Critical Thinking Instruction Incorporated in Cross-Cultural Communication Course Design: A Needs Analysis Report Based on Voices of Chinese International College Undergraduates

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Abstract

Critical thinking represents one of the most absolutely vital talents for every individual, both in the workplace and in their personal lives. Critical thinking has become a primary concern for all educational institution students in recent decades, particularly Chinese undergraduates. The intention of this study was to investigate the needs analysis of Chinese international college undergraduates' perceptions of critical thinking skills incorporated into a cross-cultural communication course, as well as their expectations of critical thinking skills instructional coursework throughout the cross-cultural communication context. Throughout this mixed-methods investigation, 78 Chinese international college students volunteered to complete a critical thinking disposition inventory (CTDI) as the primary research instrument, in addition to a semi-structured interview. The research uncovered that Chinese international undergraduates exhibited unclear notions of critical thinking abilities. As a byproduct of China's education system, the majority of Chinese international college undergraduates were flooded with dismissive attitudes toward critical thinking abilities. In order to control their academic advancement in a more critical and analytical fashion, Chinese students expressed a pressing need for critical thinking skills to be included in their cross-cultural communication course.

Keywords: critical thinking instruction, cross-cultural communication course, Chinese international college, needs analysis

1. Introduction

1.1 Background of the Study

Cognitive academics and educators continue to be fascinated by Socrates' idea of critical thinking (CT) (Lapina, 2018; Paul & Elder, 2015). The CT process requires learners' ability to interpret, analyze, appraise, reason, and interrogate information (Buchanan, 2016). According to Watson-Glaser (2010), the CT process includes identifying a problem, analyzing facts and evidence, and challenging the source of information. The CT approach produces results using observations and data that have been challenged and evaluated for accuracy (Marabini, 2022). The CT teaches a person proper cognitive abilities and environmental awareness (Martin, 2016). It is a kind of thinking that looks for evidence to support one's actions and ideas (Meltzoff & Cooper, 2018; Raikou et al., 2017). Additionally, this act of thinking confers power on the individual over their own mental structures, enabling them to be shaped based on their own intellectual levels (Paul & Elder, 2019; Mahajan & Singh, 2017). While all CT-related specialists have made significant efforts to determine the effect of CT on an individual's academic learning, Asian students have been criticized for a lack of critical thinking abilities both in school and in the workplace after graduation (Onen, 2021; Nauman, 2017; Febriana et al., 2017). In other words, unless CT ability is promoted as a critical component of teacher-led course teaching, students may not have an equitable chance to acquire it. To satisfy society's demands, colleges must not only offer students the necessary knowledge and practical skills but also implant in them a sense of professionalism and attitudes that are desirable for society, especially in the societies of Asian countries (Braga, 2019; Dirgantara et al., 2018; Orgoványi-Gajdos, 2016). Students, thus, will need to acquire a range of abilities in order to contribute to the educational process, national and global growth, and progress in their disciplines via the use of a variety of teaching-learning and assessment methodologies (Connolly et al., 2022; Garapati & Padmaja, 2020; Estes et al.,

2017).

On second thought, the influence of students' critical thinking abilities on education has been considerably more readily accessible in recent decades (Abrami et al., 2015). Furthermore, Pu (2017) found that Asian students lack the critical thinking abilities required for academic assignments like essay writing and debates due to their cultural and educational backgrounds. Several studies by Western academics have shown that Chinese students studying overseas, notably in Thailand, lack critical thinking abilities (Hitchcock, 2017). Simply put, the critical thinking abilities of Chinese students who study overseas have become more important (Li & Ren, 2020; Sun, 2017). The World Economic Forum also published a study in 2010 on the top five talents needed by 2025, which include analytical thinking, critical thinking, active learning, and learning methodologies (Su, 2020). Employers believe workers' critical thinking skills need to be significantly improved (Heng, 2018). In terms of social life, critical thinking abilities seem to be universally recognized as essential to future success.

1.2 Statement of the Problem

Chinese universities have devoted increasing emphasis in recent years to the development and implementation of effective thinking education for college students, creating courses to clarify critical thinking understanding and skills, but the teaching impact is not optimal (Chen, 2017; Zhu, 2016; Dong, 2015). In other words, students struggle to develop conscious, logical thinking habits as a result of their study and practice in critical thinking courses. On the other hand, when instructors promote critical thinking in their students, they do better. As people are confronted with real-world challenges in learning and life, they usually respond impulsively in accordance with their initial thinking and thinking patterns (Halpern & Dunn, 2021). This is due to the fact that academic habits could possibly be developed throughout the elementary and junior secondary school years (Ruminski & Hanks, 2020), which explicitly demonstrates that only colleges are capable of educating students in critical thinking (Jiang, 2020; Wang, 2019; Chen, 2017). To put it differently, educating critical thinking skills must commence in elementary and middle school, while a university critical thinking course's objective is to hone students' critical thinking abilities (Din, 2020; Nasution, 2019). Unfortunately, to a certain degree, the obstacles and unresolved issues necessary to conduct critical thinking instruction throughout the course potentially exist. The idea of teachers' adopting critical thinking instruction in the classroom may collapse over China's basic academic training and test-oriented education, which may be traced back to the traditional cramming-driven education system (Raphals, 2022; Zhou, 2016; Kim, 2015).

Education in China, from an educational standpoint, is founded on the notion of survival-competitive exam-oriented education (Zhu, 2020; Han et al., 2013). The students are proficient at responding to questions on a variety of board exams, but they have received little instruction in critical thinking skills that enable them to be creative regardless of whether they choose to study locally or internationally (Chen & Wang, 2018; Yang & Chen, 2017). Apparently, the lack of a suitable critical thinking instruction-based discipline in the classroom for the general benefit of Chinese students has been demonstrated to be the most important characteristic restricting Chinese students' academic ability and resulting in quality defects, according to the findings (Wilberding, 2021; Sanacore, 2021; Lu, 2018; Wang, 2016). In a word, it is vital in critical thinking training to stress the importance of real-world learning situations and to rethink the traditional teaching paradigm (Chen & Wang, 2018; Lu, 2018; Wang, 2016). Prior to teaching critical thinking skills alongside relevant classroom activities, it is necessary to analyze the needs and assess students' and instructors' critical thinking abilities. Students learn from their teachers, but they also learn from activities that require them to work hard and think critically (Wilberding, 2021; Sanacore, 2021).

1.3 Objective of the Study

By including instruction in critical thinking skills into a cross-cultural communication course, Chinese students studying abroad may be able to improve their critical thinking capabilities. To do this, the researchers perform a needs analysis of integrating critical thinking teaching into Chinese International College's Cross-Cultural Communication Course from both the student and instructor perspectives. In light of these concerns, the specific research topics addressed in this study sought to answer the following questions:

1) Prior to cross-cultural communication course design, how are the critical thinking skills of Chinese international college undergraduates?
2) What does the cross-cultural communication course's requirements analysis reveal about the instruction of critical thinking based on Chinese college undergraduates' perspectives?

1.4 Significance of the Study

This article presents a methodology for developing and integrating critical thinking training into a cross-cultural

communication course, emphasizing the significance of doing a needs analysis based on Chinese students' perspectives. Alternatively, this research finding may aid and benefit the course instructor in preparing and developing the cross-cultural communication course by incorporating critical thinking instruction to assist Chinese students in applying critical thinking knowledge acquired during the course to solve future problems (Jackson, 2021; Haber, 2020; Hadjianastasis, 2017). From a practical aspect, studies on the critical thinking ability of Chinese college students, particularly those studying abroad, may be in their infancy. To assist international Chinese college students in solving real-world issues effectively, rationally, and systematically, critical thinking skills teaching, including the activity or technique of assessment, may be crucial. This paper could be used to help course instructors get a better and clearer picture of how to teach Chinese international students in other countries how to think critically. Students' positive feedback on integrated critical thinking teaching may be well used in the future.

2. Literature Review

2.1 Needs Analysis as a Concept

Learners' requirements and preferences are collected, analyzed, and then courses are chosen based on the results (Kováiková, 2015; Sieglová, 2019). Wishes, desires, expectations, reasons, deficiencies, limitations, and requirements are all needs (Davis, 2021; Harland, 2020). That is, individuals are driven by their own circumstances. According to Schuler et al. (2019), students may need to master survival skills. It's critical to create educational programs and curricula that cater to prospective students' demands, especially for post-graduate work. The needs analysis also aims to determine the instructional requirements for the target course content in order to build a curriculum (Rose & Sookraj, 2015; Rashidi & Kehtarfard, 2014). When assessing students' special needs, we come across the term "needs analysis," which used to indicate something more. The needs analysis was done in the early stages of ESP (1960s and early 1970s) to determine student communication needs and instructional objectives (Dan & Dan, 2018; Liu, 2015). Since the goal of needs analysis is to gather information about students' needs, the activities related to it have evolved dramatically (Otilia, 2015).

2.2 The Various Needs Classifications

Similar to the need categories, scholarly perspectives on needs assessment are diverse. In the next part, the researchers would examine how various academics have defined the various types of criterion.

2.2.1 Experienced and Perceived Needs

Berwick and Johnson (1989) distinguished between perceived and felt needs. A learner's perceived requirements are goals derived from the learning experiences of others. He thought that perceived needs were experts' assessments of other individuals' educational deficiencies. As a consequence of instructors' or educational institutions' external evaluations of learners' language requirements, reported needs were often regarded as normal, objective, and genuine. Individuals' perceived requirements are those that they believe they need. There was a relationship between attitudes, perceptions, expectations, and emotions of need. They are the "wishes and desires" of the students.

2.2.2 Learning and Target Needs

These are the demands identified by Hutchinson and Waters (1987). All of these are examples of "goal requirements." Consider the "needs," "lacks," and "wants" of the circumstance. According to Hutchinson and Waters (1987), "necessities" are success criteria. These methods of data collection are efficient and practical. As a teacher, you must prioritize the needs of your students. Comparing existing knowledge to requirements shows "gaps." A school may choose to teach (or not). The difference between the "goal proficiency" and the "actual proficiency" of students (Hutchinson & Waters, 1987) Hutchinson and Waters (1987) define target requirements. Wants and needs are equivalent. Students are dismissed. Individuals are self-aware. The term "wants" is described by Hutchinson and Waters (1987). Students have subjective wants, whereas instructors have objective needs. Sometimes, designer expectations and learner objectives conflict. The student must be aware of their post-training objectives. Berwick and Johnson provide a definition of "wants" (1987). Hutchinson and Waters (1987) recommend building a course around the starting and ending places. Long, tedious, and out-of-date educational materials may cause pupils to lose interest, but learners who are engaged may learn more efficiently. Hutchinson and Waters' examination of learning settings, previous knowledge, and abilities provides a useful analysis of learning needs. It demonstrates that objectives and learning are essential, but also that the procedure is important.

According to Hutchinson and Waters (1987), relying just on expected results is insufficient because educators

need to consider the route's requirements, prospects, and limits. Concerns regarding the path between the beginning point (lacks) and the target grow throughout the learning process (necessities). For instance, learners may be enthusiastic about a topic or a job but find lengthy, uninteresting, and out-of-date training materials tedious. Learning should be pleasurable, advantageous, controllable, and fruitful. It is curious about learning, not knowing. In actuality, the notions of "learning requirements" and "learning needs" developed by Hutchinson and Waters have proven beneficial. Therefore, the learner's requirements must be continuously assessed. Course designers must take into account the learner's motivation, learning environment, and prior knowledge and abilities. Hutchinson and Water's (1987) goals and learning needs are also very different from product-oriented and process-oriented needs. Product-oriented needs focus on academic needs that are situation-specific and result-oriented, while process-oriented needs focus on the whole process.

2.3 Critical Thinking Skills

Critical thinking abilities consist of deliberate deliberation between what to do and what to accept as fact (Doan & Dan, 2018; Kováiková, 2015). Critical thinking entails evaluating and deciding whether or not you must accept anything by evaluating it with prudence. Additionally, critical thinking abilities could never be retained, but they may be acquired through persistent practice. From lower-order to higher-order thinking abilities, critical thinking is comprised of a variety of interconnected thinking components. Critical thinking requirements include clarity, correctness, logic, thoroughness, importance, fairness, depth, breadth, and precision (Erkens et al., 2018; Cobbinah, 2017). The guidelines must be implemented to ensure that the conclusion reached through the use of critical thinking is legitimate and intelligible. In addition to research, interpretation, and evaluation, critical thinking includes other fundamental processes (Onen, 2021; Masaeid, 2020). An investigation is undertaken to uncover relevant evidence or locate sufficient relevant information to address the issue's major questions (Masaeid, 2020; Erkens et al., 2018). If an individual would like to reach a conclusion on a matter, an investigation assists in identifying the most pertinent evidence. Furthermore, interpretation is a fundamental element of critical thinking. The definition of interpretation is determining the significance of the collected evidence (Kaeppel, 2021; McMullin, 2018), along with the fact that the interpretation provided must make sense. Throughout study and analysis, it is required to draw a conclusion based on the relevant facts acquired, while the conclusion must be consistent with logic. Even though research and interpretation are interrelated, a critical thinker's conclusion is based on both perspectives. Prior to reaching any conclusion, a rational critical thinker must possess a full awareness of the problem or issue's hazards, answers, and cures (Miller & Tucker, 2015). When a person participates in investigation, interpretation, and assessment, they are engaging in the essential processes of critical thinking.

2.4 Critical Thinking, Intercultural Competence and Awareness

A small number of academics have investigated the relationship between critical thinking (CT) and intercultural competence (ICC). Facione and Gittens (2015) assert that the ICC facilitates sound judgment in culturally complicated contexts. The author establishes a connection between CT and ICC by referencing decision-making that necessitates CT. Furthermore, two of the six CT capacities were discovered in Facione's (2013) study (Daniel & Fair, 2020; Facione & Gittens, 2015) in her prior research on intercultural competence, examples and analysis in particular. More than this, Facione and Gittens (2015) also emphasized comparison thinking, cognitive flexibility, and the ability to stay objective and connect. These three skills exhibit self-regulation since they demand self-reflection. Some other researchers even highlighted respect, openness, and curiosity as positive IC communication traits, two of which match Facione's open-mindedness and inquiry (Robinson & Knight, 2019; Van et al., 2013). Last but not least, the cognitive talents needed for CT and ICC overlap and are crucial for effective cross-cultural communication, according to Bennett (2013). Meanwhile, analysis, interpretation, inference, empathy, active listening, and information collection are all CT skillsets (Facione & Facione, 2013). Bennett (2013) involves problem-solving abilities while creating and sustaining connections, which requires exercising all of Facione's CT talents (Miller & Tucker, 2015). "Curiosity, initiative, non-judgmentalness, open-mindedness, and tolerance of ambiguity" are among the scholar's core values (Bennett, 2013), which potentially support Facione's (2013) critical spirit and self-regulation.

3. Research Methodology

3.1 Participants

A total of seventy-eight students (N = 78) of Chinese nationality (N = 32, Male = 41%; Female = 46, 59%) from a Thai university-affiliated Chinese International College participated in this study. These undergraduates were required to enroll in the cross-cultural communication course administered by the General Education department. These individuals in terms of their majors were International Business (N = 55), Finance and Accounting (N =

14), and Tourism Management (N = 9) programs. Table 1 presents a description of the participants' demographic information.

Table 1. Description of the Participants' Demographic Information

Category	Variant	Percentage (%)	Frequency (Count, N)
Gender	Male	41%	32
	Female	59%	46
Majors	IB	70%	55
	FA	18%	14
	TM	12%	9

Note. IB: International Business; FA: Finance and Accounting; TM: Tourism Management.

3.2 Research Instruments

3.2.1 Short Form Critical Thinking Disposition Inventory (SF-CTDI)

The intention of this study was to explore Chinese college freshmen's perspectives on the critical thinking instruction embedded in a Cross-Cultural Communication course. As a result, the Short Form-Critical Thinking Disposition Inventory (SF-CTDI), translated from the English version into the Chinese version, was utilized to assess the critical thinking skills of Chinese international college undergraduates prior to the design of a cross-cultural course as the initial step in the current research design. The SF-CTDI comprises of 18 items and three subscales: systematic analysis, thinking within the box and thinking outside the box. It was constructed by Hwang et al. (2010), and each question is scored on a 5-point Likert scale ranging from 1 (Never), 2 (Seldom), 3 (Sometimes), 4 (Frequently) to 5 (Always). In terms of reliability and validity, the SF-CTDI scale was established with 44% of variation described (Hwang et al., 2010). Overall and subscale Cronbach's alpha coefficients and intra-class correlation coefficients were greater than 0.8, which was deemed to be an acceptable level of reliability. Based on these findings, the SF-CTDI (Chinese version) is a trustworthy instrument for assessing critical thinking disposition in academic settings.

3.2.2 Semi-Structured Interview

A total of forty-six individuals were interviewed using a semi-structured method. Participants who agreed to be interviewed again after completing the critical thinking disposition were recruited. In order to address the second research question, the researchers developed a series of interview questions to obtain a more in-depth understanding of how these students perceived critical thinking abilities and the usefulness of cross-cultural communication courses. The following is an example of a few vital questions that were asked during the interview:

1) What do you think about your individual critical thinking skills/abilities based on your previous learning or academic experiences?

2) Based on the first question, what would be your attitude toward Chinese students' general critical thinking skills and abilities?

3) If critical thinking skills/abilities, such as identifying problem, analyzing, reasoning, judging, applying and comprehending, which critical thinking skills do you believe are the most beneficial and practical to be acquired from the Cross-Cultural Communication course?

3.2.3 Data Collection and Analysis

The gathering of data occurred between August and December of 2021. One of the researchers reached out to two instructors in charge of Cross-Cultural Communication courses offered by the department of General Education at a Chinese international college affiliated with a Thai university, requesting their assistance in distributing the Critical Thinking Disposition Inventory survey to their Chinese undergraduate students. The responses of all seventy-eight responders were collated. In the meanwhile, thirty-six students who indicated interest in participation were asked to participate in individual interviews lasting 15 to 20 minutes. The comments taken from individual participants would be recorded in English, and the interviewees' responses were translated from Chinese to English for transcription of qualitative data in order to undertake theme coding analysis. The bulk of the data was collected using a CTDI survey and semi-structured online interviews. As is typical in quantitative research, frequency and percentage analyses were used to examine the data in this study. Quantitative studies were used to ascertain the participants' perspectives on their own critical thinking abilities.

On the other side, qualitative data derived from verbatim interview transcriptions highlighted key elements of a practical cross-cultural communication course that incorporates critical thinking instruction, as experienced by Chinese college learners. The quantitative and qualitative data were incorporated in order to allow discourse among Chinese college students and course designers about the fulfillment of the prerequisites for critical thinking education inside a cross-cultural communication course.

4. Research Results

4.1 Burning Issue: Absence of Critical Thinking Skills Among Chinese Undergraduates

In order to carry out a quantitative analysis on the answers that each participant provided to all 18 questions that were a part of the critical thinking disposition inventory scale, the SPSS version 25.0 software package was utilized. In Table 2, the results of each item are depicted in completeness, along with the item's mean score (X), the standard deviation (SD) for the complete set of items, and the average score for each categorical variable, in that order.

Table 2. A summary of participant's responses to CTDI

I.	Systematic Analysis (item 1 to 5)	N	Mean
1.	I am a person with logical thinking	78	2.37
2.	I am good at solving problems	78	2.46
3.	I can easily organize my thoughts	78	3.11
4.	I appreciate myself as a person who has comprehensive and precise thoughts	78	3.07
5.	While facing a problem, my colleagues/peers are used to asking for my opinion in their decision-making because I am objectively analyzing the problem	78	2.45
Average			*2.69*
II.	Thinking within the box (item 6 to 13)		
6.	I only look for the truths which would support my opinions rather than those that would reject my opinions	78	3.27
7.	I am afraid of discovering the truth in many issues	78	3.55
8.	During a team discussion, if someone's argument had been denied by others, the person would not have a right to express their argument	78	4.15
9.	Everyone has the right to address their opinions, but I don't bother with what they say	78	3.19
10.	I pretend to be a logical person although I am not	78	3.93
11.	Continuing education activities are a waste of time	78	3.82
12.	If possible, I try to avoid reading	78	4.32
13.	Decisions made by authority are always right	78	4.75
Average			*3.87*
III.	Thinking outside the box (item 14 to 18)		
14.	I have a strong desire for knowledge	78	2.21
15.	I am satisfied that I can understand others' ideas	78	4.02
16.	I expect to face the challenge of peers' care	78	2.80
17.	It is interesting to solve tough problems	78	1.84
18.	I like to know how things work out	78	2.14
Average			*2.60*

Table 2 discloses that in answer to the first study question, which was, "Prior to cross-cultural communication course design, how are the critical thinking skills of Chinese international college undergraduates?" Chinese college student participants in the current study confirmed an average mean score of 3.05 (X = 3.05) acquired from the whole critical thinking disposition inventory (CTDI). Furthermore, according to the categorical variables of the CTDI, such as systematic analysis, thinking within the box, and thinking outside the box (X), undergraduate participants demonstrated a significant degree of critical thinking skills in an unfavorable manner. This was particularly the case for undergraduates' systematic analysis (X = 2.69, item 1−5) and thinking outside the box (X = 2.60, item 14−18). On the other hand, the outcomes of the study indicated a high averaged mean score of students' thinking within the box (X = 3.87, item 6−13). Reversely, this categorical variable reflects students' inability to apply their critical thinking abilities across the whole of the academic context.

4.2 Chinese Undergraduates' Vague Awareness of Critical Thinking Skills

To address the second study question, "What does the cross-cultural communication course's requirements analysis reveal about the instruction of critical thinking based on Chinese college undergraduates' perspectives?" Initially, the findings of the interviews with Chinese undergraduates were categorized according to their grasp or

knowledge of critical thinking abilities and their awareness of the content of critical thinking skills. Samples of the perspectives of Chinese undergraduates considering individual critical thinking skills (abilities) based on their past learning or academic experiences were summarized in Table 3.

Table 3. General remarks of Chinese undergraduates regarding individual critical thinking abilities

Chinese Undergraduates' Response Excerpts from Interview Question 1
Interview Question: what do you think about your individual critical thinking skills/abilities based on your previous learning or academic experiences?
S1　　*Sometimes I had trouble grasping the core idea of analytical thinking*
S3　　*Honestly, I didn't really understand the significance of the term critical thinking*
S7　　*Once a while, I always tell myself that I am confused by the definition of critical thinking*
S10　*…critical thinking appeared to think critically, yet I thought I often just agreed with others without much consideration*
S11　*In my opinion, critical thinking claimed to be analytical, but in reality we…I mean frequently just accepted the views of others without making further question*
S14　*In China education, we agreed that critical thinking included seeking for other perspectives or facts to check the accuracy of information but…seldom questioning or arguing it*
S26　*I agree that critical thinking included finding various opinions or information to verify knowledge and sometimes most Chinese students do not again tend to be questioning further*
S29　*Based on my experience, critical thinking may include searching for and weighing competing perspectives and evidence in order to establish a body of knowledge …maybe that is enough and we do not need to raise any doubts*

First, Chinese undergraduates were uncertain about the underlying meaning of critical thinking skills, yet they were used to hearing the phrase critical thinking abilities. Some of the other participants indicated that critical thinking seemed to do the thinking in a critical manner, but they tended to simply follow the views of others or agree with their points of view without much thought. Other undergraduates agreed that critical thinking included searching for other viewpoints or facts to confirm the veracity of information without challenging or disputing it.

4.3 Dismal Critical Thinking Abilities among Chinese Students

Conversely, the research findings from the interview highlighted that undergraduate respondents had insufficient critical thinking skills owing to their test-focused education system and compulsive memorizing. In addition, other undergraduate respondents believed that Chinese students invariably observe their lecturers' commands, which are derived from the customary regime of the authorities. Moreover, a significant number of undergraduate students expressed that the critical thinking skills of Chinese students may very well be limited or cease to improve after high school, as a result of the study-for-examination instructional methods, which could be taken into account a stereotypical fashion, exacerbating Chinese learners to be robots devoid of creative expression, intellectual curiosity, and critical thinking skills. The representative comments made by participants are shown in Table 4.

Table 4. Undergraduates' remarks regarding the general critical thinking abilities of Chinese students

Chinese Undergraduates' Response Excerpts from Interview Question 2
Interview Question: Based on the first question, what would be your attitude toward Chinese students' general critical thinking skills and abilities?
S1　　*In China, I think Students in their first year of college did not have enough critical thinking skills because their education system was focused on tests and they had to memorize everything since high school*
S3　　*Due to China's test-focused education system and excessive memorization, Chinese learners lacked critical thinking abilities*
S6　　*To tell the truth, China students' lack of critical thinking abilities and this may be traced back to our school system, which places an excessive emphasis on standardized testing and memorizing skills*
S7　　*Chinese students always do what their teachers tell them to do, which is based on how the authorities have always done things*
S9　　*Students in China always follow teachers' instructions. You know based on the country's traditional political system*
S15　*The normative system from which the authorities' directives are drawn is universally observed by Chinese students, who always do what they are told by their professors*
S17　*Study-for-examination pedagogy, which might be seen as stereotyped, may cause China students to become robots lacking in artistic activity, independent thought, and critical thinking abilities, and may prevent these qualities from developing beyond high school*
S19　*Study-for-examination teaching at high school, which may be seen as stereotyping, may turn China students into mindless automatons that lack creativity, independence, and critical thinking skills*
S22　*The conventional Chinese study-for-the-exam strategy may transform students into soulless automatons who never learn creative or critical thinking abilities*

4.4 Zero-Remembering, Identifying-to-Analyzing, Applying-to-Inventing Cross-Cultural Communication Class

Last but not least, the findings of the study indicated that, in terms of Chinese undergraduates' perspectives on how critical thinking instruction is incorporated into a cross-cultural communication course as the core requirement, undergraduates anticipate learning about broadening individual eyes to the world, intensively analyzing problems, critically reasoning scenarios, and investigating the truth or corroboration rather than simply repeating the teacher's instruction or memorization of rigid rules, etc., as part of the core curriculum. In addition, the aforementioned skills, when examined from the viewpoint of Chinese undergraduates, according to student participants' responses (N = 19, 41., would be both applicable and helpful in the process of acquiring constructive information and knowledge from the cross-cultural communication class. Table 5 contains exemplary examples of the comments made by participants.

Table 5. Undergraduates' values of critical thinking in a cross-cultural communication course

Chinese Undergraduates' Response Excerpts from Interview Question 2
Interview Question: If critical thinking skills/abilities, such as identifying problem, analyzing, reasoning, judging, applying and comprehending, which critical thinking skills do you believe are the most beneficial and practical to be acquired from the Cross-Cultural Communication course?
S1 *I hope to learn some skills or abilities that will help me figure out how to correctly identify problems and break down big problems into smaller ones so that students can understand the content better*
S2 *Critical thinking in cross-cultural communication course, well...I want to pick up some pointers on how to spot difficulties and break them down into manageable chunks that kids can more readily digest.*
S4 *I want to learn how to accurately classify situations and dissect them so I can comprehend faster*
S9 *No more memorizing, but I hope this cross-cultural communication class teaches us how to employ information critically and creatively*
S13 *I want no more remembering lesson information, but I suppose this cross-cultural communication class shows us how to incorporate information independently and analytically*
S15 *No more cramming for tests; instead, I'm hoping that, via cross-cultural conversation, our instructor will help us learn how to critically apply what we've learned to real-world situations and inspire us to think of our own original solutions*
S18 *Forget mugging for examinations so perhaps, in this cross-cultural communication course, we'll manage to critically integrate what we've learned to real life scenarios and even come up with some original ideas of our own independently*
S23 *Never again prepping for quizzes... simply put, I'm hoping our cross-cultural communication professor will educate us how to effectively adapt everything we've encountered in the classroom to practical applications and inspire us to go outside the box in terms of our workarounds*

5. Conclusion and Discussion

The objective of this study was to identify and evaluate the critical thinking abilities of Chinese foreign college freshmen in order to include CT instruction into the cross-cultural communication coursework. Taken as a whole, the results of the current mixed-methods study provide insight into the usefulness of expanding our understanding of the lack of critical thinking skills (abilities) among Chinese international college undergraduates due to China's conventional education system or academic study habits. The study-for-test strategy has a substantial influence on the restricted or nonexistent development of critical thinking abilities among Chinese students, which conforms to the assertion from several studies that there is a lack of knowledge of the definition or idea of critical thinking skills among Asian students (Hood, 2020; Li & Ren, 2020; Jiang, 2020; Kusumastuti et al., 2019; Ghaemi & Mirsaeed, 2017). In addition, the summary of Chinese undergraduates' responses to the critical thinking deposition inventory revealed that absence of speculation is a common problem among Chinese college students, based on the CTDI's items 12: if possible, I try to avoid reading (X = 4.32); 13: decisions made by authority are always right (X = 4.75), item 17: it is interesting to solve difficult problems (X = 1.84, lower than the seldom 2-point Likert scale point). This primarily manifests in the fact that Chinese students are inadequate and inexperienced with critical thinking skills, such as attending lectures without making statements, a lack of debate, a lack of automaticity in thoughts, and inordinate confusion in interpretation, which inevitably results in the inability to upskill to a competent range of expertise and inhibits Chinese students' academic growth and the nation's continued prospects.

Moreover, the outcomes of this research indicate that Chinese undergraduates believe and anticipate that critical thinking skills as a component of instructional coursework would therefore enable them to confront core content information without excessive memorization; rather, they would really like to study and understand how to precisely and essentially identify problems and analyze issues by separating them out. Significantly, via the

inclusion of CT training in the cross-cultural communication course, Chinese international students are more likely to adopt and apply topic knowledge to real-world circumstances and to be inspired to express themselves in a more innovative and constructive manner. Overall, a need exists for specifically aimed professional development for educators over the domain of critical thinking skills that includes a theoretical base, affirmation of the fundamental elements of critical thinking, and empirical evidence that teachers can employ to better comprehend the concept of critical thinking in a broad sense and critical thinking techniques in classroom instruction for learners in particular (Onen, 2021; Masaeid, 2020; Erkens et al., 2018; Cobbinah, 2017). Last but not least, if teachers appreciate critical thinking in depth, then not only can we convey the concept clearly to our students, but we can also utilize it to offer purpose and direction to nearly everything we undertake as both educators and learners under any academic scenario.

References

Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M., Tamim, R., & Zhang, D. A. (2015). Instructional interventions affecting critical thinking skills and dispositions: A stage one meta-analysis. *Review of Educational Research*, *78*, 1102−1134. https://doi.org/10.3102/0034654308326084

Bennett, M. J. (2013). Intercultural practices: International/multicultural education. In M. J. Bennett (Ed.), *Basic concepts of intercultural communication: Paradigms, principles and practices* (2nd ed., pp. 105−136). Boston, MA: Intercultural Press.

Berwick, R., & Johnson, R. K. (1989). Needs assessment in language programming: From theory to practice. In R. K. Johnson (Ed.), *The second language curriculum* (pp. 48−62). Cambridge University Press. https://doi.org/10.1017/CBO9781139524520.006

Buchanan, R. (2016). *Wicked problems in design thinking*. Design: Critical and Primary Sources. https://doi.org/10.5040/9781474282932.0019

Chen, B. (2017). Critical Thinking and the Cultivation of Innovative talents. *China University Teaching*, *3*, 22.

Chen, L. (2017). Understanding critical thinking in Chinese sociocultural contexts: A case study in a Chinese college. *Thinking Skills and Creativity*, *24*, 140−151. https://doi.org/10.1016/j.tsc.2017.02.015

Chen, Y., & Wang, J. (2018). The people's standpoint contained in the development of socialist education with Chinese characteristics. *DEStech Transactions on Economics, Business and Management*, (icssed). https://doi.org/10.12783/dtem/icssed2018/20259

Cobbinah, A. (2017). Comparative effects of critical thinking and peer-assessment skills training on Ghanaian senior high school students' achievement in mathematics. *Ghana Journal of Education: Issues and Practice* (GJE), *4*, 77−88. https://doi.org/10.47963/gje.v4i.496

Daniel, F. J., & Fair, F. (2020). *Critical thinking and reasoning: Theory, development, instruction, and assessment*. BRILL.

Davis, W. (2021). *Commodifying teacher learning to recruit: A needs analysis of Utah's teaching as a profession curriculum*. https://doi.org/10.35542/osf.io/ufp94

Din, M. (2020). Evaluating university students' critical thinking ability as reflected in their critical reading skill: A study at bachelor level in Pakistan. *Thinking Skills and Creativity*, *35*, 100627. https://doi.org/10.1016/j.tsc.2020.100627

Doan, T. L., & Dan, T. C. (2018). An evaluation of general English course from non-English major students' learning needs analysis. *Can Tho University Journal of Science*, *54*(2), 56. https://doi.org/10.22144/ctu.jen.2018.008

Dong, Y. (2015). Competing for Critical Thinking. *People's Education*, 14−15.

Erkens, C., Schimmer, T., & Vagle, N. D. (2018). *Growing tomorrow's citizens in today's classrooms: Assessing seven critical competencies*.

Facione, P., & Gittens, C. A. (2015). *THINK critically*. Pearson.

Facione, P. A., & Facione, N. C. (2013). Critical thinking for life. *Inquiry: Critical Thinking Across the Disciplines*, *28*(1), 5−25. https://doi.org/10.5840/inquiryct20132812

Febriana, B. A., Purwoko, A. A., & Andayani, Y. (2017). *Problem-based learning in senior high school chemistry and its impact on critical thinking skills of different dispositions students*. 2nd Asian Education Symposium. https://doi.org/10.5220/0007299000800085

Ghaemi, F., & Mirsaeed, S. J. (2017). The impact of inquiry-based learning approach on critical thinking skill of EFL students. *EFL JOURNAL*, *2*(2). https://doi.org/10.21462/eflj.v2i2.38

Haber, J. (2020). *Critical thinking*. MIT Press. https://doi.org/10.7551/mitpress/12081.001.0001

Hadjianastasis, M. (2017). Learning Outcomes in Higher Education: Assumptions, Positions and the Views of Early-Career Staff in the UK System. *Studies in Higher Education*, *42*(12), 2250−2266. https://doi.org/10.1080/03075079.2016.1141402

Halpern, D. F., & Dunn, D. S. (2021). *Critical thinking: A model of intelligence for solving real-world problems*. https://doi.org/10.20944/preprints202101.0263.v1

Han, Y., Hu, M., & Li, L. (2013). Formative evaluation of the no-fee teacher education program from the students' standpoint. *Chinese Education & Society*, *46*(2−3), 100−118. https://doi.org/10.2753/CED1061-1932460207

Harland, T. (2020). Teaching to meet all students' learning needs. *University Challenge*, 49−61. https://doi.org/10.4324/9781003008859-3

Heng, X. (2018). On the cultivation of the critical thinking ability in the teaching of college English reading. *DEStech Transactions on Social Science, Education and Human Science*, (icssd). https://doi.org/10.12783/dtssehs/icssd2017/19218

Hitchcock, D. (2017). Critical thinking as an educational ideal. *On Reasoning and Argument*, 477−497. https://doi.org/10.1007/978-3-319-53562-3_30

Hood, M. (2020). *Thinking critically about critical thinking: Pedagogy and practice in the efl classroom*. INTED Proceedings. https://doi.org/10.21125/inted.2020.1975

Hutchinson, T., & Waters, A. (1987). *English for specific purposes*. Cambridge University Press. https://doi.org/10.1017/CBO9780511733031

Hwang, S., Yen, M., Lee, B., Huang, M., & Tseng, H. (2010). A critical thinking disposition scale for nurses: Short form. *Journal of Clinical Nursing*, *19*(21−22), 3171−3176. https://doi.org/10.1111/j.1365-2702.2010.03343.x

Jackson, C. M. (2021). Deploying systems thinking to create a triple-crown business school. *How to Lead Academic Departments Successfully*, 98−115. https://doi.org/10.4337/9781789907155.00017

Jiang, Y. (2020). *Study on the development of critical thinking in college English teaching in application-oriented University*. Proceedings of the 7th International Conference on Education, Language, Art and Inter-cultural Communication (ICELAIC 2020). https://doi.org/10.2991/assehr.k.201215.293

Kaeppel, K. (2021). The influence of collaborative argument mapping on college students' critical thinking about contentious arguments. *Thinking Skills and Creativity*, *40*, 100809. https://doi.org/10.1016/j.tsc.2021.100809

Kim, N. (2015). A study on effective skill of Chinese interpretative teaching. *Chinese Language Education and Research*, *21*, 133. https://doi.org/10.24285/CLER.2015.06.21.133

Kováčiková, E. (2015). Teaching English to learners with specific learning needs. *Teaching Foreign Languages to Learners with Special Educational Needs*, 29−38. https://doi.org/10.17846/SEN.2015.29-38

Kusumastuti, I., Fauziati, E., & Marmanto, S. (2019). Challenged for higher-order thinking skill implementation: Reports from EFL classroom teachers. *International Journal of Language Teaching and Education*, *3*(2), 108−117. https://doi.org/10.22437/ijolte.v3i2.7579

Lapina, A. (2018). Facilitating Coping Through Reflective Learning in Adult Education: A Review of the Reciprocal Relationship Between Coping and Learning. *Adult Learning*, *29*(4), 131−140. https://doi.org/10.1177/1045159518776126

Li, J., & Ren, Y. (2020). The cultivation of critical thinking ability in academic reading based on questionnaires and interviews. *International Journal of Emerging Technologies in Learning* (iJET), *15*(22), 104. https://doi.org/10.3991/ijet.v15i22.18197

Liu, L. (2015). A study of graduate thesis writing course for English undergraduates. *Journal of Language Teaching and Research*, *6*(4), 836. https://doi.org/10.17507/jltr.0604.17

Lu, Y. (2018). *Out of multiple-choice-Test-Oriented education—to production-oriented approach*. Proceedings of the Asia-Pacific Social Science and Modern Education Conference (SSME 2018).

https://doi.org/10.2991/ssme-18.2018.17

Mahajan, M., & Singh, M. K. S. (2017). Importance and Benefits of Learning Outcomes. *IOSR Journal of Humanities and Social Science* (IOSR-JHSS), *22*(3), 65−67. https://doi.org/10.9790/0837-2203056567

Marabini, A. (2022). Critique of critical thinking: Bildung and the value of critical thinking. *Critical Thinking and Epistemic Injustice*, 135−165. https://doi.org/10.1007/978-3-030-95714-8_5

Martin, R. (2016). *Design thinking—How thinking like a designer can create sustainable advantage*. Design: Critical and Primary Sources. https://doi.org/10.5040/9781474282932.0029

Masaeid, T. F. (2020). The effectiveness of the differentiation teaching strategy for developing critical thinking skills among a sample of college students. *Journal of Advanced Research in Dynamical and Control Systems*, *12*(SP8), 795−808. https://doi.org/10.5373/JARDCS/V12SP8/20202583

McMullin, S. L. (2018). *The correlation between information literacy and critical thinking of college students: An exploratory study*.

Nasution, N. (2019). Effect of case study and concept map on critical thinking skills and dispositions in Indonesian college students. *The New Educational Review*, *55*(1), 64−76. https://doi.org/10.15804/tner.2019.55.1.05

Nauman, S. (2017). Lack of critical thinking skills leading to research crisis in developing countries: A case of Pakistan. *Learned Publishing*, *30*(3), 233−236. https://doi.org/10.1002/leap.1091

Onen, D. (2021). Cultivating critical thinking amongst university graduate students. *Research Anthology on Developing Critical Thinking Skills in Students*, 1104−1119. https://doi.org/10.4018/978-1-7998-3022-1.ch057

Otilia, S. M. (2015). Needs analysis in English for specific purposes. *Annals of the Constantin Brâncuşi, University of Târgu Jiu, Economy Series*, *1*(2), 54−55. Retrieved from https://ideas.repec.org/a/cbu/jrnlec/y2015v1iip54.55.html

Paul, R., & Elder, L. (2015). *Critical thinking: Tools for taking charge of your professional and personal life*. Pearson Education. https://asset-pdf.scinapse.io/prod/72277116/72277116.pdf

Pu, S. (2021). Critical thinking as an educational ideal. *Critical Thinking in Academic Writing*, 11−22. https://doi.org/10.4324/9781003189541-2

Raikou, N., Karalis, T., & Ravanis, K. (2017). Implementing an Innovative Method to Develop Critical Thinking Skills in Student Teachers. *Acta Didactica Napocensia*, *10*(2), 21−30. https://doi.org/10.24193/adn.10.2.2

Raphals, L. (2022). Gendered skill: Chinese and Greek skill-knowledge analogies from archery and weaving. *Skill in Ancient Ethics*. https://doi.org/10.5040/9781350104358.ch-016

Rashidi, N., & Kehtarfard, R. (2014). A needs analysis approach to the evaluation of Iranian third-grade high school English textbook. *SAGE Open*, *4*(3). https://doi.org/10.1177/2158244014551709

Robinson, S., & Knight, V. (2019). *Handbook of research on critical thinking and teacher education pedagogy*. IGI Global. https://doi.org/10.4018/978-1-5225-7829-1

Rose, P. V., & Sookraj, R. (2015). Needs analysis: undergraduates' evaluation of a university-wide English language course. *Caribbean Educational Research Journal*, *3*(1), 62−75. Retrieved from https://www.cavehill.uwi.edu/fhe/education/publications/past-issues/volume-3-number-1-april2015/articles/article-p-rose-and-r-sookraj.aspx

Ruminski, H., & Hanks, W. (2020). Critical thinking. *Media Education Assessment Handbook*, 143−164. https://doi.org/10.4324/9781003064169-7

Sanacore, J. (2021). Reflections on critical thinking. *Teaching Critical Thinking in the Context of Political Rhetoric*, 84−100. https://doi.org/10.4324/9781003212300-7

Schuler, P., Freudenberg, R., Roehming, M., & Herper, H. (2019). *Needs analysis for ICT in teaching and learning*. INTED2019 Proceedings. https://doi.org/10.21125/inted.2019.2158

Su, N. (2020). A research on the cultivation of critical thinking ability in college English discourse reading. *DEStech Transactions on Social Science, Education and Human Science*, (ssme). https://doi.org/10.12783/dtssehs/ssme2019/34810

Sun, Q. (2017). NEU students' critical thinking ability cultivation based on problematic instruction with

academic writing emphasis. *US-China Foreign Language*, *15*(7). https://doi.org/10.17265/1539-8080/2017.07.006

Van, Z., Bays, A. C. L., & Gilchrist, C. (2013). Assessing teaching critical thinking with validated critical thinking inventories: The learning critical thinking inventory (LCTI) and the teaching critical thinking inventory (TCTI). *Inquiry: Critical Thinking Across the Disciplines*, *28*(3), 40−50. https://doi.org/10.5840/inquiryct201328318

Wade, W. P. (2016). Critical thinking through debate. *Using Debate in the Classroom*, 95−106. https://doi.org/10.4324/9781315707808-9

Wang, H. (2016). Dangling between the traditional and the reformist: Reality shocks for student teachers amid the tide of educational reform in a test-oriented culture. *Chinese Education Models in a Global Age*, 149−162. https://doi.org/10.1007/978-981-10-0330-1_11

Wang, J. (2019). A study of college English majors' critical thinking competence in using internet resources. *Proceedings of the National Aviation University*, *78*(1). https://doi.org/10.18372/2306-1472.1.13660

Watson, G., & Glaser, M. E. (2010). *Watson-Glaser TM II critical thinking appraisal*. USA: Pearson.

Wilberding, E. (2021). Critical thinking. *Socratic Methods in the Classroom*, 5−18. https://doi.org/10.4324/9781003238089-2

Yang, F., & Chen, C. (2017). Examining trends in Chinese secondary education: From test-oriented to comprehensive academic and personal student development. *US-China Education Review*, *7*(10). https://doi.org/10.17265/2161-623x/2017.10.002

Zhou, X. (2016). Cramming for college. *Youth Culture in Chinese Language Film*, 90−114. https://doi.org/10.4324/978131559124-5

Zhu, X. C. (2016). On the Cultivation of Thinking Characteristics and Teaching Reform. *Curriculum, Teaching Material and Method*, *1*, 26−27. http://DOI/10.5539/jel.v9n6p84

Zhu, Y. (2020). Transnationalizing lifelong learning: Taking the standpoint of Chinese immigrant mothers. *Globalisation, Societies and Education*, *18*(4), 406−419. https://doi.org/10.1080/14767724.2020.1762168

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