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A Survey of English Majors' Attitudes towards Critical Thinking

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Based on the discussion of critical thinking and related studies, this study conducted a survey of 104 senior English majors in a university by using a questionnaire and applied Excel to analyze the data, and explored English majors' attitudes toward critical thinking. The study found that most English majors do not have a clear concept of critical thinking, but they acknowledge the importance of critical thinking in learning and hold high expectations to be trained in critical thinking. The study indicated that English major students' attitudes need to be taken into due consideration in the development of critical thinking.

Introduction

Critical thinking (CT) has become a buzzword which is of great significance in modern education. The so-called "spoon-feeding" instruction and rote training have been outdated instead heuristic teaching, so the students rather than teachers are situated in the center in the process of learning. In the context of new curriculum, students should dare to put forward critical and developmental opinions, and practical ability and innovative spirit should be developed among them. The last few decades have seen great changes in the approaches of education. As a certain level of proficiency in English becomes essential to become successful, it is crucial to equip students with certain abilities such as reasoning and analyzing, which is absolutely critical to acquire English as a foreign language. It is as a result of thinking critically that the students have the ability to apply their previous knowledge, evaluating and assessing their own thinking and changing their behavior.[1]

Language learning and critical thinking are intimately integrated. In fact, language learners who have developed critical thinking skills are capable of doing activities of which other students may not be capable. Mahyuddin et al[2] argued that language learners with critical thinking abilities are capable of using their thinking skills and of understanding language or its content, and finally become intellectually, physically, emotionally, and spiritually well-balanced. As

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1. Stephen P. Norris, "Synthesis of Research on Critical Thinking," *Educational Leadership* 43, no. 8 (1985): 40-45.

2. Rahil Mahyuddin, Zaidatol Akmaliah Lope Pihie and Mohd Majid Konting, "The Incorporation of Thinking Skills in the School Curriculum," *Kajian Malaysia* 22, no. 2 (2004): 23-33.

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Brown argued, enhancing CT skills among language-learners should be the purpose of an ideal language program.[3]

As Paul Stapleton[4] claimed, the lack of CT skills appears to span in education around the world. Many schools have made documents that outline the educational aims in schools and regard CT as one of their goals, perhaps because of the pervasive concern over the deficient CT of their students. For example, in the UK National Curriculum, under a section entitled "Values, Aims and Purposes," it states, "[b]y providing rich and varied contexts for pupils to acquire, develop and apply a broad range of knowledge, the curriculum should enable pupils to think creatively and critically, to solve problems and to make a difference for the better."[5] However, in China, the research still mainly focuses on the measurement techniques of critical thinking, the investigation of critical thinking disposition, the application of critical thinking in teaching, and the cultivation of such abilities.[6] There are few studies investigating students' attitudes towards CT.

Whereas engendering CT in students is considered necessary, the actual understanding of the term remains unclear. At present, few studies have been done in the area of students' attitudes toward CT. To shed more light on this issue, with the purpose of providing recommendations and implications on the development of CT, this study is conducted to examine English majors' attitudes towards CT and its place in English language learning. This study consists of five parts. The first section introduces the current situation of CT. The second section reviews the definition of CT and the relevant studies abroad and in China. In the third part, the methodology of this study is introduced. The fourth illustrates the result and the discussion of the data from three aspects. The paper ends with the findings, implications and limitations of the study.

3. H. Douglas Brown, "Some Practical Thoughts about Students- Sensitive Critical Pedagogy," *The Language Teacher* 28, no. 7 (2004): 23-27.

4. Paul Stapleton, "A Survey of Attitudes towards Critical Thinking among Hong Kong Secondary School Teachers: Implications for Policy Change," *Thinking Skills and Creativity* 6, no. 1 (2010): 14-23.

5. National Curriculum, *Values, Aims, and Purpose* (UKESSAYS, 1990).

6. 张文兰 (Zhang, Wenlan) and 刘斌 (Liu Bin,) "信息技术与批判性思维研究的现状及启" (The Present Situation and Enlightenment of Information Technology and Critical Thinking Research,)《电化教育研究》(E-education Research) 1, (2010): 25-30.

Literature Review

Defining Critical Thinking

CT has been elaborate in various ways and many definitions of it have been born depending on the different disciplines. Halonen[7] believed that, "critical thinking scholarship is in a mystified state and no single definition of critical thinking is widely accepted." Halpern[8] argued that CT is the use of those cognitive skills or strategies that increase the probability of a desirable outcome, while Facione[9] said that CT is a non-linear, recursive process in which a person forms a judgement about what to believe or what to do in a given context. As Ivie[10] put it, CT is the ability that enables individuals to establish clear and logical connection between beginning premise, relevant facts, and warranted conclusions. According to Astleitner,[11] critical thinking is a higher-order thinking skill which includes evaluating arguments, and is a purposeful, self-regulatory judgement which ends in interpretation, analysis, evaluation, and inference. Browne and Keeley[12] define CT as evaluating arguments based on logical principles.

Although there is no widely acknowledged and acceptable theoretical definition for CT, all these definitions have a great deal of common ground that CT has actually influenced almost every discipline and career because it is associated with abilities including problem resolving and decision-making.[13] Besides, many educators who are interested in CT believed that CT involves two aspects: skills and dispositions; skills (abilities) are the cognitive aspect and

7. Jane S. Halonen, "Demystifying Critical Thinking," *Teaching of Psychology* 22, no. 1 (1995): 75-81.

8. Diane F. Halpern, "Teaching Critical Thinking for Transfer across Domains: Dispositions, Skills, Structure, Training, and Metacognitive Monitoring," *American Psychologist* 53, no. 4 (1998): 449-455.

9. Noreen C. Facione and Peter A. Facione, "Externalizing the critical thinking in knowledge development and clinical judgment," *Nursing Outlook* 44, no. 3 (1996): 129-136.

10. Stanley D. Ivie, "Metaphor: A Model for Teaching Critical Thinking," *Contemporary Education* 72, no. 1 (2001): 18-23.

11. Behdokht Mall-Amiri and Zahra Ahmadi, "The Relationship between EFL Learners' Critical Thinking and Metacognitive Strategie," *International Journal of Language Learning and Applied Linguistics World (IJLLAW)* 5, no. 1 (2014): 488-505.

12. M. Neil Browne and Stuart M. Keeley, *Asking the Right Questions: A Guide to Critical Thinking* (New Jersey: Prentice Hall, 2010).

13. Hamed Barjesteh and Reza Vaseghi, "Critical Thinking: A Reading Strategy in Developing English Reading Comprehension Perdormance," *Sheikhbahaee EFL Journal* 1, no. 2 (2012): 21-34.

dispositions (attitudes) are the affective aspect of CT.[14] Many educators are interested in the second aspect of critical thinking, so a broader perspective has been sought. As Perkins & Ritchhart[15] argued, "what makes a good thinker is now a question that must be answered as much in terms of people's attitudes, motivations, commitments, and habits of mind as in terms of their cognitive abilities." Siegel[16] has defined CT in the way that involves these two components: "the ability to assess reasons properly and the willingness, desire and disposition to base one's action and beliefs on reasons." He also emphasizes the disposition of critical thinkers who seek evidence for their beliefs and views as critical thinkers as those whom have the disposition to properly assess the force of reason, conceiving that critical thinking requires both the mastery of epistemic criteria that reason must meet in order to warrant claims, and the tendency or attitude to value and seek good reasoning. Supporting the importance of disposition, Norris[17] carried empirical research to test if disposition of critical thinking exists. Later according to the definition of CT- "reasonable reflective thinking that focuses on deciding what to believe and do,"[18] an intentional and motivational aspect of CT is underlined, which has been termed by other scholars as "critical thinking disposition."[19] In summary, critical thinking has two aspects. The first is the ability to analyze the information systematically so that the matter could be understood comprehensively and critically and the problems would be solved in a better way. The second is the attitude that desires to experience, to reflect and to seek the reasoning for the belief and action.

14. Abdulmohsen S. Aloqaili, "The Relationship between Reading Comprehension and Critical Thinking: A Theoretical Study," *Journal of King Saud University-Languages and Translation,* no. 24 (2011): 35-41.

15. David Perkins and Ron Ritchhart, "When is Good Thinking?" In *Motivation, Emotion, and Cognition: Integrative Perspectives On Intellectual Functioning and Development (*eds.), David Yun Dai and Robert J. Sternberg (NJ: Erlbaum, 2004), 351-379.

16. Harvey Siegel, *Educating Reason: Rationality, Critical Thinking and Education* (New York: Routledge and Metheun, 1988), 23.

17. Stephen P. Norris, "Bachelors, Buckyballs and Ganders: Seeking Analogues for Definitions of 'Critical Thinker,'" in *Proceedings of the Forty-Eighth Annual Meeting of the Philosophy of Educatiton Society* (ed.), H. A. Alexxander (Urbana, IL: Philosophy of Education Society, 1992), 67-71.

18. Robert H. Ennis, "A Taxonomy of Critical Thinking Dispositions and Abilities," in *Teaching Thinking Skills: Theory and Practice (*eds.), J. B. Baron and R. J. Sternberg (New York, US: W H Freeman/Times Books/Henry Holt & Co., 1987), 9-26.

19. Diane F. Halpern, "Teaching Critical Thinking for Transfer across Domains: Dispositions, Skills, Structure, Training, and Metacognitive Monitoring," *American Psychologist* 53, no. 4 (1998): 449-455.

Related Studies on Critical Thinking

Related Studies Abroad

Considering the importance of CT in education, Shirkhani and Fahim[20] stated that learners who have developed CT skills were successful in accomplishing the activities that the other students may not be capable. Fisher[21] believes that students do not have enough thinking skills to handle the problems they might face in education or in their daily life.

Related literature revealed that the number of studies conducted to measure the attitudes of CT has increased in recent years. Stapleton[22] did a survey of attitudes toward CT among 72 Hong Kong secondary school teachers and concluded that while the teachers had some understanding of CT, it was narrow, and a precise understanding was lacking. Moreover, the participating teachers expressed strong support for the inclusion of CT in the curriculum, while showing a tendency for training in terms of how to instruct CT. Fatemeh and Abdorreza[23] conducted a survey of EFL teachers' attitudes towards critical thinking instruction, and appealed to teachers to realize the importance of teaching learners how to increase their ability to think critically. According to Kablin,[24] learners are in need of textbooks that evoke CT and teachers need to be trained to change attitudes toward CT instruction. In order to help learners to foster their CT and decision-making ability, it is necessary for teachers to educate themselves and be aware of their enormous responsibility in the classroom. Mahmoodi-Shahrebabaki and Yaghoubi-Notash[25] studied teachers' and learners' attitudes towards critical thinking skills in the Iranian EFL context. Both teachers and students show positive attitudes towards the new syllabus including critical

20. Servat Shirkhani and Mansour Fahim, "Enhancing Critical Thinking in Foreign Language Learners," *Procedia* 29 (2011): 111-115.

21. Ali Malmir and Samad Shoorcheh, "An Investigation of the Impact of Teaching Critical Thinking on the Iranian EFL Learners' Speaking Skill," *Journal of Language Teaching and Research* 3, no. 4 (2012): 608-617.

22. Paul Stapleton, *A Survey of Attitudes towards Critical Thinking among Hong Kong Secondary School Teachers: Implications for Policy Change*, 14-23.

23. Fatemeh Asgharheidari and Abdorreza Tahriri, "A Survey of EFL Teacher's Attitude towards Critical Thinking Instruction," *Journal of Language Teaching and Research,* no. 2 (2015): 388-396.

24. Muhammad Kamarul Kabilan, "Creative and Critical Thinking in Language Classroom," *The Internet TESL Journal* 6, no. 6 (2000).

25. Msoud Mahmoodi-Shahrebabaki and Massoud Yaghoubi-Notash, "Teachers' and Learners' Attitudes towards Critical Thinking Skills: A Case Study in the Iranian EFL Context," *Journal of Applied Linguistics and Language Research* 2, no. 2 (2015): 93-106.

thinking skills. Yuya Akatsuka[26] did a study that is about students' awareness of CT attitudes and English speaking skills. He found the higher-order thinking skills (HOTS) can help improve the awareness of CT attitudes and acquire English speaking skills. Peng Lu[27] proposed "situational attitude and universal attitude of critical thinking might be considered as a new model to access critical thinking attitude." His study contributed to the development of CT in modern education.

These studies provide good example of research questions, research methods and research frameworks for this study, which help build up the basis of this study. On the basis of the foreign studies about the attitudes towards CT, it is necessary to conduct the survey to explore whether the differences exist when the characteristics of Chinese students are considered.

Related Studies within the Country

The studies about CT in China are not as abundant as those abroad, especially studies about attitudes towards CT. And most of the studies are mainly about the cultivation of the ability of CT and the disposition of CT.

As Zhao Haiping and Yu Chunni[28] said, the cognition of CT and the disposition of CT are two independent aspects that should be highlighted in a critical thinking curriculum. Therefore, CT education should be strengthened by emphasizing the cultivation of CT ability and skills rather than only teach some basic knowledge. Huang Zhaoyang[29] and Gao Zhiyuan[30] concluded that students' disposition of CT is not very clear, so he suggested that characteristic cognition and emotion cultivation should be emphasized when the practice ability was taught. Li Xueshu[31] has argued that in order to cultivate students' critical

26. Yuya Akatsuka, "Awareness of Critical Thinking Attitudes and English Language Skills: The Effects of Questions Involving Higher-Order Thinking," *Journal of Pan-Pacific Association of Applied Linguistics* 23, no. 2 (2019): 59-84.

27. Peng Lu, *Critical Thinking Attitude: An Exploration of Critical Thinking Construct*, PhD Thesis (Texas Tech University, 2019).

28.赵海平 (Zhao, Haiping) and 于春妮 (Yu, Chunni,) "护理本科生批判性思维认知技能和态度倾向性的相关性调查" (A Survey of the Correlation between Critical Thinking Skills and Attitudes of College Nursing Undergraduates,)《护理研究》(Nursing Research) 5 (2007): 1158-1162.

29. 黄朝阳 (Huang, Zhaoyang,) "加强批判性思维教育 培养创新型人才" (Strengthen Critical Thinking Education and Cultivate Innovative Talents,)《教育研究》(Education Research) 5, (2010): 69-74.

30. 高志远 (Gao, Zhiyuan,) "应用型本科大学生批判性思维倾向现状调查" (A Survey of the Current Situation of Critical Thinking Disposition of Applied Undergraduates,)《高教探索》(*Higher Education Exploration*) 2, (2013): 129-133.

31. 李学书 (Li, Xueshu,) "批判性思维培养的思考" (Reflections on the Cultivation of Critical Thinking,)《教育学术月刊》(Education Research Monthly) 1, (2011): 13-15.

thinking, teachers should change teaching concepts and pay attention to their efforts to inspire critical thinking, focusing on psychological quality, and the development of critical thinking habits. With the rapid development of informational technology, its relationship with critical thinking is getting closer and closer. As Zhang Wenlan and Liu Bin[32] claimed, how to make informational technology promote the development of advanced thinking has become a central point of pre-information educational research. Research subjects need to pay more attention to the study on information technology and critical thinking.

Some studies in China are mainly about the development of CT skills. When it comes to CT teaching, most studies tried to illustrate the methods from two main aspects: students' requirement or ability, and the demands for teachers' performance. Very few studies focused on students' attitudes towards CT, though it is a significant foundation for CT development. Therefore, it is necessary to investigate the students' attitudes and their recognition towards CT so as to find more effective and practical methods to improve students' critical thinking.

Methodology

Research Questions

The present study investigates English majors' attitudes towards CT in the EFL context, endeavoring to explore the situation of CT development of college students. This study is to answer the following questions:

1) What are English majors' general attitudes towards CT?
2) Is there any difference of attitudes towards CT between normal English majors (who study English teaching to be pre-service English teachers) and non-normal English majors (who study the subject about business and translation in English)?
3) Is there any difference of attitude towards CT between art students and science students?

Participants

As for the students who take English as their major in China, they mainly have two kinds of job prospects; they can choose to accept the professional training of being an English teacher or choose to learn the knowledge of business and translation. These two groups will have totally different subjects. In this study, 104 senior English majors (9 males and 95 females) from Ludong

32. Zhang and Bin, "信息技术与批判性思维研究的现状及启示," 25-30.

University in China were selected randomly to explore their attitudes toward CT. They have learned integrated English professionally for two years. After that, they choose different kinds of training of English which involves education, business and translation. The students who choose to study English teaching are normal English majors that are undergraduate pre-service teachers, and the others are non-normal English majors who choose to study the subject about business and translation in English. Among them, there are 67 normal English majors, 37 non-normal English majors. Concerning the different subjects chosen in their high schools, 82 are art students and 22 are science students. They all have studied English for 13 years (since third grade in primary school), and they all have passed Test for English Majors Grade 4, so they are almost all on the same level of proficiency in English.

Instrument

The survey instrument consisted of an eight-item Likert-style questionnaire adapted from a survey of EFL teachers' attitudes towards CT,[33] the reliability of which was 0.721. This index was higher than the minimum required (0.70), suggesting that the reliability of this questionnaire was acceptable. The instrument was the questionnaire with close-ended items, which are described by a five-point scale ranging from 'strongly disagree' to 'strongly agree.' The scores of item 4 to item 6 are reversed. The questionnaires explored (1) the participants' attitudes on the meaning of CT (Item 1 is related to this aspect); (2) CT's position in their learning process, especially in foreign language learning (Item 2 to item 7 show the importance of CT); and (3) the perceived need for training to enhance learning techniques in CT (item 8).

Data Collection and Data Analysis

The main goal of this study was to explore English majors' attitudes towards CT. The main instrument used to collect the relevant data was attitude questionnaires which were distributed among 104 English majors including normal English majors and business English majors. Before administering the questionnaire to the main sample, the reliability that was the internal consistency within the questionnaire items was estimated. The process of the data analysis is as follows:

After ensuring the reliability of the questionnaires, they were administrated to the participants. Their anonymity was guaranteed and they were asked to complete the eight items and choose one of the options based on the five-point

33. Asgharheidari and Tahriri, *A Survey of EFL Teacher's Attitude towards Critical Thinking Instruction*, 388-396.

Likert scale (1=strongly disagree, 2=disagree, 3=not sure, 4=agree, 5=strong agree). Then the data were analyzed and reported including mean, standard derivation, and the detailed analysis of each item which includes the frequency and percentage of the five levels of agreement. The findings of this attitude questionnaire were analyzed to determine the participants' attitudes towards CT instruction. The Excel software was used to provide a descriptive analysis of the closed items of the questionnaire. Items that produced mean scores most distant from the mid-point, 3, indicate the strongest viewpoints while those closest to 3 exhibit the weakest. The standard deviation reflecting the degree of dispersion was calculated to ensure the reliability of the experimental results. The process of analyzing the data is put in certain sequence: firstly the overall analysis, secondly the differences of attitudes towards CT between arts students and science students, and thirdly the differences of attitudes towards CT between normal English majors and non-normal English majors.

Results and Discussion

General Attitudes

As the results show, English majors do not quite demonstrate that they have a clear meaning of CT, while they do realize the importance of CT and have a strong desire to improve it with the teachers' training. As Table 1 shows, the total mean is 3.68, which means that in general students have positive attitudes towards CT. The positive attitudes can be analyzed from three aspects: firstly, the English majors' attitudes towards the meaning of CT, secondly CT's position in their learning process, especially in foreign language learning, and thirdly the perceived need for training to enhance learning techniques in CT. (What the items refer to can be seen in the Appendix.)

Table 1. *Mean and Standard Deviations of Questionnaire Items*

Items	M	SD
1	3.14	0.67433
2	3.85	0.65016
3	3.57	0.84491
4	2.25	0.77271
5	4.27	0.75338
6	4.13	0.81321
7	4.12	0.74139
8	4.13	0.88885
Total	3.68	0.68253

Source: Paul Stapleton (2011.)[34]

34. Stapleton, 14-23.

Firstly, students are actually not sure that they have a clear idea of the meaning of critical thinking. They may just know the incomplete idea from the teachers, but did not learn any concrete and specific definition of CT from their textbook. As they do not know clearly what CT is and are therefore deficient in CT, more training and teachers' instruction are needed so as to lead the way to understand and improve CT. As Table 1 shows, the mean of item 1 is 3.14, which shows that English majors do not demonstrate their understanding of a clear definition of CT—this was equal to 71.2% (N[35]=74) of the total participants. Only 28.9% (N=30) believed that they know the meaning of CT. Their conception may be incomplete and narrow in many cases, which is similar to the statement in the interview conducted by Stapleton.[36] Basically, English majors do not have a specific definition of CT (Table 2).

Table 2. *Item 1: I Have a Clear Idea of what the Term 'Critical Thinking' Means*

Level of agreement	Frequency	Percentage
Strongly disagree	0	0
Disagree	16	15.4
Not sure	58	55.8
Agree	29	27.9
Strongly agree	1	1
Total	104	100

Source: Fatemeh Asgharheidari (2015.)[37]

Secondly, learning CT is really important for English major students. Teachers did conductsome CT exercises into class, but perhaps teachers and students have all realized the important position of CT in the process of learning. The mean of item 2, item 3, item 6 and item 7 is 3.85, 3.57, 4.13 and 4.12, which shows that they agree with the ideas that CT is an important part of study. Except that, from another point of view, for item 2, 77.9% of the participants (N=81) show agreement to the importance of CT in learning. Yet, 3.8% of them (N=4) disagree with the item 2 and 18.3% of the students (N=19) cannot make sure whether CT skills are important or not. For item 7, there are 85.6% students (N=89) whom agree that CT is especially important in foreign language learning. Simply 4 of them (3.8%) disagree with the special function of CT in foreign language learning, meaning the majority of English majors realize the importance of CT and its significant position in foreign language learning. The minority of students in the sample (N=15/P=14.4%) need to be inspired to show more initiative to know the benefit and function of CT so as to realize its importance in the process of learning. In addition to item 3, 62.5% of the total responses (N=65) shows the

35. N=Numbers. It refers to the situation of frequency.

36. Stapleton, 14-23.

37. Asgharheidari and Tahriri, 388-396.

agreement to the idea that teachers build CT exercises into most of their lessons, however 12.5% of students (N=13) disagree with this idea. For item 6, 86.5% (N=90) students disagree that it was not the job of teacher to teach CT in the classroom, and only 4 of them (3.8%) agree with this idea. The data indicate that the majority of respondents have learned some knowledge of CT in most of their lessons and approve of the crucial role of the teacher in the courses of teaching CT. Since the majority of students agree that CT is significant, more exercises and explanations of CT should be designed into the classroom, and teachers need to utilize appropriate learning materials and alternative methods that are appropriate to teach critical thinking skills. Steps should also be taken towards implementing the concrete measures so as to give CT a central role in the English curriculum.

From the above data, it is easy to find that English majors in general are not good at critical thinking and it is necessary to increase the role of critical thinking into the curriculum. They may not have learned the relevant knowledge about CT and do not have the confidence when it comes to that, but they find it important in their life and are quite willing to know more about CT. As Table 1 shows, the mean of the item 4 is 2.25 which shows that the students tend to agree with this idea. In terms of the frequency and percent, 71.1% of the students (N=74) agree that Chinese students in general are not good at CT. Only 6.8% (N=7) of the students disagree with this idea. The mean of item 5 is 4.27, which shows that they disagree with the idea that it is not necessary to increase CT into curriculum. Alternatively, 90.4% of the students reported that they felt that it is necessary to increase the role of CT into the curriculum. Only 2.9% of the students reported disagreement with that sentiment, which indicates that the majority of students are aware of their deficiency in CT and desire to learn relevant knowledge of CT in their curriculum. It also means that the English learning curriculum should be designed with the purpose to improve students' CT. As Stapleton[38] argued, regarding the curriculum they should be regulated and revised with the aims to explicitly illustrate the types and the ways to improve CT. CT should be given more focus than ever before after the effectual curriculum is implemented. Overall, English majors in general are not good at CT, but they become conscious of the importance of CT, which urges them to turn to teachers and a specialized curriculum (Table 3).

38. Stapleton, 14-23.

Table 3. *Frequency and Percentage of Attitudes towards CT*

Level of agreement	Item 2		Item 3		Item 4		Item 5		Item 6		Item 7	
	F.[39]	P.[40]	F.	P.	F.	P.	F.	P.	F.	P.	F.	P.
Strongly disagree	0	0	1	1	1	1	42	40.4	34	32.7	0	0
Disagree	4	3.8	12	11.5	6	5.8	52	50	56	53.8	4	3.8
Not sure	19	18.3	26	0.25	23	22.1	7	6.7	10	9.6	11	10.6
Agree	70	67.3	58	55.8	62	59.6	2	1.9	2	1.9	58	55.8
Strongly agree	11	10.6	7	6.7	12	11.5	1	1	2	1.9	31	29.8

Source: Fatemeh Asgharheidari (2015.)[41]

Thirdly, English majors need more training from teachers about how to develop critical thinking skills. They don't have the ability to improve the CT skills by themselves as they do not know clearly what CT means. They cannot find a better way to improve CT effectively, so the teachers' assistance and guidance is important for them to enhance the ability to learn CT. As Table 4 shows, the students agree that they need more training from teachers (M=4.13). 84.6% students (N=87) agree that they need more training from teachers about how to teach CT. Simply 5.7% students (N=6) reported that they do not need training in CT. It indicates that the majority of students are eager for more training and the help of their teachers to learn how to improve their CT skills. Though students are not completely sure of the meaning of CT, they expressed unequivocal support for CT training in the curriculum and the strong desire for more training from teachers, which indicated that the specific direction on how to improve CT must be designed. As the key role of teachers, it is necessary for teachers to educate themselves ideally so as to help learners to foster their own CT and decision making ability. Overall, students expect their teachers to help them know more about CT and thus need more training to improve CT as they are not skilled in this area.

Table 4. *Item 8: I Need More Training about how to Teach Critical Thinking Skills from Teachers*

Level of agreement	Frequency	Percentage
Strongly disagree	2	1.9
Disagree	4	3.8
Not sure	11	10.6
Agree	49	47.1
Strongly agree	38	36.5
Total	104	100

Source: Fatemeh Asgharheidari (2015.)[42]

39. F.=Frequency.
40. P.=Percentage.
41. Asgharheidari and Tahriri, 388-396.

In general, these results are similar to one in the survey of EFL teachers' attitudes towards critical thinking instruction.[43] They all agreed that they are not good at CT in spite of the fact that CT is important for them. Maybe they realized that CT is making an enormous difference to learning and teaching, though they may have not accepted the training of CT. However, they have the different attitudes to item 1 and item 6. As for item 1, 82% of teachers thought they have a clear definition of what CT is, while 71.2% of students do not have a clear definition of CT. Maybe it is teachers' more abundant experience in higher education, which makes teachers know more about CT. While 90.4% of students showed their disagreement on item 6, 93.3% of teachers agreed that it is not the job of the teacher to teach critical thinking in the classroom. The one possible reason is that the teachers do not quite know how to teach critical thinking while the students do not know how to develop critical thinking, except for to turn to their teachers. It is also possible that teachers believe that handling the real problems outside the classroom is the better way to improve CT.

In conclusion, most English majors do not really understand what CT is, however, they consider it important that it should be taught by teachers and they had a strong desire for more training on how to develop CT. They think it is necessary to integrate CT into the curriculum, especially in foreign language learning.

Differences in the Attitudes towards Critical Thinking between Arts Students and Science Students

As the results show, in general, the differences in the attitudes of CT are extremely small between art students and science students, but there are some differences existing in some aspects.

The vertical analysis is conducted to show the differences between art students and science students. In general, the science students (M=3.76) have more positive attitudes towards CT than art students (M=3.66). It is perhaps because they have been exposed to different exercises and requirements of different subjects in their process of study at high school. It is also possible that their different thinking patterns can also affect their attitude towards CT. As for the means of art students, 4.22 (item 5) is the highest score and 2.18 (item 4) is the lowest score. Compared to the art students, the science students have the highest score 4.45 (item 5) and the lowest score 2.50 (item 4). This means that the art students and the science have almost the same attitude towards item 4 and item 5. They all agree that Chinese students are in general not good at critical thinking and it is necessary to increase the role of critical thinking into the curriculum.

42. Ibid.
43. Ibid.

Since the above paragraph shows the vertical analysis of attitudes towards CT, this paragraph introduces the horizontal analysis. By comparing each item in terms of the three dimensions, some differences are found in certain items. Firstly, in respect of the meaning of CT, art students are clearer about CT than those science students. As Table 5 shows, art students show more agreement on their understanding of CT (M=3.17) compared to the mean of science students (M=3.05). In their courses, the teachers may tend to lead them to analyze historical and political events so they know CT more familiarly. Secondly, as for items that show the importance of CT, art students and science students have different attitudes; the science students have more enthusiastic support in their feelings regarding the importance of CT. Regarding the role of CT as an important part of study, science students have a clearer awareness of the importance of CT. As Table 5 shows, the science students show the stronger agreement on the importance of CT for students in learning (M=3.95) compared the mean of art students (M=3.82). Except that, with regard to the proficiency of CT, art students show more negative attitudes than science students. As Table 5 shows, compared the mean of science students (M=2.50), art students expressed more agreement on the idea (M=2.18) that Chinese students in general are not good at CT. As well, concerning the necessity to emphasize the role of CT in the curriculum, the science students revealed stronger viewpoints. As Table 5 shows, the science students show the stronger disagreement over the idea (M=4.45) that it is not necessary to increase the role of CT into the curriculum when it is compared to the mean of art students (M=4.22). All in all, the science students have clearer and stronger consciousness to the importance of CT. As the feature of their course, they are lacking the knowledge of CT while it is important in language learning. Hence they are aware of the urgent need to learn CT. Thirdly, in respect to the need of training about how to learn CT skills, the science students expressed more agreement (M=4.27) that they need more training from teachers to teach them CT skills when it is compared to the mean of art students (M=4.09). As they realize the crucial role of CT, they require more training of CT from teachers so as to remedy their deficiency in CT.

All in all, the art students are surer of the definition of CT but as for the importance of CT, it has a higher position in the science students' point of view. The science students express a stronger desire to get more training for how to improve CT skills. In general, they all show a positive attitude towards CT.

Table 5. *Attitudes towards CT of Arts Students and Science Students*

Level of agreement	Arts students		Science students		Total	
	M	**SD**	**M**	**SD**	**M**	**SD**
1	3.17	0.68141	3.05	0.653	3.14	0.67433
2	3.82	0.68724	3.95	0.48573	3.85	0.65016
3	3.56	0.84762	3.55	0.73855	3.57	0.84491
4	2.18	0.75569	2.50	0.80178	2.25	0.77271
5	4.22	0.75357	4.45	0.5958	4.27	0.75338
6	4.15	0.78606	4.09	0.75018	4.13	0.81321
7	4.10	0.74717	4.18	0.73266	4.12	0.74139
8	4.09	0.93229	4.27	0.7025	4.13	0.88885
Total	3.66	0.78385	3.76	0.68253	3.68	0.76737

Source: Paul Stapleton (2011.)[44]

Differences in the Attitudes towards Critical Thinking between Normal English Majors and Non-Normal English Majors

There exist some differences between normal English majors and non-normal English majors. The main reasons may be attributed to their different curricula and professional goals. For non-normal English majors, the ability of negotiating and operating international trade affairs is emphasized. In the process of the internship, non-normal English majors realize it is crucial for them to have the ability to handle problems flexibly by using English properly. Therefore, they pay more attention to how English language can be used to solve the real problems by using intercultural communication. For normal English majors, the ability of utilizing pedagogy and firm language knowledge is more important. With the goal of becoming a teacher, the normal English majors realize that they are in urgent need to improve their CT so that they can teach students to think in this manner in the future. Thus normal English majors and non-normal English majors have different attitudes towards each item of CT.

The differences of attitudes towards CT between normal English majors and non-normal English majors are analyzed from three aspects. Firstly, in regard to the meaning of CT, the non-normal English majors would be surer that they have a clear idea of CT. As Table 6 shows, the non-normal English majors express more agreement on the clear meaning of CT (M=3.3) in comparison to the mean of normal English majors (M=3.06). Secondly, concerning to the items that show the importance of CT, there exists the differences between normal English majors and non-normal English majors. In regards to the matter that whether teachers build CT explanations and exercises into most of lessons, the normal English majors more strongly approve. As Table 6 shows, the normal English majors expressed stronger agreement on this item (M=3.7) by comparison with the mean of non-

44. Stapleton, 14-23.

normal English majors (M=3.3). The teachers of normal students may build the CT exercises more frequently. Except that, concerning the necessity to emphasize the role of CT in the curriculum, the non-normal majors revealed stronger viewpoints. As Table 6 shows, the non-normal majors show the stronger disagreement over the idea (M=4.35) that it is not necessary to increase the role of CT into the curriculum in comparison to the mean of normal students (M=4.22). As well, in respect to the teachers' responsibility to teach CT in the classroom, the non-normal English majors show more agreement than normal English majors. As Table 6 shows, the non-normal English majors show more agreement on the responsibility of teachers to teach CT (M=4.3) after making a comparison of normal English majors (M=4.04). As for the importance of CT in foreign language learning, the non-normal students have more enthusiasm regarding the importance of CT. As Table 6 shows, the non-normal English majors show more agreement to the special function in foreign language learning (M=4.22) in comparison to the mean of normal students (M=4.06). All in all, the non-normal English majors expressed more agreement with CT's importance in the curriculum and in teachers' jobs, especially in foreign language learning. Thirdly, concerning the desire to get more training from teachers about how to learn CT skills, the normal English majors have the stronger desire to improve CT. As Table 6 shows, the normal English majors show a stronger yearning to get CT training from teachers (M=4.19), in comparison to the mean of non-normal English majors (M=3.97)— they show a more urgent need for the improvement of CT with the teachers' help.

On the whole, the students show positive attitudes towards CT. The non-normal English majors keep a more clear idea of what CT is and hold a stronger belief that the teachers and the relevant curricula are all important to develop CT. The normal English majors have the stronger desire to get more training about CT.

Table 6. *Attitudes towards CT of Normal Students and Non-Normal Students*

Level of agreement	Normal students		Non-normal students		Total	
	M	SD	M	SD	M	SD
1	3.06	0.71522	3.3	0.57081	3.14	0.67433
2	3.84	0.61784	3.86	0.71344	3.85	0.65016
3	3.7	0.72306	3.3	0.71344	3.57	0.84491
4	2.28	0.7549	2.19	0.81096	2.25	0.77271
5	4.22	0.83159	4.35	0.58766	4.27	0.75338
6	4.04	0.81264	4.3	0.66101	4.13	0.81321
7	4.06	0.87789	4.22	0.7124	4.12	0.74139
8	4.19	0.7564	3.97	0.95703	4.13	0.88885
Total	3.68	0.76455	3.69	0.74402	3.68	0.68253

Source: Paul Stapleton (2011.)[45]

45. Stapleton, 14-23.

Conclusion

Major Findings

This study explores English majors' attitudes towards CT. After the analysis and discussion of the data, three main findings can be concluded. Firstly, most of the English majors were not really clear about CT, which implies a need to improve the understanding of the concept of CT among students. However, they do realize that CT is important for them to study, and especially to learn foreign language, and most of them express the need for more training in how to learn CT skills. Secondly, art students are clearer about CT, but CT has a higher position in the science students' point of view, and science students express the stronger desire to get more training on how to improve CT skills. Thirdly, non-normal English majors are clearer about CT and hold stronger viewpoints that improving CT plays an important role in English learning, while normal English majors hold a stronger desire to get more training about CT.

Implications

The findings can be taken as indicators that the development of CT should take students' attitudes towards CT into due consideration. It is significant to know what they are interested in and what they need in the process of teaching CT. The development of CT skills and the attitude towards CT are both crucial. Furthermore, as teachers play a key role in the training of CT, they need to utilize appropriate learning materials and alternative methods that are appropriate to teach critical thinking skills. Moreover, it is necessary for teachers to educate themselves ideally so that they could have in-depth knowledge of critical thinking and understanding of how to incorporate this into their lessons. In addition, in order to improve teachers' capability for teaching CT, schools and institutions must provide them with required time and resources which are necessary for professional development to occur. Finally, teachers can utilize some approaches proposed by language experts to incorporate CT into the education process. For example, Ennis[46] proposed three approaches about how to foster CT attitudes in school: a general approach, an infusion approach, and an immersion approach. Yuya Akatsuka[47] stated the effectiveness of high-order thinking skills (HOTS) in the process of fostering CT attitudes.

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46. Robert H. Ennis, "Critical Thinking and Subject Specificity: Classification and Needed Research," *Educational Researcher* 18, no. 3 (1989): 4-10.

47. Y. Akatsuka, *Awareness of Critical Thinking Attitudes and English Language Skills: The Effects of Questions Involving Higher-Order Thinking*, 59-84.

Limitations and Suggestions for Future Research

This study analyzes the understanding of critical thinking cultivation among English majors and provides valuable data support for the cultivation of critical thinking of English majors. This study mainly analyses the differences of attitudes towards CT between art students and science students, and the differences of normal English majors and non-normal English majors. Future research can further determine students' attitudes towards CT from other perspectives such as gender and grade. In addition, this study only uses the questionnaires as the instrument to conduct the survey, and future research can be combined with interview investigation to make further demonstration. Finally, the research subjects are English majors. The results are only suitable for the English majors' attitudes towards CT. Future research can further explore students' attitude towards CT by comparing to other majors, which can make the research results more universal.

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Appendix

Questionnaire

Dear Sir/Madam

Thank you very much for participating in this survey. The purpose of this survey is to study the attitudes towards critical thinking and critical thinking ability of English majors. All questions are not about right or wrong, nor are they assessments of your academic performance. Your careful and objective filling is very important for research! I hope you can finish this test patiently. The test does not involve personal privacy, only for scientific research. Thank you for your cooperation!

Gender: 1. male 2. female
Grade: 1. freshman 2. sophomore 3. junior 4. senior
You are 1. arts student 2. science student

Please Choose your Degree of Agreement for the Following Items

Items	**Strongly Disagree**	**Disagree**	**Not Sure**	**Agree**	**Strongly Agree**
1. I have a clear idea of what the term "critical thinking" means.	1	2	3	4	5
2. Learning critical thinking is an important part of my study as a student	1	2	3	4	5
3. Teachers give us the training of critical thinking in many courses.	1	2	3	4	5
4. Chinese students in general are not good at critical thinking.	1	2	3	4	5
5. It is not necessary to increase the role of critical thinking into the curriculum.	1	2	3	4	5
6. It is not the job of the teacher to teach critical thinking in the classroom.	1	2	3	4	5
7. Critical thinking is especially important in foreign language learning.	1	2	3	4	5
8. I need more instruction from teachers about how to train critical thinking skills.	1	2	3	4	5