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A Study of Critical Thinking in the Assessment of English Speech Courses—Using the Speculative Tendency Questionnaire as a Measure

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In recent years, foreign language circles have paid extensive attention to and attached importance to the cultivation of critical thinking ability. In this study, a total of 338 second-year English students were tested in the early stage of the English speech class using the Chinese edition of the California Speculative Tendency Questionnaire as a measurement tool. Studies have shown that English majors have a negative bias in their thinking tendency and low critical thinking ability at the beginning of the course, but a small number of students still have positive thinking tendencies. Among the seven dimensions of speculative tendency, including truth-seeking, open-mindedness, analytical ability, systematic analysis, self-confidence, intellectual curiosity, and cognitive maturity, students' open-mindedness and cognitive maturity showed a positive bias, while the other five dimensions showed a negative bias. In general, students have a negative bias in their thinking at the beginning of the English speech course, and most of them are close to the critical point of positive development. Therefore, based on this situation, the study proposes that internal and external thinking ability tests should be designed at the beginning of the course to better understand the stage of students' critical thinking ability and provide a basis and direction for the subsequent cultivation of critical thinking ability.

Keywords: critical thinking ability, English speech, speculative tendencies, evaluation

Introduction

Since the concept of critical thinking ability was introduced into China in the 1980s, it has attracted the attention of the majority of educators. The definition of critical thinking ability by foreign scholars also has a deep impact on the research of domestic thinking ability. As early as 1956, Bloom (1956), an American educational psychologist, divided critical thinking into low-level and high-level thinking skills, and believed that critical thinking ability was an important goal in college. However, from the perspective of information processing theory, Simon (1979) believed that the process of critical thinking is to use existing knowledge to analyze, compare, reason, and integrate information. Later, the Delphi project in the United States also gave a more authoritative definition; they believe that the ability to think is a purposeful, reflective judgment, and can interpret, analyze, reason, evaluate, and explain different thinking factors (Facione, 1990). Later, Facione (2011) gave an updated version that considers critical thinking as a thought process through evidence, interpretation, and

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problem solving, and these steps combined are called critical thinking. Although these definitions take different perspectives, they all believe that the process of thinking should be divided into several stages, and the thinking class represented by these stages is progressing step by step, requiring higher and higher thinking and judgment ability.

The cultivation of critical thinking ability has attracted more and more attention from foreign language scholars and society. The "Teaching Guide for Undergraduate Foreign Chinese Language and Literature in Ordinary Colleges and Universities" (Teaching Steering Committee of Foreign Chinese Literature and Literature of Colleges and Universities, English Major Teaching Guidance Subcommittee, 2020) regards critical thinking ability as one of the core goals of higher education talent training, and gives a specific explanation for critical thinking ability, emphasizing that critical thinking ability is a process of self-reflection and self-adjustment, and has the ability to analyze, evaluate, and reason. Wen Qiufang (2012) defined critical thinking ability as the ability to distinguish things and opinions purposefully and reasonably according to specific criteria in English writing, while Sun Min (2014) agreed with this definition and pointed out that the core goal of critical thinking ability is to make reasonable judgments. It can be seen from these definitions that critical thinking emphasizes reasoned, grounded, and purposeful self-thinking and judgment. In China's foreign language circle, the cultivation of critical thinking ability has not only aroused the attention and research of teachers and scholars, but also caused concern. In the past, in foreign language education, teachers' teaching activities were still mainly based on teaching language knowledge and skills, while neglecting the cultivation of foreign language students' critical thinking ability. In the discussion of critical absence, Huang Yuanshen (1998; 2010) effectively emphasized the lack of critical thinking in English professional courses, and pointed out that English courses must be deepened to ensure the cultivation of college students' critical thinking ability. Therefore, the awakening of the absence of critical thinking ability has also caused teachers, especially foreign language teachers, to think about how to improve students' critical thinking ability, and many scholars have put forward different curriculum ideas and views on the cultivation and improvement of critical thinking ability, among which English speech as a course based on oral output is considered to be closely related to critical thinking cultivation (Ren, 2013).

Before proposing to cultivate critical thinking ability, it is necessary to understand and master the stage of college students' thinking ability, and evaluate students' thinking ability in order to better design the way and channel of cultivation. At present, the theoretical framework of the critical thinking ability model includes the two-dimensional structural thinking ability model proposed by the Delphi project team, the ternary structural thinking ability model of Richard Paul and Linda Elder (2006), and the six-level cognitive ability model proposed by Bloom (1956). Currently, there are many measuring scales, such as The California Thinking Skills Test (CCTST), the Chinese Thinking Tendency Scale (CTDI-CV) revised by Peng Meici et al. (2004), and the Objective Gauge for Design Critical Thinking Ability (Wen et al., 2010), etc. However, due to the certain linguistic bias of the English version of the measurement tool and the inability to obtain some measuring tools, this paper will analyze the evaluation indicators of the current critical thinking ability assessment measuring tool on the basis of reviewing the literature, combined with the critical tendency test made by the author in the previous research, to understand the critical tendency of students in the early stage of English speech courses, and combined with the critical thinking skills evaluation of English majors in English speech courses, the relationship between the two evaluations is discussed, aiming to continuously explore a system that can be more suitable for college students' critical thinking ability assessment.

Research on Critical Thinking Ability

As a comprehensive ability of thinking and analysis, critical thinking ability cannot only reflect students' thinking logic and judgment basis when looking at things and problems, but also enable students to show their unique views and opinions on international things and events. Critical thinking can have a positive impact on students' learning, not only on students' achievement but also on students' emotions. Firstly, Afshar and Movassagh (2017) surveyed 76 English majors and found that students' critical thinking skills were more strongly correlated with academic performance than learning strategies. Secondly, there are also studies that show that critical thinking ability has a positive effect on primary school students' reasoning and discussion skills, helping students improve their foreign language scores (Liang & Fung, 2021). Gao Xiao and Wen Qiufang (2017) also discovered that thinking ability can improve students' writing level and ability through foreign language writing as a medium, and that critical thinking ability can also affect students' reading, which is conducive to students' reading ability of different texts (Heidari, 2020). In addition, studies have analyzed the positive effects of critical thinking ability on people's emotions and feelings, such as people's emotions are more stable and rational (Li et al., 2021), and people with critical thinking ability are less likely to have significant negative emotional problems (Aghajani & Gholamrezapour, 2019). Because of the positive impact of critical thinking ability on students or individuals, it is of great significance to assess the stages of critical thinking and understand its specific performance.

Based on the characteristics of the linguistics course, Miao Ning and Miao Xingwei (2015) constructed a hierarchical model of critical thinking ability, including critical thinking skills, personality tendencies, and speculative standards, in which critical thinking skills are the core of curriculum design, personality tendencies are used as the training goals of classroom teaching, and critical thinking standards give the yardstick for course testing and evaluation. The development of students' critical thinking ability is based on a foundation of teaching external drive and students' internal drive, and the design of evaluation of critical thinking ability should also be used as a reference. Liang Fengjuan (2017) started from students of different majors, using the critical thinking ability measuring tool constructed by Wen Qiufang and others to investigate and compare the thinking ability of students of English majors in colleges and universities in Guangdong, which mainly tested students' critical thinking skills in analysis, reasoning, and evaluation, and these three also included more detailed sub-skills, but they were limited to critical skills, that is, the level of professional knowledge cultivation.

In the writing course, Dong Sai (2016) used the essay assessment method as a measure to understand students' critical thinking ability, including central thesis, argumentative evidence, logical reasoning, and organizational structure. Pu Shi (2018) took literature review writing as the starting point to discuss the evaluation system of critical thinking ability, divided thinking ability into discourse ability and evaluation ability, and refined the description of the two abilities. Different from the ability to set up literature review writing, Ma Lihong and Liu Jian (2021) were more carefully divided and more intuitive in the embodiment of ability from asking questions, expressing opinions, providing evidence, infering arguments, drawing conclusions, and interpreting evaluation as the evaluation framework of students' thinking ability. It is the same writing course, but there are many differences in the evaluation of critical thinking ability.

In the practice of English speech courses, Sun Min, Yu Lu, and Wang Jing (2015) extracted the critical cognitive abilities and sub-skills involved in speech activities, including interpretation, analysis, evaluation, reasoning, interpretation, and self-monitoring, which basically coincided with the definition of critical thinking

ability, but added a new item of "self-monitoring". It is also an English speech course, and Cheng Yaru (2021) understood the degree of students' critical thinking ability from their critical cognitive ability and emotional characteristics. Sun Min (2018) assessed the critical thinking skills of English speech learners, using the assessment indicators divided into two critical thinking skills of analysis and reasoning, and refined the two skills into impromptu speech and prepared speech. It is found that prepared speech is not positively correlated with critical thinking skills because it is disturbed by too many external factors, but impromptu speech can have a higher correlation with thinking skills, which can better reflect students' thinking ability. It can be seen that the assessment of critical thinking ability will have different settings depending on the course category, student's condition, and evaluation method, and the research entry angle is also very different, but the critical thinking ability can indeed obtain corresponding data through different measurement methods, which has a positive enlightenment and guidance effect on student learning and teacher teaching.

Critical Thinking Ability Assessment Practice

Research suggests that complete critical thinking skills should include both personality tendencies and critical thinking skills. Wen Qiufang et al. (2009) added emotional characteristics when constructing the theoretical framework for the assessment of the critical thinking ability of college students of foreign languages. In addition, Ren Wen (2013) also discussed that critical thinking should include cognitive skills and emotional tendencies, from willingness and liking to think, to ability to think deeply and to be able to put forward valuable and constructive ideas to make judgments. The personality tendency of thinking is also considered to be a personality trait, which can stably display people's thinking quality and internal motivation, and is also a part of measuring critical thinking ability that cannot be ignored (Wang & Wen, 2011). Therefore, the assessment of critical thinking ability should first be understood and mastered from the inside, which can better reflect the habits and tendencies shown by people in thinking themselves. After many studies have shown that its reliability and validity have been widely recognized, the California Speculative Tendency Questionnaire consists of seven dimensions, each containing 10 questions, seven of which include: truth-seeking, open-mindedness, analytical ability, systematic analysis, self-confidence, intellectual curiosity, and cognitive maturity. The questionnaire mainly measures the emotions, attitudes, personalities, and styles of the research subjects, using a Likert six-level scale from "strongly disagree" to "strongly agree", with each test question scoring between one and six points and a total score of 60-420 points. Based on the English speech course, this paper uses the Chinese edition of the California Critical Thinking Tendency Questionnaire (CTDI-CV) revised by Peng Meici et al. (2004) to understand the critical thinking tendency of students at the beginning of the course, and the research subject is 428 English sophomores, a total of 428 questionnaires were submitted, and 338 valid questionnaires were obtained by excluding questionnaires with an answer time of less than 180 seconds, with a questionnaire effective rate of 78.97%.

Overall Level of Speculative Tendencies

An analysis of the total scores collected from 338 questionnaires revealed that: The average score of the critical tendency of the sophomores majoring in English was 260.162, the critical tendency of the students tested was generally negative, and the number of students was more than three times higher than the critical value of positive and negative tendency (280 points) according to the CCTDI scoring standard, and was in the range of 210-280. A total of 230 students had a tendency to contradict the critical tendencies, accounting for 68.05%, indicating that more than half of the students had contradictions with the thinking tendencies. A score below 210

indicates that the students' tendency is seriously contradictory to the thinking tendency, accounting for 6.21%, with a total of 21 students; 25.44% of the students scored higher than 280 and below 350, and only 86 students, indicating that the proportion of positive thinking tendency was low; students with strong thinking tendencies, that is, higher than 350 points, only one. It can be seen that the critical thinking tendency of English majors in the early stage of the English speech course is negative, the thinking ability is low, and a small number of students can have a positive thinking tendency, but it still needs to be improved.

Table 1

Total Scores of English Majors on Their Critical Propensity

	The mean ± standard deviation	Minimum-maximum	< 210 (persons/%)	≥ 210 < 280 (persons/%)	≥ 280 < 350 (persons/%)	≥ 350 (persons/%)
Score	260.142±30.776	147~351	21/6.21%	230/68.05%	86/25.44%	1/0.30%

The Level of Propensity in Each Dimension

According to the CCTDI scoring standard, the cut-off point of each dimension is 40 points; if it is lower than 40, it means that the dimension tends to be poor, and vice versa. According to the data (see Table 2), the tendency of subjects in all dimensions is still negative bias, and the number and proportion are high. The order of the tendencies of each dimension from strong to weak is: openness of thought, cognitive maturity, truth-seeking, systematic analysis, intellectual curiosity, analytical ability, and self-confidence. The weakest of them is the dimension of self-confidence, which is the same as the results of the critical thinking tendency of English majors investigated by Chu Wenwen and Liu Zeqing (2021), which shows that students' self-confidence in the process of thinking is very insufficient, and it also reflects the lack of confidence in the learning state. Among the seven dimensions, only the openness of thought could reach more than half of the number, and 64.21% of the students had a score higher than or equal to 40, indicating that the students had a positive tendency. From the perspective of small scores, the proportion of self-confidence and intellectual curiosity below 30 points is higher, 26.63% and 23.96%, respectively, both of which are contrary to and contradict the requirements of speculation. Neither analytical ability nor systematic analysis tends to have a strong number of students, and the number and proportion are 0, indicating that these two dimensions are relatively lacking in students' learning and critical thinking ability cultivation, or still need to be strengthened. Moreover, these two dimensions also exceeded 50% in the ratio of 30-40 divisions, 63.02% and 59.17%, respectively, showing the highest proportion of students who contradicted their thinking tendencies.

Table 2

Scores of English Majors in Each Dimension of Critical Propensity

	The mean ± standard deviation	Minimum-maximum	< 30 (persons/%)	≥ 30 < 40 (persons/%)	≥ 40 < 50 (persons/%)	≥ 50 (persons/%)
Truth-seeking	37.467 ±6.810	10-55	41/12.13%	158/46.75%	130/38.46%	9/2.66%
Open-mindedness	40.633 ±5.524	14-56	8/2.37%	113/33.43%	204/60.36%	13/3.85%
Analytical capabilities	34.550 ±5.833	10-48	60/17.75%	213/63.02%	65/19.23%	0/0%
Systematic analysis	35.577 ±5.949	10-48	41/12.13%	200/59.17%	97/28.7%	0/0%
Self-assurance	33.290 ±7.398	10-60	90/26.63%	183/54.14%	63/18.64%	2/0.59%
Curiosity	34.453 ±7.092	11-60	81/23.96%	169/50%	85/25.15%	3/0.89%
Cognitive maturity	44.172 ±6.767	10-60	6/1.78%	65/19.23%	200/59.17%	67/19.82%

Discussion and Implications of Research Results

Discussion of Research Results

This study investigates students' critical thinking tendency in the early stage of English speech courses, first makes a preliminary exploration of students' thinking and thinking ability, and finds that students' thinking tendency is generally negative bias, indicating that students are less likely to think actively and reason to infer in the early stage of speech courses, and it is difficult to make effective interpretation, analysis, evaluation, and other behaviors that can trigger speculation when encountering different considerations such as evidence, concept, method, standard, or background. Secondly, this study also understands the specific situation of students in seven dimensions through speculative tendencies, and finds that students' open-mindedness and cognitive maturity can reach the stage of positive speculative tendencies, indicating that most students can accept and tolerate external information, and can reach the level of rational thinking in the cognition of things and information. However, in other dimensions, especially self-confidence and intellectual curiosity, some students are in a stage of serious contradiction with the tendency to think, and need external intervention and active teaching guidance to improve self-confidence in learning and stimulate students' motivation to drive students' curiosity. In addition, analytical capabilities and systematic analysis have more than half of the students respectively that are in contradiction with the tendency to think, which can also be interpreted as more than half of the students are in the stage of positive development towards speculation, and students can carry out certain analysis and systematic analysis when the cognitive level is mature, but they have not yet been able to achieve evidence-based and purposeful critical analysis. Due to the time it takes for students to answer the test, there is still room for development in the accuracy of the critical tendency assessment.

Implications

This study has the following implications for the assessment of students' critical thinking tendency in English speech courses. First of all, students' critical thinking tendency can largely reflect students' thinking style, learning state, and learning-driven situation, and the use of critical thinking tendency test can give feedback on students' basic situation more comprehensively and meticulously, so it is recommended that each course should have a basic understanding of students' thinking at the beginning of teaching, so as to better combine students' thinking situation to make corresponding teaching design and activity arrangements. Secondly, the critical tendency assessment shows the characteristics of human thinking and internal motivation, but it cannot fully cover people's critical thinking skills, or the complete thinking ability embodied in different considerations. Therefore, the assessment of students' critical thinking ability should be combined with external thinking skill assessment data, distinguish courses, majors, and grades and adopt different thinking skills tests to obtain, and cooperate with the internal thinking ability reflected in the thinking tendency to evaluate the stage of students' thinking ability more comprehensively. Finally, the teaching of English speech classroom should project the seven dimensions of critical thinking tendency into course teaching and practice, stimulate students' curiosity from internal motivation, learning motivation and interest, guide students to self-reflection and reasoned reasoning, and cultivate students' critical thinking skills from the analysis and reasoning skills of prepared speeches and impromptu speeches, so as to achieve the cultivation purpose of positive development of critical thinking ability.

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