

# Research on Teaching Mode of Integrating Critical Thinking Skills into College English in the Era of Digital Intelligence

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**Abstract:** Critical thinking is the core ability of innovation in the new era. For a long time, the traditional teaching in college English has focused mostly on language skills instead of thinking ability, thus leading to the "Syndrome of Absence of Critical Thinking" remained unsolved. This study surveyed 210 non-English sophomores to find out the current situation of college students' critical thinking skills and analyze the reasons. Guided by the teaching principle of TERRIFIC, this paper will explore a new teaching mode of integrating critical thinking skills into college English in the era of digital intelligence, with an expectation of providing new perspectives for the reform of college English in China.

**Keywords:** College English; Critical thinking skills; New teaching mode; Digital intelligence

## 1. Introduction

With the in-depth development of digital intelligence, the application of big data and artificial intelligence in teaching has become an inevitable trend and practical need for higher education [1]. However, with a teaching environment featuring "artificial intelligence + college English", many teachers find that students have the following problems: stronger input skills (listening and reading) than output skills (speaking, writing and translating), a lack of reasoning skills, and the tendency of passive learning. It can be seen that the "Syndrome of Absence of Critical Thinking" is still a prominent problem needed to be solved [2].

In the new edition of College English Teaching Guidance published in 2020, there are explanations newly added to the overall description of teaching requirements: "...be able to clarify facts, opinions and details, understand the intentions and attitudes of others, and make comprehensive and logical judgments..."; "...be able to effectively describe, explain, illustrate, demonstrate and evaluate ". It can be seen that college English as the main course of general education should not only focus on language skills, but also on the cultivation of critical thinking skills [3,4].

Therefore, how to tackle the problem of the absence of critical thinking and how to integrate critical thinking skills into college English teaching are the problems to be solved urgently in the current teaching reform. This study will analyze the reasons behind and explore how to construct a new teaching mode of integrating critical thinking skills into language teaching in the era of digital intelligence.

## 2. Research background

### 2.1 Literature review

The concept of "critical thinking skills" originated from the West. Peter Facione states that "critical thinking is a purposeful, self-calibrated judgment which can be expressed as an interpretation, analysis, evaluation, inference, and an explanation of the argument, concept, method, standard, or context on which the judgment exists" [5]. As for the definition of critical thinking skills, the two-dimensional structure model (including cognitive dimension and emotional dimension) proposed by Delphi team and the ternary thinking structure model (including thinking elements, standards and intellectual characteristics) constructed by Paul & Elder are the most influential ones [6]. Their

structural model and theory provide theoretical support for cultivating students' critical thinking skills in language teaching .

In recent years, domestic scholars in China have also carried out extensive researches on the cultivation of critical thinking ability, among which Wen Qiufang and Sun Youzhong received the highest recognition in this field [7,8,9,10,11]. Wen Qiufang once defined "critical thinking" as "the ability to make purposeful and rational judgment according to standards", and put forward the "hierarchical model" on the basis of authoritative foreign models. She has proposed a comprehensive theoretical model of critical thinking which can be divided into two levels: Meta-thinking and critical thinking. In 2015, Sun Youzhong proposed that language teaching should be integrated with critical thinking skills, then putting forward a new teaching principle of TERRIFIC: Target, Evaluate, Routinize, Reflect, Inquire, Fulfill, Integrate and Content. Their researches provides practical and measurable standards for teachers to develop students' critical thinking skills in teaching.

### 2.2 The new normal of "digital + intelligence" in college English teaching

In the era of digital intelligence, it is the trend for college English to take advantage of online digital courses and intelligent technology. The Ministry of Education has proposed in the College English Teaching Guidance that "to make full use of the online teaching platform, provide students with an online and offline learning environment by combining classroom teaching with modern information technology as well as abundant learning resources, so as to encourage students to turn themselves from " passive learning "to" active learning " [11].

Therefore, a new teaching environment relying on digital courses as well as multiple intelligent learning platforms will surely help promote students' autonomous learning and thinking skills, and provide a new perspective for solving the predicament of "time-consuming and inefficient " and "emphasizing language skills over thinking skills" in college English teaching.

## 3. Exploration on a new teaching mode of integrating critical thinking skills into college English

### 3.1 A survey on the current situation of students' critical thinking skills

The author conducted a survey to learn more about the current situation of students' critical thinking skills, and 210 valid questionnaires were collected. This survey takes sophomore students as the participants for the reason that they should have acquired basic critical thinking skills and constructed their own views on college English after three semesters of learning various courses. Based on the hierarchical model of thinking ability proposed by Professor Wen Qiufang's team, the author conducts a specific survey and the results as shown in Table 1.

Table 1: Score of students' emotional qualities and cognitive skills of critical thinking

Question	Emotional quality	Total score	Average
Q1	Self-confidence	5 (Reverse scoring questions)	3.88
Q2	Openness & inclusiveness	5 (Reverse scoring questions)	3.38
Q3	Openness & inclusiveness	5 (Reverse scoring questions)	2.68
Q4	Openness & inclusiveness	5 (Reverse scoring questions)	2.9
Q5	Perseverance	5 (Reverse scoring questions)	2.48
Q6	Curiosity	5	3.75
Q7	Integrity	5 (Reverse scoring questions)	2.30
Question	Cognitive skills	The proportion of correct answers	
Q8	Analysis & evaluation	28.57%	
Q9	Analysis & reasoning	59.05%	
Q10	Analysis & reasoning	31.43%	

As can be seen from the data, the average of Q1 is the highest that scored 3.88 while Q5 and Q7 are lower than 2.5. It can be concluded that students are not confident in their own judgment in the face of disputes. However students show their outstanding quality of "integrity" in advocating justice and pursuing truth, and show perseverance in solving difficult problems. From the average of Q2-Q4, students hold a relatively open attitude towards foreign cultures and different values, but more than 60% of them tend to stick to their own views, indicating that students show a low degree of tolerance towards different ideas. Therefore, the importance of cultivating students' quality of respecting different opinions and revise improper views is self-evident. Besides, the average of Q6 reaches almost

4 with more than 60% of the students believing that they are "eager to take on challenging tasks", indicating that most of them embody the emotional traits of "curiosity".

The author also designed 3 comprehensive questions to learn about students' critical thinking skills. Q8 examines students' cognitive skills of "analyzing" and "evaluating". According to the data, only about 29 percent of the students can accurately identify the key information in the argument and reach the correct answer. Surprisingly, nearly 55% of them choose an option that is extremely subjective and have little relevance to the center argument. Both Q9 and Q10 test students' skills of "analyzing" and "reasoning", but the results vary greatly. Through comparative analysis, it can be seen that students can choose the correct answer by ruling out the extreme options. However, the four options in Q10 require students to deduce the correct answer within same rules. This question requires a higher degree of logic and flexibility in thinking by asking students to be able to use different critical thinking skills alternately more skillfully, so the result shows a sharp decrease in the proportion of correct answers. To sum up, students' command of critical thinking skills are not as expected.

## **(2) Reasons behind the “Syndrome of Absence of Critical Thinking”**

Through the observation of daily teaching, students' lack of critical thinking skills in college English class is mainly reflected in the following four aspects: they tend to have difficulties in (1) exploring effective background knowledge; (2) analyzing cultural differences; (3) making in-depth analysis of the discourse; (4) delivering the speaking tasks with substantial content; (5) using critical thinking skills on text analysis.

Combined with the results of investigation and classroom observation, the author summarizes the main reasons: (1) the long existence of teachers' emphasizing language skills over thinking skills. Over the years, teachers attaches great importance to language training, with the focus landing on the explanation of language points and test-oriented skills, thus ignoring the cultivation of students' critical thinking skills as well as independent learning ability. (2) Students have a weak cross-cultural awareness and low command of using high-level thinking in learning. For a long time, students' expectation for college English remains to be a communication tool, but they ignore the cultural and philosophical connotation contained in language, and they also lack of using critical thinking skills in making comparisons of different cultures. Simple language training restrain the improvement of students' cross-cultural awareness as well as critical thinking skills, while the lack of cross-cultural awareness in turn leads to the emptiness of language especially in speaking and writing. (3) There lacks a clear criterion for evaluating students' critical thinking skills. Although the majority of teachers are aware of the importance of critical thinking, they don't have specific indicators and unified standards. Therefore, it is obvious that the accomplishment of the educational goal should take the evaluation of students' critical thinking skills, emotional traits and cognitive skills into consideration, rather than taking language education as the training of simple language points. (4) The traditional teaching environment limits the development of students' multi-competence. In the traditional classroom, teachers and students carry out teaching and learning activities based on the textbook, and lack of the support of big data for students' learning, which to some extent contribute to a state of "passive learning" and is not conducive to students' personalized learning. Therefore, using digital courses and intelligent platforms such as FIF language training system, Unipus digital resources and MOOC is very critical to cultivating students' ability of independent learning and critical thinking for the reason that they allow students to learning on and off class anywhere anytime.

As a public compulsory course for all non-English majors, college English is the course most widely accessible to students, so that it should play a significant role in the cultivation of college students' critical thinking. Helping students improve their higher-order thinking skills and practice cognitive skills should not only be the task of English teachers, but also be an urgent mission of all college teachers<sup>[11]</sup>.

## **(3) A new teaching mode of integrating critical thinking skills into college English based on TERRIFIC**

In recent years, Chinese scholars have conducted extensive researches on the cultivation of critical thinking in English teaching. Among them, Sun Youzhong put forward a new principle for cross-cultural critical thinking education. The concept agrees that "language should be a means of developing advanced thinking skills. In language teaching, this means that students do not just learn the language itself, but to develop their thinking ability and use it in situations outside classroom"<sup>[12]</sup>. Therefore, in order to explore an effective way of integrating critical thinking into college English, the author will explore a new teaching mode on the basis of TERRIFIC proposed by Sun Youzhong. The following design is selected from *College English Listening and Speaking Book 3- Unit 7 "Economic*

*Drive*", with the support of digital courses and the multi-intelligent platforms.as shown in Table 2-3.

Table 2: A new teaching design for English listening and speaking course

TERRIFIC Principle	Teacher's main activities	Purpose
<b>Target</b>	(1) <b>Compare</b> the differences between Chinese and western consumption behaviors; (2) <b>Analyze</b> the reasons behind them; (3) <b>Demonstrate</b> ideas with data and examples.	Make clear the target of cultivating critical thinking skills in teaching.
<b>Evaluate</b>	(1) <b>Summarize</b> the main characteristics of "Black Friday" from listening materials; (2) <b>Reasoning</b> the logic and structure of the materials; (3) <b>Explain</b> why Black Friday is the most popular shopping festival in the US; (4) <b>Analyze</b> the reasons behind the difference.	Make clear the criterion of evaluating critical thinking skills in teaching.
<b>Routinize</b>	"Ask " - "Think" - "Pair" - "Share" 1) Warm up: activate the background knowledge; 2) Listening task: grasp the key information and infer the structure; 3) Speaking task: summarize the text and analyze the reasons of the differences.	Routinize higher-order thinking skills.
<b>Reflect</b>	Giving feedback and invite students to <b>making a summary and reflection.</b>	Develop meta-cognitive ability and self-regulate thinking skills.
<b>Inquiry</b>	<b>Engage students in the inquiry learning:</b> Topic 1:China has long been considered as a“high-saving”society while Western like the US are more like a consumer society.What are the possible reasons for the difference in consumption? Topic 2: What changes occur in Chinese people’s consumption behavior with its rapid economic development?	Create opportunities for free inquiry and scaffold students' for inquiry learning.
<b>Fulfill</b>	Students fulfill the tasks by <b>making their own judgments</b> on facts, <b>appreciating different values</b> and <b>embrace diversity.</b>	Promote students' self-fulfillment and whole-human development
<b>Integrate</b>	<b>Using task-based teaching method:</b> Listen for the main idea and key details; Group discussion; pair-work; group presentation;	Integration of language training and critical thinking skills
<b>Content</b>	<b>Relate the language materials with students' real life.</b> The topics of the listening materials selected are: 1) Black Friday 2) Ways to save money 3) Cashless economy	The input of critical language materials can ensure students a high quality of output.

Table 3: A new teaching design for English listening and speaking course

Criteria for critical thinking skills	Main activities for students	methods	Platform	Thinking level
1. <b>Summarize</b> the main characteristics of "Black Friday" from listening materials; 2. <b>Reasoning</b> the logic and structure of listening materials;	(1) Digital course: <i>Comparison and Communication of Chinese and Western cultures</i> (differences of consumer behaviors between East&West); (2) Summarize the characteristics of an "expository text"; (3) Grasp the key information and infer the structure.	*Online leaning *Peer evaluation *Group discussion *Retelling& paraphrasing	*China MOOC  *Unipus digital resources	Interpretation &explanation  Judgment & reasoning
3. <b>Explain</b> why Black Friday is the most popular shopping festival in the United States;	(1) Text analysis; (2) Mind map; (3) Upload to share.	*Peer evaluation *Group discussion *Teacher feedback	*Unipus resource base ; *FIF language training	Summary & Analysis  Illustration & Evaluation
4. <b>Analyze</b> the reasons behind the difference in consumption behavior between East and West.	(1) Brainstorming; (2) Write a short speech and present orally ; (3) Peer evaluation based on the criterion of critical thinking skills; (4) Watch the micro-course online and improve the speech draft; (5) Upload and share.	* Group presentation *Sample analysis *Peer &Teacher evaluation *Reflection journal	*FIF ; *Unipus Exercise base; *Unipus micro-course base.	Extension& Application  *Transforma-tion & Innovation

Listening activity integrated critical thinking skills is far more than the comprehension of the

listening material <sup>[13]</sup>. While promoting students' basic listening and language skills, students will be given opportunities to output their thoughts in speaking tasks, which is an effective way to reflect their critical thinking. In order to deal with the absence of critical thinking, students should never be content with just the literal meaning, but more importantly to comprehensively analyze the listening content, make their own reasoning and judgment, and develop the learning habit of independent thinking, which is consistent with the original intention of ideological education advocated in the current reform.

#### 4. Conclusion

With the promotion of the teaching reform, College English, as the main part of general education in college, is not only the improvement of English language skills, but also the cultivation of thinking ability, including the ability to analyze problems, to independently put forward opinions and to think critically. Based on the concept of critical thinking education, only by integrating critical thinking skills into every teaching process, clearly establishing the criterion for training critical thinking skills, can we truly solve the problem of "absence of critical thinking". However, the cultivation of critical thinking is a never-ending process that requires persistent joint-efforts. Even so, as the front-line English teachers we should have the courage to innovate teaching methods and explore new teaching modes, so that both teachers and students can benefit from the interaction between teaching and learning in the era of digital intelligence.

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