

A Comprehensive Review: Exploring Educators' Insights on Cultivating Critical Thinking Ability Among Secondary School Students in English Writing Instruction in China

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Abstract

This review critically reviews the research on cultivating critical thinking abilities in secondary school English writing classes. By examining the relevant factors of critical thinking abilities' importance to secondary school students, it identifies the current state of development of critical thinking abilities in English writing among Chinese secondary school students and describes practical principles from a teacher's perspective within authentic teaching scenarios. This review adopts Documentary Analysis Method and Bibliometric Analysis Method to analyze the obtained data. The main findings of the review are delineated into three main sections to explore the interaction between the teacher's perspective and the student's perspective in the context of English writing classes: 1) Integration of critical thinking instruction and cultivation in English writing teaching, including theoretical model construction, subject integration, and innovation; 2) The significance of implementing critical thinking instruction in English writing, such as the structuring and organizing of writing processes based on critical thinking skills, and the role of sub-skills of critical thinking; 3) Diverse strategies for cultivating critical thinking abilities. Moreover, the review lists major strategies, such as writing diaries and feedback, writing-thinking models, one-on-one guidance strategies, and transformative questioning methods, to facilitate the integration of critical thinking into written forms. This review exposes the gap between teaching objectives and classroom practices resulting from the lack of attention to critical thinking in current secondary school English writing instruction. It also provides insights for future research in integrating critical thinking approaches into secondary school English writing.

Keywords: Critical thinking Ability, Middle school students, English Writing Teaching

1. INTRODUCTION

Since the 21st century, many countries have paid more and more attention to technological innovation and have placed a greater emphasis on cultivating talents with critical thinking and innovative spirit in their education systems. Since 2010, China has paid more attention to how to cultivate innovative talents (Liu, 2020). The introduction of *The Outline of Medium and Long Term Planning of National Educational Reform and Development (2010-2020)* placed a strong emphasis on quality education and aimed to enhance students' innovative spirit and problem-solving

skills (Liu, 2020). The program included measures to improve the quality of teaching, promote interdisciplinary education, and encourage students to participate in research and innovation activities.

Thinking ability is a critical component of the necessary thinking traits for innovative talents. The key to developing thinking capacity is the improvement of critical thinking ability. To reveal the essence of things and understand their inner laws demands regular revision and adjustment of one's own thinking. Critical thinking involves analyzing and evaluating information in order to form a well-reasoned judgment or conclusion. This skill is essential for innovation because it allows individuals to question assumptions, challenge existing ideas, and generate new and creative solutions to problems. The degree of critical thinking ability is inextricably linked to the spirit of adventure and innovative skills of innovative talents (Ma, 2020). In other words, critical thinking is an important foundation of creativity, an essential component of thinking quality, and an essential ability for students' lifelong learning and development. As it helps individuals to acquire new knowledge and skills, adapt to changing situations, and solve complex problems. By developing critical thinking skills, students can become more independent learners and better equipped to navigate the challenges of the modern world. The ability to think critically is the foundation of original thinking, the wellspring of creativity, and the power of critical thinking skills (Spector & Ma, 2019). Developing strong critical thinking skills can certainly enhance our ability to generate and implement innovative ideas. At the same time, in the current information age, all kinds of information always appear in different forms and through different media. However, not all of this information is reliable or accurate. It can be said that this is an era in which individuals need to identify, analyze, judge, and make decisions. Without critical thinking, individuals may be vulnerable to misinformation, manipulation, and scams. In contrast, those who have developed strong critical thinking skills are better equipped to evaluate the credibility and reliability of information and are less likely to fall prey to misinformation. Whether in daily life or academic research, people need to identify true and false, judge pros and cons, facts and opinions, and carry out effective problem-solving activities, so it is especially important to have critical thinking.

Therefore, it is essential to promote and develop critical thinking skills among individuals through education and training. This will enable them to navigate through the overwhelming amount of information available and make informed decisions that can positively impact their lives and the world around them. The rapid advancement of science and technology has also made critical thinking one of the 21st century's top educational priorities (Changwong et al., 2018). The purpose of education has altered instructors' responsibilities. Teachers now serve as trainers and guides rather than information carriers. In order for students to gradually grasp the abilities of critical thinking through exercise and then create critical thinking, teachers are required to exercise doubts, judgments, and creative thinking for them. The Chinese education community stays current by discussing and studying critical thinking. The 18th National Congress of the Communist Party of China (Guan, 2018) pointed out that the focus of critical questioning is that individuals should have problem awareness, be able to comprehensively analyze problems, and make the best choice independently. In July 2019, The 9th National Symposium on Critical Thinking and Innovation Education pointed out that critical thinking is a necessary condition for promoting technological development and social progress, and it is an essential ability for innovative talents. Hence, developing critical thinking skills is crucial for individuals to effectively analyze and solve problems, make informed decisions, and contribute to the advancement of society.

In 2013, China revised the English curriculum for general high schools, promulgated The General High School English Curriculum Standards (2017), and put forward the concept of thinking ability. For the first time, thinking ability was included in the objectives of the middle school English curriculum, which means that the cultivation of thinking ability has become a common goal in the stage of basic education. At the same time, these standards (Wang & Wei, 2018) pointed out that middle school students should be able to think independently and dialectically while mastering basic language knowledge. The thinking ability of students in middle school develops rapidly, so cultivating students' critical thinking at this stage is not only conducive to the improvement of thinking level, but also lays a good foundation for their continued learning and lifelong development. In other words, language acquisition that lacks critical thinking skills prevents students from handling complex language and prevents their ability to grow their language skills over time. From a cognitive perspective, learning English as a second language is intimately related to critical thinking (Zhao, 2021).

As the key content of middle school English teaching, English writing is also an important way to develop middle school students' critical thinking skills (El Soufi & See, 2019). Writing is one of the most critical courses in English teaching. Whether students can understand the text correctly and profoundly depends to a large extent on their critical thinking in addition to the necessary language knowledge and background. Through the process of writing, students learn to analyze information, identify arguments, and evaluate evidence, so as to express their thoughts and ideas clearly, logically, and coherently. In writing instruction, teachers assist students in organizing articles using analysis, judgment, reasoning, synthesis, and other thinking abilities in order to strengthen the article's logic, foster the growth of critical thinking, and raise the standard of writing.

2. LITERATURE REVIEW

2.1 Critical Thinking Ability

2.1.1 Definition and Dimension

In the 1990s, the American Philosophical Association (APA) used Delphi's method to discuss the concept of critical thinking. Under the principle of seeking common ground while reserving differences, they agreed that critical thinking awareness and critical thinking skills are the two dimensions of critical thinking. This study discusses the international research on critical thinking based on these two dimensions. First of all, critical thinking consciousness is also called critical thinking personality tendency. Critical thinking awareness is a habit of thinking that refers to the ability to use critical thinking to look at things and others in the process of analyzing problems. Critical thinking skills are the ability to skillfully apply critical thinking skills and strategies in problem solving (P. Facione, 1990).

Facione (1992) divided critical thinking awareness into seven levels, namely truth-seeking, open-mindedness, analytical ability, systematic ability, self-confidence in critical thinking, intellectual curiosity, and cognitive maturity. Truth-seeking refers to a person's desire and honesty for truth, doubt, and inquiry. Even if the result is contrary to one's own ideas and interests, truth-seekers care more about truth than evidence; Open-mindedness refers to the degree of openness of a person's mind and whether he/she can accept people, things or opinions different from their own thoughts; Analytical ability is the ability to foresee possible outcomes or consequences

and remain alert at all times, imagining solutions to problems before they arise; Systematic ability is the ability to have an organized, methodical, focused and diligent exploratory temperament. A person with systemizing skills will methodically resolve specific disputes, questions and problems; Confidence in critical thinking refers to the degree to which a person is confident in his own reasoning process. People with critical thinking confidence believe they can make good judgment and solve problems well; Curiosity refers to the degree of curiosity of a person. Curious people have extensive knowledge, want to understand how things work, pay attention to learning, and demand continuous improvement; Cognitive maturity refers to a person's temperament for deliberate decision-making, including the development of cognitive maturity and cognitive ability. When solving problems, exploring, and making decisions, people with this ability come up with multiple solutions depending on the situation. In a word, critical thinking skills are another important dimension of critical thinking skills. People often use this skill to analyze and explore things to solve problems well.

Second, the cultivation of critical thinking can be carried out through the mastery of critical thinking skills. There are six core skills in critical thinking skills, namely explanation, interpretation, analysis, evaluation, inference, and self-regulation (Figure 1). Siegel (1990) believes that analysis is to require students to conceive and carry out logical analysis from various parts of the problem, and analysis should emphasize logic; evaluation is to evaluate people's subjective cognition, that is, the credibility of perception and judgment; Facione (P. A. Facione et al., 1998) believes that analysis is the core of evaluation. First of all, only by making reasonable judgments on things can we make better evaluations; Inference is a logical conclusion derived from known information; Interpretation is to make a reasonable explanation of the changes and laws of things through observation and thinking; An explanation is a convincing statement of the results of the inference; Self-regulation is to consciously monitor and reflect on one's own cognition and behavior.

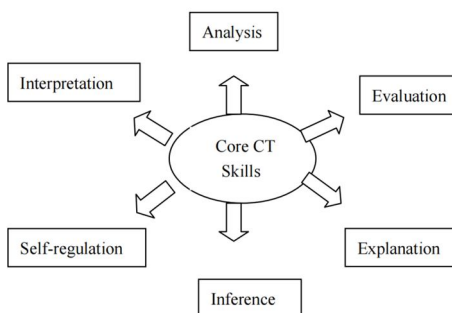


Figure 1: Critical Thinking Skills

2.1.2 Development: Theoretical exploration

The study of critical thinking in China began in the 1980s. Scholars believe that critical thinking should be gradually infiltrated and actively practice critical thinking. Chinese scholars are increasingly aware of the importance of cultivating critical thinking ability. The definition of critical thinking ability is different in different disciplines, and the training methods are different, and the related research is gradually increasing. Critical thinking is the unity of critical thinking awareness and critical thinking skills. Cultivating students' critical thinking is to cultivate students' spirit of

courage and critical skills (Li et al., 2002). This research will review the existing literature from the perspective of the development of critical thinking ability.

Professor Liu (2000) discussed the importance of critical thinking ability, discussed its meaning and deeply analyzed its positive significance in education and Instruction, and then put forward the suggestions of relevant aspects of the cultivation of critical thinking ability. After 2005, Chinese researchers gradually began empirical research, and the research objects were college students as the main body. Wen (2009) proposed to construct a measure of speculative ability—a theoretical model of speculative ability hierarchy, which builds the foundation for transforming into operational test questions. The introduction of theory helps researchers to clarify concepts, and the use of scales can help researchers discover problems.

2.1.3 Cultivation: Training mode

Sun ((2017)) explored the practice of cultivating critical thinking ability, taking college students as the research object, organically combining theory and practice, and relying on business English to carry out gradient training; Wang (2021) pointed out that "self-cultivation and school education" is the main way to cultivate critical thinking ability, teachers should change their educational view, integrate critical thinking into subject teaching and set up special critical thinking training courses. In addition, the cultivation of critical thinking in China focuses on combining critical thinking training with curriculum teaching.

2.2 Teaching and Practicing English Writing

2.2.1 Teaching Introduction: Cultivation of Thinking Quality

Foreign scholars attach great importance to the research on critical thinking, discuss the rationality of applying critical thinking to teaching and propose training courses. In the middle and late 20th century, foreign scholars mainly discussed the establishment of special courses to improve students' critical thinking ability. In 1985, American scholar Costa listed 15 courses for cultivating students' critical thinking in his book *Developing Minds* (Slavin & Davis, 2006). Paul (1990) pointed out that people's critical thinking ability can be improved through acquired training (such as: teacher guidance and a large number of professional training). Ennis (2015) believes that the teaching of specialized courses (different from general teaching) will increase students' awareness of critical thinking learning and enable them to develop critical thinking skills more purposefully.

Since the end of the 20th century, scholars have gradually combined the cultivation of critical thinking with specific disciplines. Baker University of America offers two compulsory courses related to critical thinking training: *Critical Thinking and Effective Writing and Ideas and Exposition*. After analysis, scholars pointed out that compulsory courses can improve students' critical thinking ability (Su, 2011). Scholars such as Pither and Soden (2000), Paul and Elder (2005), and Hatcher (2006) all believe that transferring thinking ability to specific subjects will improve students' problem awareness and is also conducive to the learning and mastery of subject knowledge. Of course, through the transfer of this ability, learners will also make progress in other aspects. Singapore also attaches great importance to the cultivation of thinking ability, which is mainly reflected in the stages of changing teaching objectives, teaching methods, and teaching content.

2.2.2 Teaching Practice: Cultivation of Thinking Ability

The teaching concept of cultivating critical thinking ability from the perspective of teaching theory, and proposed a new classroom teaching mode, namely "thinking culture" (Retno et al., 2022). Most importantly, the cultivation of students' critical thinking can be achieved by changing the usual way of asking questions in English teaching, and continuously optimizing the way of asking questions can effectively promote the development of critical thinking (Suhardiana, 2019). In the exploration of teaching practice, the researchers infiltrated the cultivation of critical thinking ability into the subject curriculum, starting from reading and writing, and after comparing the scores before and after the test, the students' academic performance has improved.

2.3 Constructivism Theory

Constructivism, pioneered by Piaget in 1966, centers on how learners actively shape meaning based on previous experiences. Vygotsky (1978) emphasized the influence of social and cultural context on learning, highlighting the significance of a learner's cognitive development through cultural knowledge. The educational process hinges on encouraging students' thinking and values while maintaining their engagement throughout learning. This approach impacts teaching and learning methodologies (Hoover, 1996). Constructivism underscores the interplay between existing knowledge and the acquisition of new understanding. Teachers in this paradigm aim to activate students' prior knowledge to scaffold the construction of new knowledge. Constructivism's application leads to student-centered classrooms, fostering enthusiasm, enhancing writing skills, and nurturing critical thinking. Scholars in China, such as Fan & Zhang (2003) and Deng (2006), advocate for using constructivism in education, emphasizing situational teaching and integrating theoretical expertise with practical classroom methods. They promote independent problem exploration among students, fostering self-motivation and problem-solving skills, while applying constructivism to critical writing to actively construct knowledge through inquiry, questioning, and evaluation. Through this constructivist lens, English writing instruction becomes a platform for honing critical thinking skills.

2.4 Critical Thinking Skills Theory

Key figures in the theory of critical thinking skills, such as Facione, P.A., Halpern, D.F., and Paul, R.W., are renowned authorities in this field. Facione (1991) concentrates on defining and exploring critical thinking's content and structure, encompassing analysis, explanation, evaluation, inference, and self-regulation. Halpern (1995) categorizes critical thinking as an advanced human skill that involves questioning, discovery, analysis, and effective problem-solving. Paul, R.W. emphasizes practical problem-solving in daily life and academia, focusing on fostering fair and honest thinking by integrating morality and intelligence. Paul (2006) emphasizes the significance of questioning in education, regarding it as an art that triggers thinking. Different types of questions prompt various levels of thinking, with profound questions leading to deeper contemplation.

2.5 Chinese Ministry of Education (MOE) Policy on Critical Thinking Cultivation

In 2013, China's newly promulgated General Middle School English Curriculum Standards emphasized enhancing students' English proficiency to explore, analyze, and solve problems, prioritizing the development of critical thinking skills. Subsequent editions, such as the 2017

version, underscored four core competencies: language proficiency, cultural awareness, thinking quality, and learning ability (Wang & Luo, 2019). The inclusion of "thinking quality" in English curriculum objectives signifies its pivotal role in middle school education, presenting substantial challenges for both teachers and students. "Thinking quality" encompasses logical, critical, and innovative thinking, enriching students' problem-solving abilities. The Standards also introduce speculative writing tasks, emphasizing speculative nature in writing and expression. Given the symbiotic relationship between writing and reading, this research integrates writing and reading symbiosis and emphasizes comprehension's role in the writing process, aligning with the Standards' focus on enhancing critical thinking among students. It aims to meet curriculum objectives by fostering critical thinking through English writing, catering to the expectations set for teachers and students in English writing instruction and achieving the following outcomes:

Table 1: Correspondence table between Critical thinking skills and New Curriculum Standards

Skill	Sub-skill	Provisions	Students' performance	Teachers' performance
Interpretation	Classification; decoding; clarification;	Grasp the author's views, attitude, language characteristics	Can grasp the concepts, views, attitudes and positions in the writing materials	Help students grasp the concepts, views, attitudes and positions in the writing materials
Analyze	Review, Identify, and Analyze argument	Understand the method and logic of the author's viewpoint	Understand the method and logic of argumentative writing; express logically;	Focus on the teaching of method and logic
Evaluate	Evaluate proposition and argument	Question the rationality of the inference; Evaluate the writing results	Can question the process, and evaluate themselves or others	Guide students to question process
Inference	Questithe evidence; find alternatives; draw conclusions	multi-angle thinking	multi-angle create conception	Encourage, guide , teach and correct argument method
Explanation	Present and justify	Proper argument; Accurate language; Creative expression	The view should be highly relevant to the argument	Teach students the appropriate, and typical method
Self-regulation	Self-examination; self-correction	Ability to revise independently; Evaluate writing results	Can independently modify, willing to show and evaluate	Teach students how to modify and how to evaluate

3. RESEARCH METHODS

3.1 Documentary Analysis Method

The documentary research method involves analyzing documents containing information about the studied phenomenon (Ahmed, 2010). It is favored by qualitative researchers for being straightforward, efficient, cost-effective, and easily manageable (Haynes et al., 2007). Its primary advantage lies in the accessibility of documentation, often at minimal or no cost to scholars. Ethical approval is rarely required for data access since researchers can utilize document data instead of human subject data. However, documentary researchers must acknowledge certain limitations in

utilizing documents as evidence, including inconsistent document retrieval and potential lack of detail for research purposes. For instance, documents not designed explicitly for research may lack essential information, especially if relying solely on documentary data sources. A notable illustration involves gathering organizational policies from diverse institutions accessible on the Internet. Although this enhances accessibility, verifying the currency of these documents remains challenging. Consequently, besides obtaining policy documents from a website or in hard copy, it might be necessary to contact the organization to confirm their current versions. Furthermore, there is concern regarding the document's accuracy, which may raise doubts about its veracity. This study employed the documentary analysis method, predominantly relying on CNKI, Google Scholar, and various online resources. These sources were used to scrutinize pertinent books, journal papers, and academic reports, selecting pertinent information for analysis and consolidation. The aim was to summarize relevant content concerning the English Curriculum Standard in China. Documentary analysis, as a qualitative research method, is often utilized as a supplementary data collection method to augment rigor. It is frequently incorporated into research using qualitative methodologies, such as interviews or comparative analysis within an interpretive epistemology, to augment data when pertinent and viable. However, choosing documentary analysis as the sole method is infrequent; it is typically employed as a secondary research technique.

3.2 Bibliometric Analysis method

Bibliometric Analysis refers to the quantitative analysis of bibliographic data, often used to examine patterns, trends, and relationships within scientific literature (Ellegaard, 2018). This method involves assessing publication patterns, citations, authors, journals, keywords, and other metadata within a specific field or topic of study. It helps identify influential works, popular research areas, emerging trends, and collaborations among researchers. Bibliometric analysis provides valuable insights into the scholarly landscape, aiding researchers in understanding the evolution and impact of research within a particular domain.

In order to understand the overview of research related to critical thinking cultivation of English writing teaching in middle school, this paper searched for relevant literature and academic papers on CNKI (China's largest academic search engine) using the keywords "critical thinking ability", "Middle school teaching; critical thinking ability", "critical thinking ability in English teaching", shown as below:

Data source: Total number of documents: 553; Retrieval conditions: (Old version subject: English teaching in middle schools, critical thinking); Retrieval scope: Chinese literature.

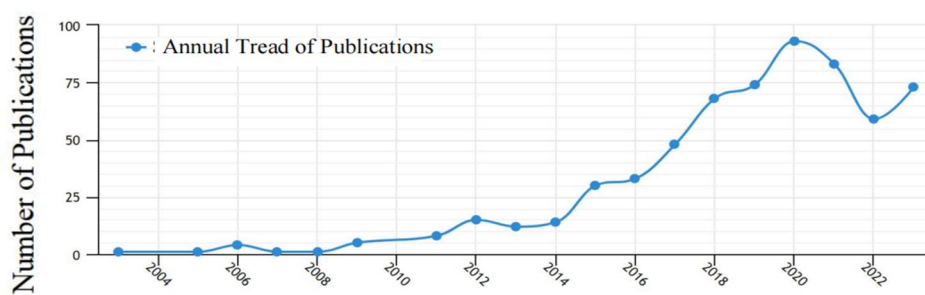


Figure 2: Overall Trend Distribution Analysis: Annual Publication Trends

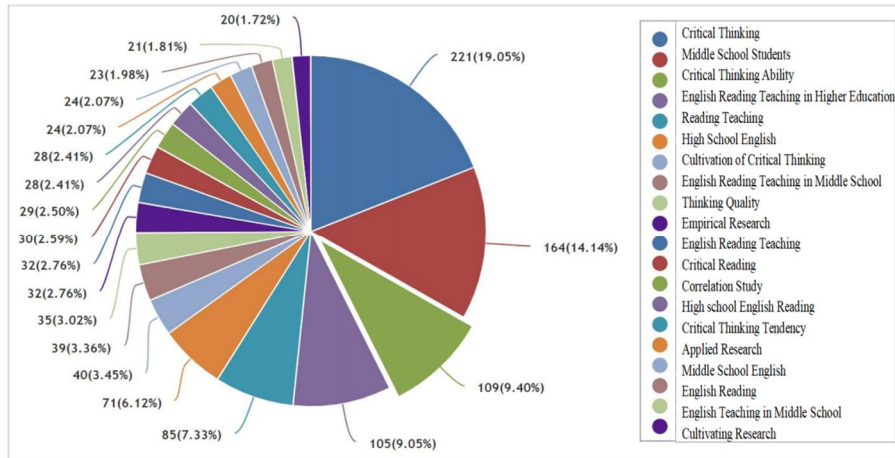


Figure 3: Overall Trend Distribution Analysis: Publishing Trends of Related Subject Terms

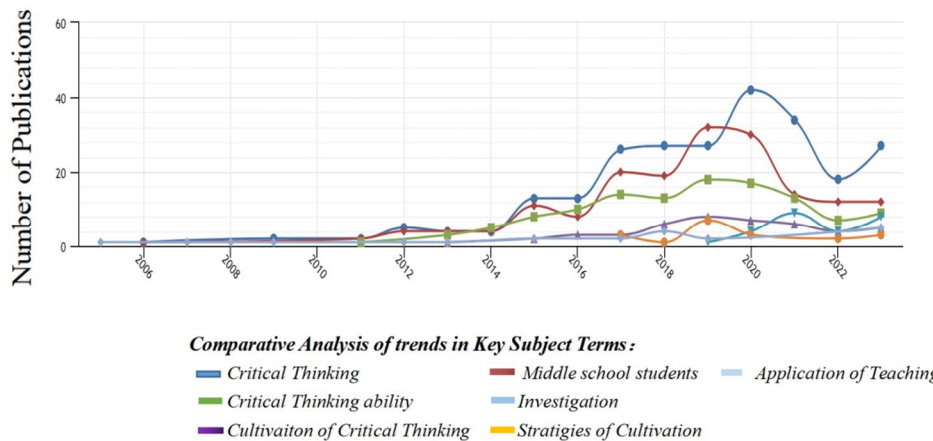


Figure 4: Overall Trend Comparison: Comparative Analysis of Trends in Major Subject Terms

Combined with Figure 2, China has gradually begun to increase relevant research on how to apply critical thinking to middle school teaching after 2015. Combining Figures 3 and 4, relevant research is currently mainly focused on the development of critical thinking in English reading teaching in addition to the middle school stage, and there is a lack of research on how to cultivate critical thinking in the classroom, especially in the English writing classroom. There are even fewer countermeasure proposals on how to cultivate them.

4. KEY FINDINGS

4.1 Integration of Critical Thinking Teaching and Cultivation in English Writing Instruction

Since the 1960s, foreign scholars have begun to study the teaching of critical thinking and English writing. A large number of foreign scholars believe that writing teaching can improve students' critical thinking ability and stimulate students to make in-depth thinking that requires objectivity, independence, and multiple perspectives. Students' critical thinking can also be trained through the process of identifying and solving writing problems.

The research on critical thinking in the English writing teaching started late at home. In 2010, led by Beijing Foreign Studies Institute, an English major course teaching and speculative training forum was established to study how to effectively improve the teaching of undergraduates who major in English, especially how to strengthen students' speculative ability in teaching. Students have low critical thinking in many lessons. Therefore, the basic idea of education reform is to integrate the training of critical thinking into every curriculum (Ma & Liu, 2023). Since then, the academic circle has paid attention to the combination of critical thinking and English writing.

Tusil (1999) adopted different teaching methods to conduct critical thinking research on various disciplines in the university. Finally, he found that English writing proficiency is positive related to students' critical thinking. Therefore, he advocated that critical thinking should be integrated into the teaching of English writing so that students can make great progress in their writing. Stalpeton (2001), taking 45 American students as the research objects, evaluated students' critical thinking in their writing and finally found that many college students integrated the critical thinking into their writings. Some scholars (Taghinezhad et al., 2018) took Irish English learners as the research objects. He confirmed that there was a significant positive correlation between students' writing proficiency and critical thinking skills. Kirby and Goodpaster (2007) showed in *Philosophical Studies* that thought and language are interdependent: "Thinking is the essential content of language, and language is the external expression of thinking". This point of view emphasizes that it is very necessary to increase the proportion of critical thinking training in the process of English teaching to promote the development of students' critical thinking. Harvard University believes that the writing of argumentative essays is the best way to cultivate and improve students' critical thinking. Therefore, it has set up a special English writing course and a writing course combining the characteristics of the subject in its educational curriculum section. The writing course combined with subject is designed to train students' critical thinking skills.

However, Huang (1998) proposed that foreign language students' abilities are weak in analyzing, synthesizing, judging, and reasoning when they write articles. This phenomenon is called "absence of speculation". And he also emphasized that absence of speculation can directly affect students' creativity, comprehensive quality, and ability to solve problems. When critical writing teaching first appeared in Chinese academic circles did not attract much attention. Wen & Liu (2006) pointed out that many English teachers overvalues the communicative function of language in practical teaching while the informing and thinking function of language are neglected. The thinking development of English major students is greatly restricted, which needs to be noticed and carefully studied. Zhang (2021) believed that the teaching of English writing always stays at the shallow language level for a long time, and it does not focus on higher level of thinking, especially critical thinking. Teachers hardly ever reflect their own teaching methods and students always believe that what the teacher said is completely correct. The teaching materials also are regarded as authoritative documents, so students' writing are always lacking creative ideas. Therefore, it is the practical demand to cultivate college students' critical thinking in the teaching of English writing. Wang (2018) pointed out that the critical thinking in writing teaching for English majors is absent, which was mainly caused by improper learning methods, teaching methods and testing methods.

4.2 Importance of Critical Thinking Ability

Flower and Hayes (2016) proposed that the English writing process includes three processes of ideation, drafting, and revision. These three processes are repeated until the composition is

completed. The process requires students to carry out a series of thinking activities such as repeated thinking, analysis, judgment, and evaluation. Therefore, the composition writing process is a process that can cultivate students' critical thinking ability. González (2001) analyzed the writing patterns of Chinese learners from three aspects: language, pragmatics and psychology and proposed that the organization and structure of learners' writing can reflect their critical thinking. Stalpeton (2001) conducted a questionnaire survey on 70 Japanese students who studied English. The final results showed that many students didn't dare to question or express their views during the learning process. He deemed that the cultivation of students' critical thinking should be given to top priority in teaching. Therefore, teachers should further develop students' critical thinking in English writing class.

Yang (2014) believed that both the two-dimensional analysis ability and systematic ability of critical thinking can affect English writing proficiency of non-English major students. Therefore, teachers should appropriately adjust teaching arrangements and infiltrate critical thinking into every step of writing teaching. Gao and Yu (2017) chose the grade three learners of English majors in colleges as research objects, and explored characteristics of critical thinking which affect the proficiency of second language writing. Liu and Yao (2019) studied the impact of overall critical thinking ability of non-English majors and their sub-skills on the level of English essay. It focused on the clarity of the argument, the rationality of the reasoning, and the coherence of the discourse.

4.3 The Cultivation Strategies of Critical Thinking Ability

The current relevant research primarily focuses on cultivating students' critical thinking and improving English writing abilities through the adoption of diverse teaching strategies. These strategies cover various aspects and provide valuable experiences and insights for future research and pedagogy:

a) Writing diaries and feedback: Brown & Sorrell (1993) believed that the method of writing diary can improve students' critical thinking. In addition, teachers should give sufficient feedback to students' writings.

b) Writing-thinking model: Perry (2004) proposed a writing-thinking model, which contains three layers. The external layer is the writing background, including the writing purpose, writing object, writing theme and the author. The middle layer describes the relationship between critical thinking skills and writing, and the internal layer describes the relationship between various activities of English writing. Based on the writing-thinking model, Chaffee has designed a large number of writing tasks in order to improve students' critical thinking and writing proficiency.

c) One-on-one guidance strategy: Barnawi (2011) believed that teachers need to design writing tasks, give students opportunities to discuss and modify their writing draft, then give one-to-one writing guidance to students when it is necessary. So students' critical thinking will improve gradually. Zhu (2009) illustrated that English teachers can be aware of the level of students' critical thinking by comparing their essays from thinking characteristics.

d) Meaningful writing task design: Sue Doe (2012) believed that traditional writing teaching method cannot promote the development of student' critical thinking. Therefore, meaningful writing tasks should be carefully design to develop students' critical thinking. Meanwhile, students also

need to carry out critical evaluation in the writing process and then modify their own writings. Consequently, students' critical thinking skills will be effectively improved.

e) Diverse teaching approaches: Nabila Nejmaoui (2019) proposed some effective ways to cultivate students' critical thinking in English writing teaching such as general approach, infusion approach, immersion approach and mixed approach. Most importantly, it can be shown that critical thinking plays an important role in English writing. Therefore, more research on it and English writing should be paid more attention to and carried out. According to the above research review, most foreign scholars agree that critical thinking can be cultivated through writing training.

f) Transformation of questioning methods: Li (2002) proposed that teachers can consider different teaching strategies as analytical perspective and change the methods of asking questions to strengthen students' critical thinking.

g) Selection and in-depth exploration of reading materials: Liu (2003) deemed that critical thinking is closely related to the proficiency of graduate students' English writing and proposed that English teachers should find more appropriate reading materials, ask students to explore the implied meaning of text and develop students' observation ability to cultivate students' innovative ability and critical thinking in writing teaching.

h) Encouraging skepticism and multi-perspective thinking: Liu (2005) believed it is necessary to encourage learners to take a skeptical attitude towards authority and consider problems from multiple and objective perspectives. These ways can make great contribution to the development of Chinese college students' the critical thinking in writing practice. As for writing teaching for English majors, Han (2009) proposed some ways for the teacher to cultivate students' critical thinking, such as material selection, demonstration of the topic and evaluation from multiple perspectives. Li (2011) explored the relationship between English skills courses and critical thinking ability. She believed that reducing the time of skills courses, adjusting teaching content, and reforming teaching methods may improve language skills and critical thinking ability at the same time.

i) Interdisciplinary integration: A relevant research was conducted by Wen & Liu (2006), they focused on the combination of English writing and critical thinking for students in the fourth grade of English majors. Students are required to complete an argumentation about 300 words within the prescribed time. The self-built corpus is used to analyze students' writing to explore the characteristics of students' critical thinking. Through careful analysis, they proposed that the improvement of English writing must be linked with thinking process, and it is necessary to systematically train students' logical thinking, including the ability to analyze, compare, synthesize, abstract, summarize and classify.

j) Multi-level assessment and feedback: Tian (2012) researched on training methods of non-English major college students' critical thinking ability and found that theme writing, reading summary tasks, picture composition and exploratory writing tasks designed by teachers can effectively improve student' English writing skills. Above all, it clearly shows that many corresponding results of research on critical thinking has been achieved in China. Li (2011) relying on experimental research, focused on ways to integrate higher-level critical thinking skills in English writing

teaching. She believed students' thinking ability can be improved by selecting article topics, giving feedback to students and peer reviewing of writing.

5. DISCUSSIONS AND FUTURE DIRECTIONS

5.1 Enhancing Integration of Critical Thinking in English Writing Instruction

In recent years, there has been a growing scholarly emphasis on integrating critical thinking into English writing instruction at the secondary school level. Zhao (2014) conducted an assessment employing questionnaires and argumentative writing to evaluate the critical thinking skills of secondary school students, indicating a moderate level of proficiency in this domain. Cai (2010) emphasized the significance of selecting textbooks tailored to students' learning styles, linguistic capacities, and cognitive levels, while delving comprehensively into the nuanced content within these texts. Additionally, educators can employ multimedia resources to contextualize lessons and encourage students to craft film reviews, fostering enhanced writing abilities among students. Wang (2019) advocated for English writing instruction tailored to the inherent features of English writing and critical thinking abilities, aligning with language input and centered around students' needs. Promoting cognitive skill development should be considered a primary objective in enhancing both students' linguistic aptitude and critical thinking capabilities.

5.2 Reasons for measuring the development of critical thinking ability in middle school students' English writing in English teaching practice

Research in China is in an early developmental phase. The focal point regarding critical thinking ability cultivation in China predominantly centers on college students, with limited studies focusing on middle school students' critical thinking. Scholars predominantly emphasize theoretical aspects encompassing concept definition, training methods, and measurement tools, while practical English teaching receives comparatively lesser attention. Although critical thinking research in China is gradually shifting from theoretical to empirical paradigms, the current assessment of critical thinking lacks comprehensive detail and applicability to English writing instruction, failing to effectively incorporate critical thinking training. Therefore, this study critically examines the cultivation of critical thinking skills in middle school students, considering them as the primary focus.

6. CONCLUSION

Different from the current predominant focus on cultivating critical thinking among university students (primarily addressing educators' cognition), this study narrows the scope to the cultivation of critical thinking abilities in the domain of English writing. It provides an extensive understanding of how teachers can integrate critical thinking into enhancing writing, particularly by investigating the impact of certain critical thinking instructional practices from a teacher's perspective on writing improvement. However, one limitation of this study is the relatively small number of selected sample studies, potentially overlooking excellent research contributions available in other resources or databases. Theoretically, the authors narrowed down the specific scope of integrating critical thinking teaching in secondary school English writing classrooms from a teacher's perspective and conducted a comprehensive, scientifically detailed analysis, and summary. Teachers can grasp the basic situation of current existing literature on how to engage critical thinking in actual English

writing classrooms. Given the comprehensive presentation of the integrated framework of critical thinking in secondary school English writing classrooms reflected in the current existing literature, readers in this area can deepen their understanding of academic research applying critical thinking pedagogy in the field of English writing, solidifying the theoretical foundation for further development and research. Practically, this study can be regarded as a guide for researchers interested in integrating critical thinking into secondary school English writing. It serves as an instructional manual for teachers to design their teaching curriculum, including the types of critical thinking instructions to embed in writing, methods of instruction, and practical and useful techniques. Besides the systematic view of the integration of critical thinking theories and practices in writing, the principal conclusions drawn from this research will assist educators in this field in better planning activities in actual practice. Moreover, teachers will focus on the consistency between the underlying theories of critical thinking, teaching implementations, and assessments, thereby designing more scientific, systematic, and effective guidance for teaching critical thinking in secondary school English writing, with higher reliability and validity.

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