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ENHANCING CRITICAL THINKING SKILLS AMONG BUSINESS ENGLISH STUDENTS: A STUDY AT HUNAN CITY UNIVERSITY

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Abstract: In recent years, there has been a growing emphasis on cultivating critical thinking skills among students in China's higher education system. National education initiatives and reforms have underscored the importance of fostering innovative thinking, practical problem-solving abilities, and creating an environment conducive to independent thought and exploration. Central to the development of innovative spirit and practical skills is the cultivation of critical thinking, which serves as a foundational element for these skills. This shift in educational priorities is in line with the broader goal of enhancing the overall quality of compulsory education.

One key aspect of this educational shift is the exploration of integrated teaching approaches that incorporate subject-based curriculum, research-based methods, project-based learning, and collaborative approaches. These initiatives aim to equip students with essential higher-order thinking skills, including the ability to gather and evaluate relevant information, analyze data, formulate hypotheses, and address complex problems effectively.

This paper explores the evolving landscape of education in China, focusing on the promotion of critical thinking as a fundamental component of students' skill development. It discusses the implications of these changes for teaching and learning, highlighting the importance of nurturing critical thinking skills to meet the demands of contemporary education.

Keywords: critical thinking, innovative spirit, practical skills, higher-order thinking, education reform.

Introduction

In recent decades, cultivating students' critical thinking has received increasing attention in China. The teaching outline of higher education explicitly puts forward the requirement of developing students' critical thinking, and the Outline of the National Program for Medium and Long Term Educational Reform and Development (2010-2020 years) points out that efforts should be made to focus on improving students' innovative spirit and practical skills to solve problems, and create a beneficial environment for independent thinking, free exploration, and innovation[1].

The core of the innovative spirit and practical skills is to think critically, and critical thinking is a prerequisite for the innovative spirit and practical skills. In 2019, the central government issued the Opinions on Deepening Education Teaching Reform to Comprehensively Improve the Quality of Compulsory Education, which proposes "exploring integrated teaching of the subject-based curriculum and carrying out research-based, project-based, and cooperative learning..."[2] which means that developing students' skills in gathering and selecting appropriate information, in analyzing data and designing hypotheses, and in solving problems, i.e., in the category of higher-order thinking skills, is a necessary part of the new requirements for education and teaching.

1. Literature Review

2.1. Critical Thinking

Domestic research, mainly represented by Wen Qiufang and others, translates "critical thinking" as an ability to think and discern (Sibian Nengli)[3]. Critical thinking, like creative thinking, problem-solving, and decision-making, belongs to higher-order thinking skills. It has three skills: the skill of gathering and selecting appropriate information, the skill of analyzing data and designing hypotheses, and the skill of problem-solving. And that competency is crucial for knowledge transfer and problem-solving skills in new situations. Experts Jin Limin and Pu Shi suggest

that English majors who have reached a certain level of proficiency and want to improve their language skills further need the support of critical thinking skills[4].

The first-invented one, California Critical Thinking Disposition Inventory based on the Delphi report, measures seven traits that affect learning ability and efficacious application of critical thinking skills, truth-seeking, open-mindedness, the anticipation of possible consequences, proceeding systematically, confidence in one's own reasoning abilities, inquisitive to learning, and mature judgment.

2.2. Critical Thinking for Business English Majors

Many countries offer a major in Business English as part of their tertiary education system. In many undergraduate programs for Business English around the world, the primary goal of the education is to develop students' ability to communicate effectively and professionally in English for various business contexts. Some critical skills and competencies typically emphasized include: 1. English language proficiency. 2. Understanding essential business concepts and theories. 3. Ability to analyze and interpret business data. 4. Cultural competence and intercultural communication skills to effectively interact with business partners from diverse cultural backgrounds. 5. Effective use of technology. 6. Entrepreneurial skills and innovation. In summary, the goal of Business English programs is to provide students with a comprehensive education in the language, culture, and skills required for successful communication and business practices in a global context[5].

Integrating an analysis of the seven qualities of critical thinking skills and the goals of Business English majors, it is found that each critical thinking skill is essential and needs to be mastered by students. However, open-mindedness, analytical ability, systematization, and cognitive maturity are more important. Open-mindedness makes students more comfortable and tolerant when negotiating or collaborating with business partners from different cultures, which is a critical competency in cross-cultural communication. Analytical and systematization skills help students conduct market research, analyze data and make sound decisions. Cognitive maturity significantly impacts students' innovation and entrepreneurship and their ability to make judgments and solve problems.

2.3. Problem-Based Learning

Problem-Based Learning (PBL) is a constructivist learning model introduced at McMaster University in Canada in 1965. Soon after, the McMaster School of Medicine's PBL model was established in 1974. This model inspired other universities to implement similar designs in their curricula. Since then, PBL has gained popularity and use in many higher education institutions worldwide, such as Australia, Denmark, and China. According to Tiwari and other academics, PBL is the best teaching strategy to enhance critical thinking skills and it is supported by proof from empirical studies[6-7]. The PBL implementation process begins with the instructor giving an uncertain or open-ended question to guide students to analyze the problem, set goals, gather resources, summarize ideas, and reflect on the problem-solving experience, and aims to promote students' analytical reasoning, problem problem-solving and collaborative learning skills, which are all components of critical thinking skills.

2.4. Applications of PBL Model in Business English Education

As an emerging major approved in 2007, the Business English major has an advantage in developing students' critical thinking skills due to the characteristics of its curriculum and knowledge background[8]. Since the PBL model was introduced to China, teachers in China have been exploring the creative combination of PBL and teaching to improve students' critical thinking skills from nursing to foreign language teaching. Therefore, the PBL model offers the possibility and feasibility for developing students' critical thinking skills in Business English courses. In the teaching of Business English at Hunan City University, the application of the PBL model is reflected in classroom presentation tasks (students complete the corresponding tasks through group collaboration), e-commerce competition (students use a virtual computer platform in the practical class to practice relevant operations, and the teams that advance to the school competition then further complete data analysis), marketing tasks (including selling goods and market research), case studies (teachers in the classroom (assuming a scenario), mock business negotiation and internship, etc.

3. Methodology

The methods used in this paper are questionnaires and interviews. The former is to understand the current situation of Business English majors' critical thinking

skills, and the latter is to interview 9 students and 3 graduates for deeper causes of the data collected.

3.1. Samples and Instruments

Considering the fact that the specialized courses are not yet offered in the first year, the subjects were selected from sophomore to junior undergraduates of Business English at Hunan City University, among which 39 were sophomores, 43 were juniors, and 70 were seniors. The test was conducted in October 2022 as an online questionnaire; 136 questionnaires were collected, seven questionnaires with less than 180 seconds response time were excluded, and 129 valid questionnaires were obtained, with an efficiency rate of 94.85%.

Given the widely validated and recognized reliability, a Chinese version of the Critical Thinking Disposition Inventory (CTDI-CV), revised by Peng Meici et al., which has conceptual equivalence with the California Critical Thinking Disposition Inventory (CCTDI), was used as the measurement instrument in this study. This questionnaire measures the previously mentioned traits of the seven dimensions of critical thinking, each trait contains ten items, and the complete questionnaire has 70 items, of which 30 are positive, and 40 are negative. A 6-point Likert scale format was used, with 1=strongly disagree, 2=disagree, 3=not quite agree, 4=basically agree, 5=agree, and 6=strongly agree. The scores were statistically analyzed, and a score of 40 or above indicated strong performance in a trait; a total score of 280 or above indicated positive critical thinking skills.

In this study, the author also adopted individual interviews, which were conducted according to standard procedures, using an outline of interviews made in advance. The interviews were carried out with 9 undergraduates and 3 graduates of Business English, online in early February 2023.

3.2. Data Analysis

The following are two aspects of the study's findings based on the questionnaires: one is a brief overview of the overall tendency of students' critical thinking skills, and the other is a lateral and longitudinal analysis of the variability of critical thinking skills in different dimensions.

3.2.1. Overall Level of Critical Thinking Disposition

As shown in Table 1, the overall average score of Business English majors' critical thinking skill is 281.13. According to the CTDI-CV evaluation criteria, the overall critical thinking skill of the students is positive but only slightly higher than the threshold value of positive and negative tendency (280); only four students scored more than 350, accounting for 3.1% of the total; the vast majority of students had a strong (scores between 280 and 350) or ambivalent (scores between 210 and 280) tendency to think critically, with 40.3% and 56.6% respectively; the number of students with scores below 210 was 0. Overall, the critical thinking tendency of Business English majors in Hunan City University is strong in general, but not high in intensity, with very few students having a solid critical thinking tendency and a large number of students having a negative critical thinking tendency.

	Mean	Standard Deviation	Max~Min	<210 Scores (Person/%)	≥210 Scores<280 Scores (Person/%)	≥280 Scores<350 Scores (Person/%)	≥350 Scores (Person/%)
Total Score	281.13	32.58	237~364	0	73/56.6	52/40.3	4/3.1

Table 1: The total score of Business English majors' critical thinking disposition.

3.2.2. Dimensions of Critical Thinking

Table 2 shows the statistical results of the scores of the seven dimensions of critical thinking skills. The disposition of each dimension in the order of strongest to weakest is intellectual curiosity, analytical skill, open-mindedness, self-confidence, cognitive maturity, systematic analysis, and truth-seeking. Among them, the mean value of the first four dimensions is higher than the cut-off value of 40 points, which indicates a strong tendency of curiosity, cognitive maturity, open-mindedness, and analytical ability, which is a positive performance, with curiosity as the strongest tendency. The mean values of the last three dimensions were lower than the positive and negative cut-off values. They were in the range of 30 to 40, indicating that truth-seeking, systematic analysis, and self-confidence tend to be in a contradictory state, which is a negative performance, with the weakest tendency being truth-seeking. It is noteworthy that each dimension is particularly

polarized. Further analysis revealed that as many as 28% of all students had a very high propensity to seek knowledge (with a score of more than 50). The number of students scoring less than 30 on this dimension of truth-seeking was higher, at 32%. Most students scored 30 to 40 or 40 to 50 on each dimension of tendency, which is a relatively solid or ambivalent state.

Table 2: Business English majors' scores on each dimension of critical thinking disposition.

	Mean	Standard Deviation	Max~ Min	<30 Scores (Person/%)	≥30 Scores<40 Scores (Person/%)	≥40 Scores<50 Scores (Person/%)	≥50 Scores (Person/%)
Seeking Truth	34.17	7.05	20~53	32/24.8	63/48.8	30/23.3	4/3.1
Open-mindedness	41.53	5.15	33~52	0	48/37.2	68/52.7	13/10.1
Analytical Ability	43.05	5.03	34~56	0	33/25.6	83/64.3	13/10.1
Systematic Analysis	38.95	5.82	29~52	2/1.6	73/56.6	44/34.1	10/7.8
Self-confidence	40.67	6.01	29~54	2/1.6	54/41.9	64/49.6	9/7.0
Curiosity	43.68	7.03	27~57	2/1.6	44/34.1	55/42.6	28/21.7
Cognitive Maturity	39.09	6.26	30~55	0	72/55.8	49/38.0	8/6.2

In this study, the number of sophomores was 36 (27.9% of the total), juniors was 38 (29.5% of the total), and seniors was 55 (42.6% of the total). A comparative analysis of the different dimensions of critical thinking disposition among Business English majors in different grades is detailed in Table 3. There were some differences in the total scores and the scores of the seven dimensions among the students of different grades, but they were insignificant. Among them, senior students have higher total scores than other grades, but the advantage is not apparent. Sophomores have the lowest scores among the three grades in five dimensions, including total scores, except for self-confidence and curiosity, which are more prominent. And the ability of different individuals in different dimensions in the grade varied widely.

Table 3: Comparisons of critical thinking disposition across grades.

	Sophomore	Junior	Senior
Seeking Truth	30.81±6.03	35.76±6.88	35.27±7.04
Open-mindedness	40.56±4.77	42.16±5.58	41.73±4.98
Analytical Ability	43.06±4.59	42.55±5.29	43.38±5.09
Systematic Analysis	38.92±5.59	39.61±5.44	38.51±6.16
Self-confidence	42.00±5.55	40.21±5.33	40.11±6.59
Curiosity	44.97±5.77	42.47±6.93	43.67±7.67
Cognitive Maturity	36.36±4.33	39.97±6.83	40.27±6.38
Total Score	276.67±4.40	282.74±2.22	282.95±2.71

From sophomore to senior year, the mean value of this dimension of truth-seeking tends to increase (from 30.81 to 35.76) and decrease (from 35.76 to 35.27). The increase between sophomore and junior years was tremendous, indicating that this quality was more significantly improved during this period.

The dimension (open-mindedness)'s mean value show a trend of increasing first and then decreasing with increasing grade levels. There was a significant

difference between sophomores (m=40.56, sd=4.77) and juniors (m=42.16, sd=5.58). The openness of students' minds reaches its highest level (42.16) during the junior year in college. As a result of the intervention of the PBL model in the instructional design, the third-year students had a stronger tendency towards the open-mindedness dimension, which was seen as a remarkable increase in critical thinking skills.

For analytical ability, the graph presents two opposite trends, in which the mean value of analytical skill tends to decrease (from 43.06 to 42.55) and then increase (from 42.55 to 43.38) in different grades, and the disposition is weakest in the junior year, but the skill improves faster and significantly between the junior and senior years.

The mean value of systematic analysis tends to increase (from 38.92 to 39.61) and then decrease (from 39.61 to 38.51) with the grade, with a more considerable decrease between junior and senior years. There was a significant difference between sophomores (sd=5.59) and juniors (sd=5.44) in the systematic analysis dimension.

The mean value of the dimension of self-confidence decreases step by step (from 42.00 to 40.21 to 40.11), especially during the period from sophomore to junior year. The standard deviation for senior year was a whopping 6.59.

The mean value of curiosity exhibits a decreasing (from 44.97 to 42.47) and then increasing (from 42.47 to 43.67) trend, with a more significant decrease between sophomore and junior years and an overall decreasing trend. The standard deviation increases step by step.

The overall trend of cognitive maturity is increasing, in which the mean value increases step by step (from 36.36 to 39.97 to 40.27), and the growth rate is greater between sophomore and junior years. There was a noteworthy difference between sophomores (sd=4.33) and juniors (sd=6.83) in the cognitive maturity dimension.

It is found that the differences in students' critical thinking tendencies are less significant across grades. The mean values of students' critical thinking skills were not significantly different between juniors and seniors, with an overall stepwise increase, with a more considerable increase between sophomore and junior years.

3.3. Interview Results

Both senior interviewees agreed that family factors have the most significant influence on improving their critical thinking skills. During their growth, parents give ample opportunities and space for independent thinking, allowing them the rights and abilities to plan their future rather than imposing their own ideas on them, which is also cultivating children's critical thinking skill and thinking skills.

And two graduates believed that professional teaching had a greater impact. In the case of undergraduate education, presentation tasks, e-commerce competitions, and market research were found to be very effective in promoting critical thinking skills. They realized that the experience gained from the exposure and exercise in the previous competitions could be applied in the workplace. However, the degree of mastery could have been more profound, and some experiences were only at the level of awareness and needed to be learned in depth. When the application of the PBL model is designed into undergraduate teaching, students are encouraged to recognize issues from different perspectives and are more able to understand others, so as to help build empathy. One graduate added that, "As well as those group assignments that were once completed, students collected information, organized and summarized it, refined it into their own, and then effectively output it in the reports. From input to output, together with the teacher's timely feedback, the whole process can make people learn a lot of professional aspects or other areas of knowledge and improve the sense of teamwork and the skill of thinking and critical thinking skill." (Interviewee 10)

For critical thinking development, the two senior respondents carried out directional training and mentioned similar approaches, such as watching debate tournaments in online or offline formats. They believe that watching debates is the best choice to feel the impact and collision of ideas because it can stimulate different attitudes and perceptions, quickly improve one's skill to think and discern, and even further reflect on oneself, which is necessary. One interviewee expressed that, "Reading books is the most convenient way to get in touch with thousands of views and attitudes in the world; traveling, as opposed to reading books, gives people the most direct and objective feedback on their senses, and thus triggering more profound and more multidimensional thinking and becoming more tolerant." (Interviewee 2)

Furthermore, the interviewees are very aware of the importance of critical thinking skills. One of them (Interviewee 5) is very confident in her skill to deal with problems, make plans and think independently.

In her opinion, people with this skill do not follow others when encountering problems. A solid critical thinking skill can help a person see the principal contradiction of a problem, grasp the correct method and rhythm of analyzing and solving the contradiction, and grasp the big picture more quickly while also taking into account the local details.

Companies also value critical thinking skills. A senior interviewee (Interviewee 7) argued that, "In the job search process, many companies use 'leaderless group discussion' to examine the candidate's skills to think, leadership, communication and interpersonal skills, and organizational planning skills. Employees need to analyze problems, collect and select appropriate information, formulate hypotheses, and finally solve problems." One graduate (Interviewee 12) is a project manager who needs to interface with 12 departments and consolidate information for client reporting. In this process, critical thinking skill is essential to make trade-offs with information and track down inaccurate information to produce an authentic and reliable report.

4. Discussion and Recommendations

4.1. Discussion

Firstly, the trend of the change of the critical thinking skills in different grades shows that the existing design of the application of the PBL model in the teaching of Business English at Hunan City University is effective. Nevertheless, it also needs further reform and innovation.

Secondly, comparing the strength of the tendencies of each dimension reveals that truth-seeking, systematic analysis, and self-confidence tendencies are negative manifestations; the truth-seeking tendency is the weakest. This phenomenon is somewhat related to the value orientation of Chinese collectivism. Seeking the truth at all costs, giving up one's interests, or even departing from one's beliefs, or bravely questioning a team and insisting on views that do not agree with the vast majority of people may be difficult for some students to achieve. It is worth noting that the two-level differentiation of each dimension is more severe, indicating that teachers' means of promoting students' critical thinking skills need to be entirely adequate for every student[9]. However, the side effect also reflects that some students gradually show Chinese individualistic characteristics, bravely pursuing the truth and speaking out for it.

In addition, among the seven dimensions, students have the most assertive disposition to be inquisitive. This finding reflects that Business English majors are curious about knowledge and are eager to try, learn, and understand, whether it is professional knowledge or knowledge outside of their major, with enthusiasm and curiosity, which is a very encouraging research finding. Therefore both teachers and students themselves can seize and amplify this advantage and drive to enhance other traits that tend to be weaker, thus enhancing thinking skills in general and maximizing them.

4.2. Recommendations

From the perspective of the educated, the future reform of Business English teaching can be based on the inherent teaching mode, both theoretical and practical, in light of the research data and the feedback from the interviewees. Theoretically, teachers can refer to enterprises' "leaderless group discussion" model, hold debate activities to enhance students' thinking ability, or assign more appreciation tasks about classic films or literature books. In today's fast-paced era, the more fragmented information is, the more narrowly people input their views. In undergraduate teaching, teachers are suggested to guide students to get down to reading more actively. In addition to specialized books, reading extracurricular books can also be encouraged. Not only reading for advancement but also because of interest. Practically, the foreign trade document practice and cross-border e-commerce social practice arranged by the school should be implemented more effectively, and the off-campus internship assessment should also be strengthened.

For some relatively formalized group discussions or class settings, some thought can be made to move beyond the traditional format. This innovation-driven application cannot be held hostage by formalism.

5. Conclusions

The study investigates whether and how the PBL model affects Business English students' critical thinking skills, and what future improvements to the model are needed. The results of the study show that the students' critical thinking skills are increasing step by step, which demonstrates that the PBL model is effective and has a positive effect on the promotion of students' critical thinking skills, and that the combination of the PBL model and Business English education is worth continuing with certain reforms and innovations in the future. Teachers can also lead students to further consciously improve the weaker dimensions of critical thinking skills. By comparing

the four more crucial critical thinking skills traits analyzed ahead with students' current weaker critical thinking skills dimension tendencies, students' systematic analytical skills, i.e., the ability to work through problems in an organized and purposeful manner, need to be strengthened.

In a nutshell, a living source is needed for the undergraduate teaching of Business English, and there is a long way to go for reform. Due to the limited space and knowledge learned, some issues have yet to be studied in depth. The excavation of the reasons behind the data needs to be more comprehensive and professional, with a certain degree of subjective perception.

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