some colleges and universities have begun to set up courses related to critical thinking, which play an important role in cultivating students' critical thinking and innovative ability. It should be pointed out that although China has made good achievements in critical thinking research and education, there are still many problems, and there is still a large gap compared with the developed countries in the world. At present, there is still a hot debate in the academia on the definition and conceptual interpretation of critical thinking in our country. In addition, the research on critical thinking in China is mainly focused on theoretical research, while the empirical research is relatively few. Through the above analysis, we can see that China has made a lot of achievements in the research of critical thinking, but there is still a gap between China and the developed countries in terms of research depth and breadth, so it is necessary to strengthen the research in these aspects.

#### **2.4.2. Researches on Critical Thinking Abroad**

In the era of knowledge economy, critical thinking is a necessary skill and attitude for innovative talents. Since Dewey, an American philosopher, put forward the concept that "reflective thinking is to think actively, continuously and carefully based on the basis and possible inferences behind

beliefs or hypothetical knowledge” in 1910, many people have given a series of confusing and seemingly contradictory definitions of critical thinking.

Knowledge and skills should also correspond to the attitude and behavior tendency of critical thinking [18] [19] [20] [21]. Dewey, Glaser, Smith, Ennis, Hitchcock and others believe that critical thinking is only an assessment of existing intellectual achievements, such as hypotheses, sentences and arguments. Ennis and Paul believe that critical thinking is broader and that it also creates rational outcomes, such as explaining complex phenomena, making decisions in complex situations, and answering difficult problems [21]. As to whether critical thinking is a skill or an attitude, Glaser [4] and Ennis [18] tend to define critical thinking as a skill. Paul [19] defines critical thinking as an attitude. Ennis [20] later emphasized that critical thinking is both a skill and an attitude. Glaser [4], Ennis [18] and Paul [19] believe that critical thinking is universal at least in some aspects, but Mark Parker believes that critical thinking is bound to be different in different fields. Critical thinking as a skill, Hitchcock [21] believes that “the skill elements of critical thinking have the following in common: 1) clarifying meaning; 2) analytical demonstration; 3) evaluating evidence; 4) judging whether the derivation is reasonable; 5) drawing reliable conclusions.” In the era of knowledge economy, critical thinking is a necessary skill and attitude for innovative talents. Since Dewey, an American philosopher, put forward the concept of “reflective thinking is to think actively, continuously and carefully based on the basis and possible inferences behind beliefs or hypothetical knowledge” in 1910, many people have given a series of confusing and seemingly contradictory definitions of critical thinking.

Critical thinking is a kind of thinking that can be applied to all subjects with the goal of making a clear judgment. Critical thinking includes carefully demonstrated evidence, reflection, review and delayed judgment. In terms of critical thinking as a habit and attitude. Hitchcock [21] believes that “the habits and attitude characteristics of critical thinking have the following in common: 1) open-minded; 2) just; 3) seek evidence; 4) fully understand as much as possible; 5) pay attention to other people’s views and their reasons; 6) the degree of belief matches the evidence; 7) willing to consider alternatives and revise beliefs”. With regard to the evaluation norms and standards of critical thinking, only Robert Ennis [20] put forward the evaluation norms of critical thinking, while the standards of critical thinking have not been involved. As for critical thinking testing tools, a set of testing tools developed by Alec Fisher and Michael John Scriven is widely used in the U.K.. In the U.K., thousands of secondary school students take the Oxbridge and Royal Art Society exams every year. In the United States, there are many tools for developing mature critical thinking. For example, the Watson-Glaser critical thinking ability scale (2002), also known as Watson-Glaser Critical Thinking Appraisal, tests 5 aspects of reasoning, hypothesis, deduction, interpretation and evaluation of critical skills; California critical thinking tendency questionnaire (1964) (California Critical Thinking Disposition Inventory) tests 7 dimensions of critical thinking personality tendencies: truth-seeking, open thinking, analytical ability, systematic ability, self-confidence, curiosity and cognitive maturity of critical thinking. The Ennis-weir critical thinking scale (1985) (Ennis-Weir Critical Thinking Essay Test) measures students’ reflective and open thinking abilities. Throughout the relevant research abroad, critical thinking should include the following aspects: 1) critical thinking is based on rational reflection on a problem and its related evidence, and its core feature should be bold questioning and cautious assertion; 2) critical thinking should include skills, habits and attitudes; 3) critical thinking can be measured and nurtured.

By analyzing the influence of foreign critical thinking on the cultivation of innovative talents, it plays an important role in popularizing critical thinking education in our country. In addition, we should also pay attention to the cultivation of students’ awareness of questions, let students develop the habit of asking more questions, and promote students to think more and communicate more, so as to improve students’ critical thinking ability.

### 3. Research Methodology

In order to ensure that this study is conducted smoothly and completely, a reasonable and feasible research design is proposed. This experimental study is a quantitative study. This part provides a detailed introduction to experiments, including research questions, research participants, experimental instruments, experimental procedures, and the collection and analysis of experimental data.

#### 3.1. Research Questions

Based on the above objectives, this experiment investigates whether there are significant differences between learners under the guidance of critical thinking and learners under traditional teaching methods in terms of students' reading ability, and the specific questions are listed as follows:

1. Does critical thinking help improve students' reading skills?
2. What are the factors that influence critical thinking on students' reading ability?
3. What is students' attitude towards critical thinking?
4. What are the reasons for students' lack of reading ability and what are the conditions needed to cultivate students' critical thinking in the classroom?

#### 3.2. Participants

The participants in this experiment were mainly composed of 51 students from Zhejiang Yuexiu University, majoring in English. It mainly collected students' understanding of critical thinking through questionnaire surveys, analyzed the factors affecting students' critical thinking through data consultation, and how to cultivate students' critical thinking skills in future reading classes.

#### 3.3. Research Instruments --Questionnaire

Totally there are two questionnaires involved in the whole research. One of them is the questionnaire about critical reading strategies (CRS) which are designed by the author with reference to Wu [22] to get information about students' awareness and frequency of using critical reading strategies. The questionnaire consists of two parts: the first is about students' personal information while part two is composed of 31 questions related to the critical reading strategies, each question using five-point Likert scale contains 5 items which represent the using frequency of CRS: 5=always, 4=often, 3=sometimes, 2=seldom, 1=never. Concretely these strategies can be classified into 6 categories: illustrating, analyzing, evaluating, inferring, self-regulating, interpreting (Table 3). The same CRS questionnaire serves both at pre-test and post-test to get information about students' using awareness and using frequency of CRS.

To test whether critical thinking is effective, the tools involved in this experiment are mainly questionnaires. Questionnaire one is mainly adopted. This study uses an internal consistency coefficient to determine the reliability of the scale. According to the verification of many scholars at home and abroad, it is generally believed that the internal consistency coefficient between 0.6 and 0.7 indicates that the questionnaire reliability is good, between 0.7 and 0.8 indicates that the questionnaire reliability is good, between 0.8 and 0.9 indicates that the questionnaire reliability is ideal, and above 0.9 indicates that the questionnaire reliability is very ideal and can be used to investigate learners' critical reading awareness. The data were statistically analyzed using SPSS 25.0, and the reliability analysis results of the specific dimension are shown in the table:

**Table 1.** Reliability Test for Each Dimension

	No. of Items	Cronbach's Alpha	Total table Cronbach's Alpha
Illustrating	3	0.781	
Analyzing	3	0.712	
Evaluating	3	0.884	
Inferring	3	0.687	0.945
Interpreting	3	0.897	
Self-regulation	3	0.892	
Affecting factors	13	0.992	

The Cronbach's alpha values for each dimension of the scale are as follows: The Cronbach's Alpha value for Illustrating dimension is 0.781, the Analyzing Cronbach's Alpha value is 0.712, the Cronbach's Alpha value for the Evaluating Dimension is 0.884, the Cronbach's Alpha value for Inferring dimension is 0.687, and the Cronbach's Alpha value for the Interpreting dimension is 0.897, the alpha value of Cronbach's in the self-regulation dimension is 0.892, the alpha value of Cronbach's in the Affecting factors dimension is 0.992, except for the internal consistency system of the Inferring dimension, all other dimensions are greater than 0.7, and the Cronbach's alpha value of the total table is 0.945. The results of validity test are shown in the following table:

**Table 2.** Scale KMO and Barlett Test Result

Tests for KMO and Bartlett		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.772
	Approx. Chi-Square	1491.214
Bartlett's Test of Sphericity	df	465
	Sig.	.000

As shown in the table above, the scale KBO=0.772>0.7, and the Bartlett spherical test  $P=0.000<0.05$ , the P-value is significant, indicating that the data are very suitable for factor analysis and the reliability is good, which provides strong support for the next research.

### 3.4. Research Procedures and Data Collection

The experiment was conducted primarily in the class in December. The researchers distributed a pre-test questionnaire to the class, and a critical thinking assessment survey to investigate students' attitudes toward critical thinking, then designed a questionnaire based on the feedback of the students to measure whether there was a significant difference in the English proficiency of the students in the traditional classroom and the reading class under critical thinking. Finally, did a interview about how to cultivate college students' critical thinking ability. The questionnaire was distributed to the class group by WeChat. 51 valid questionnaires were finally collected, and the results were output by the questionnaire star, and the statistical analysis was carried out by SPSS 25.0 to verify its effectiveness, and the results showed that there was no significant difference before and after the experiment. This experiment is a quantitative study. The quantitative data of the questionnaire results are processed on the SPSS software, the experimental results are statistically analyzed, and the sample test is carried out to ensure the objectivity and scientificity of the experimental results, and through the analysis



of quantitative data, it is clearly shown that the critical thinking strategy has a certain impact on the students' reading ability.

**Table 3.** Description of Critical Reading Strategies

No.	CRS	Question No.	Details
1	Illustrating	9	When reading, the article genre will be divided according to the characteristics of the article, the author's intention will be interpreted according to the author's wording, and the article content will be summarized according to the title or paragraph of the article.
2	Analyzing	10	When reading, actively identify the rhetorical techniques used in the article, actively divide the paragraph structure, and analyze the author's views in combination with the author's background of the times.
3	Evaluating	11	After reading, judge the author's point of view from multiple angles, assess the credibility of the article's point of view, and evaluate the acceptability of the article's point of view.
4	Inferring	12	When reading, the article is predicted in context, the author is guessed at the time, and the article is based on the conclusion of the suggestion or the expected possible consequences.
5	Self-regulation	13	After reading, I will explain the author's views and rationality or the validity of the argument in my own words, and after reading, I will put forward my own views according to the article, and will look for suitable arguments to argue my own views.
6	Interpreting	14	After reading, take the initiative to evaluate your own views or opinions, and take the initiative to correct your own views and inferences. Take the initiative to analyze what factors affect your thinking during the reading process.

## 4. Results and Discussion

This section mainly discusses the results of the influencing factors of critical reading thinking ability based on the results we have collected from the questionnaire.

### 4.1. Students' Positive Attitude towards Critical Thinking Strategy

To investigate students' attitudes toward critical thinking, the authors conducted a critical thinking assessment survey prior to the questionnaire design. This questionnaire, which involves 13 questions, can be divided into the following 5 groups: teaching activities, teaching content, questioning, degree of fondness, and cultivating of abilities. Different attitudes are expressed with different scores, complete satisfaction is expressed by A, satisfaction is expressed by B, partial satisfaction is expressed by C, dissatisfaction is expressed by D, and complete dissatisfaction is expressed by E.

**Table 4.** Students' Attitudes towards CRT

Classification	items	A	B	C	D	E
Degree of fondness	1	81.6%	13.8%	3.6%	1.0%	0.0
	2	79.1%	11.8%	6.1%	1.7%	1.3%
	3	70.8%	18.9%	8.6%	1.7%	0.0
Teaching content	4	77.2%	16.4%	3.9%	1.3%	1.2%
	5	79.1%	8.8%	7.8%	5.3%	0.0
Teaching activities	6	74.1%	9.1%	7.6%	9.2%	0.0
	7	76.4%	14.5%	2.9%	4.1%	2.1%
	8	84.2%	9.1%	5.3%	1.4%	0.0
	9	72.2%	10.5%	8.3%	7.8%	1.2%
Questioning	10	70.2%	19.8%	5.7%	4.3%	0.0
	11	72.1%	14.8%	7.6%	3.0%	1.4%
Cultivating of abilities	12	82.4%	7.3%	3.6%	6.7%	0.0
	13	80.1%	10.3%	7.1%	1.3%	1.1%

Table 4 shows detailed data collected from the questionnaire. On the one hand, from the perspective of students, 95.4% of the teacher-student relationship is harmonious and respectful in the critical thinking classroom, which reflects the students' preference for this teaching method, 89.7% of the students are willing to experience the role of the controller, so most students are also eager to get the opportunity to express their views and present themselves. On the other hand, in terms of teaching content, 93.6% of students prefer to read materials independently, and 87.6% students prefer teachers to introduce them to some relevant background of the materials in order to be able to better understand the text and reduce reading disabilities. However, only 1.3% of students do not like reading lessons, and 1.2% of students dislike reading materials, which implies that some textbook reading materials may not be suitable for critical reading, so teachers should add some novel reading materials to the English classroom.

Secondly, in the classroom activities, 83.2% of the students preferred the various activities designed by the teacher, and 90.9% of the students participated in the activities. There are also 16.8% of students who do not like to participate in activities, which may be closely related to their personality and way of thinking. 93.3% of the students attach importance to the teacher's ability to drive the classroom atmosphere, which helps to stimulate their positive thinking through a variety of activities. 82.7% of students believe that brainstorming can better simplify reading tasks and understand texts. However, 17.3% of the students take the opposite attitude, believing that discussion do not develop students' ability to think independently. In addition, in terms of asking questions, 90% of students support asking questions, which helps to improve students' critical thinking and innovative thinking. 86.9% students believe that the cultivation of critical thinking skills is a long-term process, and it is the most basic ability required for critical reading. Finally, from the perspective of cultivating students' abilities, 89.7% of students believe that their critical thinking ability and reading ability have improved significantly after practicing for a period of time, and 90.4% of students believe that critical thinking helps to improve their reading comprehension ability. They believe that critical reading not only helps them better understand the text, but also further improves their writing skills, and they are free to express their ideas. In short, the application of critical thinking in English reading classroom is very effective, it can strengthen their interest in learning, improve their enthusiasm for learning and reading ability. Judging from the data collected, students have a positive attitude

towards teaching critical reading. There are many factors that explain this phenomenon, first of all, through critical reading students' interest in learning has improved. In addition, critical teaching enlivens the classroom atmosphere by providing a wide variety of activities for students to participate in. Finally, as a new teaching method, it meets the psychological needs of most students. Therefore, most students are positive about the teaching of critical reading.

All in all, based on all the data analysis, it can be concluded that critical thinking can improve students' ability to use critical strategies, and it can improve the critical reading ability of English learners, so it is necessary to develop a set of practical and useful teaching models in future English reading classes.

## 4.2. Discussion of the Influencing Factors of Critical Thinking Ability

This section mainly discusses the results of the influencing factors of critical reading thinking ability. Based on the results we have collected from the questionnaire and the interview, the following sections elaborate the research results.

### 4.2.1. The Discussion of Questionnaire

The reasons affecting the development of critical reading thinking ability and the statistical results are shown in the table below.

**Table 5.** Feedback of Questionnaire

Items	Totally agree	Agree	Generally agree	Disagree	Totally disagree
(1) The class hours are tense and there is no spare time for critical reading thinking skills teaching.	1.96%	31.37%	50.98%	11.76%	3.9%
The school has not set up relevant thinking training courses.	11.76%	25.49%	52.94%	7.84%	1.96%
(3) Teachers do not have a clear understanding of the concept and do not understand from what aspects reading teaching should cultivate students' critical thinking ability.	5.88%	19.61%	52.94%	13.73%	7.84%
(4) Teachers pay more attention to students' test scores than their thinking ability.	5.88%	25.49%	49.02%	11.76%	7.84%
The existing reading materials are not suitable for critical thinking skills training, such as intensive reading of articles in textbooks.	11.76%	25.49%	47.06%	11.76%	3.92%
The examination of reading ability is less related to critical thinking skills.	11.76%	29.41%	45.1%	11.76%	1.96%
Students' language proficiency is low, and it is difficult to understand and express their views.	5%	29.41%	45.1%	13.73%	1.96%
Students pay too much attention to whether the answer is correct or not, ignoring the practical significance of the article.	25.53%	25.49%	43.14%	5.88%	1.96%
Students do not have a deep understanding of the concept of critical thinking	11.76%	43.14%	37.25%	5.88%	1.96%
Students' consciousness of cultivating and improving their thinking ability is not strong.	9.8%	41.18%	41.18%	5.88%	1.96%
Parents pay too much attention to their students' grades	13.73%	29.41%	45.1%	9.8%	1.96%
Cultural differences between China and foreign countries lead to unequal development of critical thinking skills.	5.88%	45.1%	39.22%	7.84%	1.96%
(13) Under the current social environment, the cultivation of students' critical thinking skills is neglected.	11.76%	43.14%	29.41%	11.76%	3.92%

First of all, as shown in the table, from the school's point of view, due to the shortage of class hours, there is no spare time for critical reading thinking skills teaching. 50.98% of the students generally agree, 31.37% of the students agree very much; 52.94% of the students reported the school do not set up relevant thinking training courses, and 25.49% of the students agree very much. The existing reading materials are not suitable for critical thinking skills training, 47.06% of the students generally agree, 25.49% of the students agree very much. The assessment of reading ability seldom involves critical thinking skills. 45.1% of the students generally agree, 29.41% agree, and 11.76% disagree.

Secondly, it is reported that teachers do not have a clear understanding of the concept and do not understand from what aspects to cultivate students' critical thinking ability. 52.94% of the students generally agree, 19.61% agree and 13.73% disagree; teachers pay more attention to test scores rather than thinking ability, 49.02% of students generally agree, 25.49% agree, and 11.76% disagree.

Additionally, from the perspective of the students themselves, the students' language proficiency is low, and it is difficult to understand and express their views. 45.1% of the students generally agree, 29.41% agree, and 13.73% disagree; students pay too much attention to the correctness of the answers, while ignoring the practical significance of the article. 43.14% of the students generally agree, 25.49% of the students agree. Students do not have a deep understanding of the concept of critical thinking, 37.25% of students generally agree, 43.14% of students agree; students do not have a strong awareness of the cultivation and improvement of their thinking ability, and 41.18% of students generally agree and agree very much. Only 5.88% of the students disagreed.

Finally, from the perspective of parents and society, parents attach more importance to students' grades, 45.1% of the students generally agree, 29.41% of the students agree, and 9.8% of the students disagree; in the current social environment, 29.41% of the students generally approve of neglecting the cultivation of students' critical thinking skills, 43.14% of the students agree and 11.76% of the students disagree.

#### **4.2.2. The Discussion of Interview**

As for how to cultivate college students' critical thinking ability, from the results of the interview, most students think that the school should offer more relevant courses, create a good learning atmosphere, and encourage students to train critical thinking; some students think that teaching should not be programmed and mechanized; some students think that college students themselves should think more and practice more. Some students think that teachers should pay attention to the cultivation of critical thinking skills in English classroom; secondly, teachers also need to improve their own teaching effectiveness and design teaching activities for students to cultivate critical thinking skills. Under the influence of the current social background, especially the epidemic of COVID-19, in order to improve the critical thinking ability of college students in the prevention and control of major epidemic situation, colleges and universities should organically link and integrate the learning of college students' knowledge system with the management of campus epidemic situation. First, combine major epidemic response with professional learning, reflect critical thinking strategies in teaching design, and add epidemic prevention and control knowledge and cases to in-depth critical reading. The second is to combine major epidemic response with general education, especially formal policy education, and hold thematic lectures and special discussions. The third is to combine the response to major epidemics with the forging of critical thinking. During the period of epidemic prevention and control, college students need to think independently to form their own point of view, neither blindly following the crowd nor appealing to authority.

## 5. Conclusion

### 5.1. Major Findings

This study mainly explores the application of critical strategies in the teaching of college English reading, and the influencing factors of critical thinking in college English reading. The main objectives of this study are to cultivate students' awareness of critical reading, improve students' reading comprehension ability, develop critical thinking learning habits, and make critical strategies widely used in higher education. Based on the data analysis above, the following results were found.

First of all, the data through the questionnaire survey shows that most students believe that the way of thinking and English skills in English reading learning are more important than English knowledge and learning methods, which also clearly shows the application of critical strategies is conducive to cultivating learners' critical reading awareness. Secondly, according to the results of the questionnaire survey, students develop the habit of independent thinking through critical thinking in the classroom, and the use of critical strategies greatly improves students' reading comprehension ability, and students have a great sense of achievement and are more confident in reading class. This is precisely the application of critical strategies that promotes the learner's ability to read English. Thirdly, through interviews of some English majors, they believe that the training of critical strategies can stimulate their enthusiasm and interest in learning English, and help them actively participate in a variety of activities in the classroom, and be more willing to freely express their ideas and opinions.

### 5.2. Pedagogical Implications

The main research results show that critical reading teaching not only has a positive impact on the critical reading awareness and reading comprehension ability of English learners, but also provides teaching inspiration for college teachers in the practice of reading classes in the future. First of all, schools need to pay more attention to the cultivation of critical thinking among college students. In order to adapt to the development of the times and the continuous progress of society, the requirements for college students are getting higher. Therefore, universities should reform traditional teaching methods, introduce critical teaching methods, and cultivate students' critical awareness and ability. Of course, teaching activities should be designed to help cultivate students' creativity and imagination. Secondly, to create a classroom thinking culture, the formation of critical spirit requires the joint efforts of the whole society, the formation of a school environment, social environment and family environment conducive to the growth of critical spirit. The so-called culture of thinking, Wu Hongzhi [22] believes that it is not a set of special practices or some kind of general expectation of people who think. The classroom is transformed into a community of inquiry, the teacher becomes a collaborator, a guide, and students form thinking traits and personality tendencies such as curiosity, criticism, hypothesis, and reasoning by participating in the activities of the inquiry community. Finally, critical thinking skills need to be developed. Teachers can embody 6 critical thinking skills before, during, and after reading, combining the characteristics of pre-reading, asking questions, finding hypotheses, analyzing ideas, synthesizing, comparing, evaluating, reflecting, and arguing into reading teaching.

### 5.3. Limitations of the Study

This study focuses on the impact of critical thinking in college English reading classrooms, and the teaching of critical reading in college English reading. The results show that critical thinking has a great influence on English reading in college, and the teaching of critical reading cultivates students' critical awareness to a certain extent and improves students' reading comprehension ability. However, the study still has significant limitations.

First, since the research instruments in this study only involved questionnaires and interview, the validity and credibility of this study cannot be fully demonstrated. The data collected from questionnaires alone do not necessarily prove what factors influence a complex concept of critical thinking. Secondly, the 51 valid sample data collected by this questionnaire are mainly from students majoring in English at Zhejiang Yuexiu University, the number of experimental participants is relatively small, ignoring other majors and universities, if the scope of research is expanded to other majors and universities, then the experimental results will be more practical, providing reliable data for future research in the field of critical thinking. Finally, the study mainly explores the influence of critical thinking and critical reading teaching in college English reading, not involving listening, speaking, and writing, so the research scope of this study is still relatively narrow.

#### 5.4. Suggestions for Further Study

In the strategy of cultivating critical thinking in college English reading, the authors give the following tips. First of all, we must follow the development of critical thinking, in the teaching of reading, we can promote the transformation of students' thinking from dualism to pluralism and eventually to an advanced stage by asking questions. It is necessary to promote guided and discussion-based reading, and in reading teaching, guide students to ask questions about reading content and stimulate students to think positively. Secondly, to change the concept of teaching and innovate teaching methods, teachers are suggested to use new media to change traditional teaching methods, such as flipped classroom. Finally, teachers need to improve their own teaching methods, guide students to actively participate in all aspects of teaching, pay attention to the overall development of students. The development of the future society needs innovative talents, so it is more important to strengthen the cultivation of critical thinking ability in university English teaching, and only by strengthening the cultivation of critical thinking ability in university English reading teaching can we lay a solid foundation for cultivating innovative talents.

#### References

- [1] Facione, J. Critical thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction. (Millbrae, CA: Academic Press, California 1990).
- [2] Lu Ziwen. Construction of Critical Dimension of English Education. Yilin Publishing House, Nanjing 2018 ), p. 25-31.
- [3] Chen Zehang, Wang Qiang, Qian Xiaofang. On the Quality of Thinking and its Development in the Core Literacy of English Subject. Course Materials and Teaching methods, 20 (2019) No.1, p. 95-97.
- [4] Glaser, E. An Experiment in the Development of Critical Thinking. (New York Advanced School of Education at Teachers College, Columbia University, 1941).
- [5] Wei Xiaoping. An Overview of the Study of Critical Thinking Abroad. Collection of Science and Education, 32 (2014 ) No.2, p. 42-43.
- [6] Wang Sheng. A Study of Critical Thinking in English Reading Teaching. Quality Education in Western China, 11 (2017) No.3, p. 72-73.
- [7] Wang Lu. Critical Thinking Skills Testing and Training. Science and Technology economy and Society, 25 (2015) No.1, p. 10-17.
- [8] Pirozzir, C. Critical Reading, Critical Thinking: a Contemporary Issues Approach (Addison— Wesley, New York 2003).
- [9] He Qiangsheng, Liu Xiaoli. Critical Reading and its Strategies. Contemporary Educational Science, 30 (2003) No.19, p. 54-55.

- [10] Chen Zehang. Teaching and Research of English Reading. (Foreign Language Teaching and Research Press, Beijing 2016), p.11-28.
- [11] Liu Rude. On the Significance and Connotation of Critical Thinking. Higher normal Education Research, 15 (2000) No.1, p. 56- 61.
- [12] Luo Qingxu. The Structure, Training Mode and Problems of Critical Thinking. Journal of Guangxi University for nationalities: natural Science Edition, 10 (2001) No.3, p. 215-218.
- [13] Wen Qiufang, Liu Yanping, Wang Haimei, Wang Jianqing, Zhao Cailan. A Study on the Revision and Reliability and Validity of the Speculative Ability of Chinese Foreign language College Students. Foreign languages, 18 (2010) No.4, p. 19- 26.
- [14] Kong Lingcui. On the Cultivation of Critical Reading Thinking Ability. Journal of Leshan normal University, 30 (2001) No.1, p. 85-89.
- [15] Liu Siyuan. English Reading Teaching and the Cultivation of College Students' Critical Thinking Ability. Reading and Writing (Journal of Education and Teaching), 7 (2010) No.5, p. 34-40.
- [16] Miao Siping. The Inspiration of American Critical Thinking Movement to the Quality Education of College Students. Educational Research of Tsinghua University, 12 (2007) No.3, p. 101-105..
- [17] Dewy, J. How We Think. (Boston, New York and Chicago. 1910).
- [18] Ennis, R. A. Concept of Critical Thinking: a Proposed Basis for Research in the Teaching and Evaluation of Critical Thinking Ability. Harvard Educational Review, 32 (1962) No.5, p.81-111.
- [19] Paul, R. Teaching Critical Thinking in the“Strong”Sense: a Focus on Self- deception, World- Views, and a Dialectical Mode of Analysis.Information Logic Newsletter, 2 (1982) No.8, p. 2-7.
- [20] Ennis R. A. Logical Basis for Measuring Critical Thinking Skills. Educational Leadership, 2 (1985) No.7, p. 44-48.
- [21] Hitchcock, D. Critical Thinking: A Guide to Evaluating Information. (Toronto: Methuen,2012).
- [22] Wu Hongzhi. On Critical Thinking. Journal of Guangzhou University, 20 (2004) No.11, p. 20-28.