



# PRE-SERVICE TEACHERS' PERCEPTIONS OF CRITICAL THINKING BEFORE AND AFTER TAKING A COURSE ON CRITICAL THINKING IN ENGLISH LANGUAGE TEACHING

Nguyen Thi Thanh Binh \*, Tran Thi Thanh Ngoc,  
Hoang Thi Le Ngoc, Le Nguyen Hanh Phuoc

University of Foreign Languages, Hue University, 57 Nguyen Khoa Chiem St., Hue, Vietnam

\* Correspondence to **Nguyen Thi Thanh Binh** <nttbinh@hueuni.edu.vn >

*(Received: December 04, 2022; Accepted: March 27, 2023)*

**Abstract.** With the benefits of critical thinking (CT) in language education, there has been a call for an explicit focus on CT in language teacher education. This study investigates pre-service teachers' perceptions of a course named 'Critical Thinking in English Language Teaching', especially what changes they had after the course. The 2020-2021 cohort of pre-service teachers of an English Teacher Education program at Hue University of Foreign Languages and International Studies, Hue University were the participants of the study. Questionnaires and group interviews were used to collect the data about the pre-service teachers' perceptions of CT and CT teaching before and after the course. The findings showed that the participants reported a change in their understanding of CT. They reported more confidence in the pedagogical aspects of CT instruction. The study contributes to the literature about the effectiveness of the infusion approach to CT instruction from pre-service language teachers' perspectives and proposes some implications for a similar course on CT in the English language teaching context.

**Keywords:** Critical thinking in English language teaching course, pre-service language teachers, perceptions, self-efficacy, infusion approach

## 1. Introduction

Critical thinking has gained its important role in language education in recent years. Language educators believe in the benefits that critical thinking can bring to language learners. For example, it produces enthusiastic language learners. Moreover, stimulating active thinking

among learners through pedagogical choices such as problem-solving activities helps increase learners' linguistic knowledge as well as their ability to use it in communication. It is strongly believed that a learner's proficiency in a language is reflected in his/her competence in not only using the language and knowing its meaning, but also using creative and critical thinking through that language.

In order to cultivate critical thinking for students, teachers and their teaching methodologies play a central role [18]. Some researchers even state that teachers need to have/exercise critical thinking to be able to develop this competence for their students (e.g., [15]). In the same line with the above argument, pre-service teachers have been considered to have a key role as they are supposed to teach or cultivate this skill directly for students [17]; [19]. Studies on pre-service teachers' perceptions about critical thinking and its teaching (e.g., [18]; [19]) show that pre-service teachers lacked a thorough understanding about critical thinking; they did not receive sufficient support in developing critical thinking-integrated teaching methods; and the incorporation of critical thinking into EFL classrooms faced challenges originating from the research context. Therefore, promoting students' critical thinking is a significant task of teacher education programs as it achieves a good link between teaching and learning.

In response to a call for an explicit focus on critical thinking in teacher education, some courses on critical thinking under different names such as critical thinking-based pedagogical course [16] or critical thinking-integrated instruction course [17] were introduced in a Turkish vocational teacher education or a Chinese general teacher education program, respectively. In the field of EFL, even though researchers have paid attention to critical thinking instruction in EFL courses, there is no separate course on critical thinking in an EFL teacher education program except for one at the research context. The course on Critical thinking in English Language Teaching (CT in ELT course) was first introduced in the English Teacher Education program at the University of Foreign Languages and International Studies, Hue University in the 2020-2021 academic year.

With the aim to explore the pre-service teachers' perceptions of the CT in ELT course, this article reported a part of a larger study on pre-service students' perceptions and practices in integrating CT in their teaching. In this article, the main aim is to investigate how the pre-service teachers perceived the changes that the CT in ELT course had on their understanding of CT and on their self-efficacy of CT teaching methodology. This will contribute to the literature on the field of pre-service teachers' cognition about critical thinking. Also, the findings of this study are expected to fill in the gap in the literature of the impact of an infusion approach to

critical thinking instruction [7] where generic CT principles are taught explicitly combined with the content of a particular subject (English language teaching).

The study aims to seek the answers to the following research questions:

1. How do the pre-service teachers perceive CT before and after completing the CT in language teaching course?
2. What changes in perceptions in self-efficacy about CT instruction are reported by the pre-service English teachers?

## 2. Literature Review

### 2.1. The conceptualisation of critical thinking

As an abstract concept, CT has a variety of definitions. A brief overview of the existing conceptions of critical thinking shows that there are some common themes in understanding this concept. Firstly, critical thinking involves rationality and cognition. Ennis [6], for example, defines critical thinking as "reflective and reasonable thinking which is focused on deciding what to believe or do" (p. 45). It can be seen from this definition that critical thinking relates to reasoning skills. A key element of critical thinking is cognition. Facione [18] in his Delphi report presents a consensus among forty-eight scholars on the cognitive skills conducive to the central skills of critical thinking.

The second theme of critical thinking that appears in some definitions is questioning and challenging existing knowledge and the social order. Gieve [9] asserts that critical thinking is "reflective social practice". This involves questioning or changing conventional attitudes and practices rather than unwittingly accepting the *status quo*. Benesch ([3], p. 546) expands the definition of critical thinking not simply as higher order thinking but also as "a search for the social, historical and political roots of conventional knowledge and an orientation to transform learning and society". Gieve [9] calls this form of thinking dialogic critical thinking. Dialogic critical thinking requires a thorough study and consideration of various viewpoints; therefore, in the classroom, this form of critical thinking helps to exchange ideas and to promote tolerance and social justice [3].

Another theme concerning the nature of critical thinking is critical dispositions [6]. A critical thinker needs not only skills and abilities but also dispositions and preparedness to use those skills in appropriate contexts. Halpern [10] claims that "it's not enough to teach college students the skills of critical thinking if they are not inclined to use them" (p. 72). Halpern

argues that besides critical thinking skills, students need an attitude or disposition to readily apply those skills in their learning or social life. This emphasis on critical dispositions is appropriate because attitude is the guidance for one's action. Wagner (1997, in [10]) asserts that no one could develop expertise in any area without engaging in the processes of thinking.

To sum up, CT is composed of logical skills, dialogical reasoning and a critical spirit. Owing to the multiple meanings of this concept, it is acknowledged that CT should be understood in context [4].

## 2.2. Approaches to CT instruction

According to Ennis ([7], pp. 4-5), there are four approaches to CT instruction: general, infusion, immersion and mixed. A general approach entails a discrete course to teach the generic principles of critical thinking. This approach separates the teaching of CT from the presentation of the content of a particular subject. The infusion and immersion approaches encourage students to think critically about the subject matter; in effect, CT is incorporated into the learning of the course contents. However, the infusion and immersion approaches differ vis-à-vis which generic principles of CT dispositions and abilities are introduced. In the infusion approach, the principles are made explicit; this does not occur in the immersion approach. The mixed approach is a combination of the general approach with either the infusion or immersion approaches.

While there have been studies of the effectiveness of each instructional approach, no consensus has been reached on whether CT skills should be taught in domain-independent (general) courses or whether they should be integrated within the existing subject-matter courses. Nickerson [14] clearly elaborated the risks involved in both the general and discipline-embedded approaches:

A risk of teaching a specific aspect of thinking only in a 'content-free' way is that the student will acquire some understanding of that aspect but fail to connect that knowledge to the many situations in life in which it could be useful. A risk of teaching the same aspect of thinking only within the context of a [standard subject matter] course is that the student will fail to abstract from the situation that is really context independent and again will not transfer what has been learned to other contexts (p. 34).

The possible merits or drawbacks of each instructional approach relate to the transfer of the learned CT skills to real life situations.

The question of transferability, generalisability and applicability of CT is the root of the arguments about the effectiveness of CT instruction approaches. A debate exists in the literature as to whether critical thinking should be conceptualised as (a) a set of general cognitive skills

that applies across fields or subjects [7], or (b) as a list of skills that varies as a function of their contextual fields or subjects of study [12]. Scholars who support the generalist position (e.g., [7]) argue that critical thinking comprises a defined set of constitutive skills which can be applied across all academic disciplines. General thinking skills, therefore, can be taught in isolation, with little attention to content. By contrast, McPeck – the main proponent of subject specificity – argues that there can be no completely general set of skills that can be applied across all fields or domains. For McPeck [12], thinking must be about something. The development of students' critical thinking ability, therefore, is always best pursued within the context of their study within disciplines [12]. Other scholars, however, support either generalist or specific positions, less absolutely than Ennis or McPeck. These scholars, while aware of the role of subject-specific content knowledge, subscribe to the generalisability of critical thinking. They posit that while knowledge and cognitive skills are interdependent, certain general principles of critical thinking exist and transcend specific subjects and are applicable to a range of disciplines and problems [13].

At the research context, the CT in ELT course was designed with an infusion approach and from the discipline-specific position. In the context of classrooms wherein English as a foreign language is used as a medium and object of teaching and learning, the teachers' and students' conceptions of critical thinking and their practices of critical thinking in this field are expected to be specific to that field. In the course, the generic principles of CT were explicitly taught to the pre-service students towards the content of English language teaching. So far, in Vietnam, some universities offer a course on critical thinking as a general course for all students (e.g., Hoa Sen university, Nha Trang university, International University – Vietnam National University Ho Chi Minh city), but no course designed specifically for English language teaching and for pre-service teachers like the CT in ELT course at the research context. With its unique existence up to now, it is necessary to investigate possible changes that the course has brought to the pre-service teachers, especially in their perceptions and self-efficacy of CT and CT instruction.

### **2.3. Pre-service teachers' perceptions about CT and CT instruction and related studies**

Teachers' cognition (knowledge, perceptions, beliefs and attitudes) is one of the factors determining their transfer of knowledge to students [4]. Abrami et al. [1, p. 276] argue that "only when teachers have the initiative to cultivate students' critical thinking, can they promote the development of students' critical thinking". With an increasing interest in cultivating CT for students, there have been numerous studies on teachers' perceptions about CT and its teaching (e.g., [2]; [20]). However, research on pre-service teachers' perceptions regarding CT is still in its infancy [15].

Among the limited number of studies on EFL pre-service teachers' perceptions about critical thinking and its teaching (e.g., [15]; [17]; [18]; [19]), some of them (e.g., [18]) explored the issue in a naturalistic setting, meaning having no intervention or training about CT for the participants. Yuan and Stapleton [18], for example, interviewed a group of 12 students in a Master in English teaching education program in China about their perceptions of CT and CT teaching from their learning experience. The study concluded that pre-service language teachers had a limited understanding of CT and lacked preparation and support in their programs to teach CT. Yuan and Stapleton [18] and other researchers in this group called for further training for pre-service language teachers about CT and CT-integrated methods.

Some other studies (e.g., [15]; [17], [19]) investigated pre-service language teachers after they had received a certain support in their teacher education programs such as an 18-week training course on critical thinking in a teacher education program in Taiwan [17], an CT action plan with a CT framework for CT in language teaching in Turkey [15], or a field trip and practicum in New Zealand for pre-service students in a university in Hong Kong [19]. The impact of these forms of support was measured in various aspects: comparing CT skills and dispositions between the controlled and the experimental groups of the learners taught by the pre-service teachers, and measuring the transfer by comparing the academic achievements of the two groups [17]; or by the pre-service teachers' perceptions about CT and CT teaching before and after the action plan [15] or about their critical thinking skills and dispositions before and during the field trip [19]. The support/intervention in these studies showed their positive impact on preparing the pre-service teachers with fundamental knowledge about CT and its teaching methods so that they can develop this skill for their future students.

From the few studies on the ways to help pre-service teachers enhance their knowledge of CT and CT-integrated methods, it can be seen that there have not been many courses on CT and CT instruction in teacher education curriculum in the EFL context, and no studies so far, on the perceptions of EFL pre-service teachers after studying such a course, especially regarding their self-efficacy about CT teaching. This study, therefore, aims to fill in that gap in the literature.

### **3. Research methodology**

The research setting

The CT in ELT is an elective course which was first included in the English Teacher Training program at University of Foreign Language, Hue University in 2020-2021 academic year. It is a two-credit course with 2 hours of class meeting per week. The course lasts fifteen

weeks. According to this course syllabus, different aspects of CT in ELT are included: CT conceptualisation, CT models, ELT materials to promote CT, questioning techniques to promote CT, CT in teaching receptive language skills, CT in teaching productive language skills, integrating CT into teaching culture, assessing CT in ELT and challenges in teaching CT skills. This course aims to equip the pre-service students with basic principles CT and CT teaching, and opportunities to integrate CT in English language classrooms.

#### Research design

To investigate the pre-service teachers' changes in their perceptions of CT and their CT teaching self-efficacy, this study used a case study approach. The cohort of fourth-year pre-service teachers at University of Foreign Languages and International Studies, Hue University was selected to be the case of the study. This cohort included 50 pre-service teachers who specialised in English language teaching. They would become English teachers at high schools the following year. In the semester that this study was conducted, the CT in ELT course was first taught. It was allocated in the seventh semester of an eight-semester training program. The pre-service students did their practicum at local high schools in the last semester.

#### Data collection tools

Questionnaires and group interviews were the two data collection tools. Forty-three pre-service teachers who agreed to participate in the study answered two questionnaires, one at the beginning and one at the end of the course. After filling the second questionnaire, six pre-service teachers volunteered to sit in a group interview, each of which had three participants. Vietnamese was used in these data collection tools so that the participants could understand the questions correctly and feel free to express their ideas, especially when they had to talk about an abstract concept like CT.

The first questionnaire aims to understand the pre-service teachers' perceptions of CT and their CT teaching self-efficacy before they studied the CT in ELT course. The first questionnaire consists of one open-ended question asking the participants to write a definition of CT in their own words and one question with 6 points (from Completely untrue to Completely true) asking for the participants' perceptions of their knowledge about CT teaching methods. Six-point asymmetric Likert scale was used because it offers fewer choices on one side of neutrality as compared to other side [22].

The second questionnaire was delivered at the end of the semester to the same pre-service teachers who had answered the first questionnaire. The second questionnaire includes a Yes/No question about whether they had any changes in their understanding of CT concept after they studied the CT in ELT course. This Yes/No question was followed by an open-ended

question asking them to clarify the changes if they chose “Yes” option. There was also a question with 10 Likert scale items stating the pre-service teachers’ confidence in CT teaching after the course. The Cronbach’s Alpha reliability value is .87, showing satisfactory result, according to Field [19].

**Table 1.** Reliability Statistics for perceptions of CT teaching self-efficacy after the course

Cronbach's Alpha	N of Items
.87	11

Group interviews were then conducted with six pre-service teachers who had filled the two questionnaires and volunteered to sit in a group interview. There were two group interviews with three participants in each group. Group interviews were chosen to save the participants’ time as they were all busy preparing for their end-of-course exam and practicum at high schools at that point of time. Moreover, group interviews could help the participants to generate a wider range of responses (Lewis, 1992 in [5]). In the 60-minute interviews, the pre-service teachers explained or clarified what they had gained from the course and some preliminary findings from the questionnaires. The interviews were conducted in Vietnamese so that the participants could explain their thoughts more thoroughly. The group interviews were audio recorded with the participants’ consent.

In this article, the forty-three pre-service teachers filling the questionnaires are coded as Participant 1 to 43. The participants from 1 to 6 agreed to sit in group interviews.

Data analysis

The questionnaire data were put into SPSS 25 to analyse its descriptive statistics. Thematic and content analysis was employed to process the data generated from open-ended questions in the questionnaires and group interviews. The researcher listened to the recordings many times to categorise the data into themes, and transcribed and translated into English some parts that were quoted in the article.

The researcher was aware of the ethical issues while conducting the study. The participants were informed of being free to withdraw from the research at any point, or ensured their confidentiality. Some methods were taken to ensure the validity and reliability of the research. For example, before finalising the questionnaires, their first drafts were delivered to two pre-service teachers of the same cohort as those participating in the study for their comments. Some changes were made after these comments.



## 4. Findings and discussion

### 4.1. Pre-service teachers' perceptions of CT before and after taking the CT in ELT course

The data of the pre-service teachers' understanding of CT from the first questionnaire showed that before studying the CT in ELT course, they had had a rudimental understanding of CT. 28 out of 43 participants considered CT as the action of arguing against others to defend their own opinions. The pre-service teachers even equated CT with just expressing personal opinions by spoken language (Participant 26) or having an argument with another person with the aim to reject his/her opinions and defend one's own (Participant 17).

Besides the naive conceptualisation of CT as mentioned above, some pre-service teachers indicated more understanding of CT such as a set of cognitive skills (synthesising, analysing or evaluating a piece of information) to see a problem from different perspectives. Participant 11, for example, thought thinking critically meant processing information in a proactive way. Critical thinkers, in Participant 11's words, "reflect on their own situation and knowledge to assess that piece of information instead of accepting it passively". According to Participant 16, CT is "the mindset to examine a particular person/thing/issue from various perspectives and the ability to have your own opinion on it without following the others". This participant stressed the role of CT in forming a person's originality.

Some other pre-service teachers defined CT as seeing things from different perspectives (Participants 14, 16, 33, 41, and 43) or highlighted the role of evidence as a component of being critical (Participants 20, and 25). According to Participant 41, critical people can recognise a problem from many sides, both negative and positive ones; or be open to explore the problem in many aspects to understand its nature.

After studying the CT in ELT course, the pre-service teachers could understand more about what CT means. As indicated in Table 2 86% of the surveyed participants reported a change in their understanding of CT.

**Table 2.** Change in pre-service teachers' perception of CT

	Frequency	Percent	Valid Percent	Cumulative Percent
Change	37	86.0	86.0	86.0
Not change	6	14.0	14.0	100.0
Total	43	100.0	100.0	

Admitting a lack of full understanding of CT before studying about CT in ELT, the pre-service teachers pointed out the changes in their ways to interpret this concept after the course. For example, Participant 15 wrote:

“Previously, my understanding of CT is vague. I thought CT simply meant receiving information and raising opinions against that information. Now, I realise that critical thinkers need to analyse the matter thoroughly, from many perspectives, before making any evaluation about it”.

For Participant 12, the change is in her understanding of the importance of analytical thinking and the readiness to apply that thinking in any situation. She wrote:

“Before the course, I just had a very general and unclear conceptualisation of CT. After the course, I know that CT means asking the questions such as “why”, “how”, or “what if” to deeply understand a problem. We need to be ready to explore everything by asking these questions”.

The pre-service teachers also mentioned the different levels and dimensions of CT. For instance, Participant 34 stressed, “Now I understand that there are different levels of CT according to Bloom’s model. Also, CT is not only reflected in your evaluation of other people’s ideas but also in that of your own”.

It can be said that the CT in ELT course helps the pre-service teachers to reach a more comprehensive understanding of CT. The participants admitted their rudimentary perception of CT before studying the CT in ELT course, which is similar to previous studies on pre-service language teachers’ perceptions of CT. For example, it is the findings about Hong Kong pre-service students’ lack of thorough understanding of CT that Yuan and Stapleton’s [18] called to provide the teacher students with further training on CT. The fact that most of the pre-service teachers realised a change in their understanding of CT also confirmed by Petek and Bedir [15] who found that 100% of their participants correctly recognised CT tasks after the action plan. With a more thorough understanding of CT, hopefully the participants in this study will be more confident in integrating this skill in the English classes in the future.

#### **4.2 Reported changes in pre-service teachers’ perceptions of their self-efficacy of CT teaching**

As shown in Table 3, before the CT in ELT course, the pre-service teachers had a limited knowledge of the methods to integrate CT in English lessons ( $M=3.47$ ,  $SD=1.22$ ). There was a big variation in the participants’ answers implying a diverse background of learning English. In the interviews afterwards, some pre-service teachers explained that they did not have any ideas about the techniques or tools to exploit the lessons to promote CT for students. They had heard

about CT just in newspaper or mass media and had understood CT in its most rudimental meaning; hence they thought debate was the only way to develop CT or asking “why” questions is enough for students to think critically (e.g., Participant 3, Participant 5).

Some pre-service teachers, however, expressed that they had known some methods to promote CT in previous courses on teaching methodology but they could not label them as CT (Interview 4). Participant 6 shared that she had had an interest in CT since she was young, thereby thinking a lot about integrating CT in her lessons. This pre-service teacher, however, admitted that she had not been equipped with the methods to do this in class. This finding is supported by previous studies (e.g., [35]) on pre-service teachers’ knowledge about CT instruction.

**Table 3. Experience in CT pedagogy before the CT in ELT course**

	Min	Max	Mean	Std. Deviation
I don't know the methods to integrate CT in my lessons.	1.00	6.00	3.47	1.22
Valid N (listwise)				

After the CT in ELT course, the pre-service teachers showed a positive change in their view about CT teaching self-efficacy. As illustrated in Tables 4 and 5, the pre-service teachers’ perceptions of their self-efficacy in CT teaching were reflected in two aspects: the discipline-specific nature of the CT in ELT course (Table 4), and the application of CT in language skills, assessment and material selection (Table 5).

**Table 4. Perceptions of CT teaching self-efficacy after the course – Discipline-specific nature**

After the CT in ELT course,	Min	Max	Mean	Std. Deviation
<b>Definition of CT</b>				
1. I can understand the principles underlying the integration of CT in English lessons.	4.00	6.00	5.19	.59
2. I can apply the CT teaching methods in my English classes because I was able to learn these methods explicitly instead of implicitly in previous courses on ELT methodology.	4.00	6.00	5.28	.55
3. I can apply the CT teaching methods in my English	4.00	6.00	5.44	.59

classes because I was able to learn about CT in the context of ELT.				
4. I can apply the CT teaching methods in my English classes because I was able to practise these methods right in class.	3.00	6.00	5.33	.68
			<b>5.31</b>	<b>.45</b>

Regarding the pre-service teachers’ self-efficacy due to the discipline-specific nature of the CT in ELT course, the participants reported their positive perceptions. Table 4 shows that the pre-service teachers were confident that they were able to apply the CT teaching methods in their English lessons because this course was designed specifically for EFL pre-service teachers with ELT theories and practices (average mean score=5.31, SD=.45 ). The mean score of 5.44 for item 3 means that the pre-service teachers appreciated the opportunities to learn about CT in the context of ELT.

In the group interviews conducted after the second questionnaire, the pre-service teachers explained the importance of the ELT context in helping them to understand more about CT concept and the methods to integrate CT. Participant 5, for example, said, “In a foreign language class, CT might be expressed differently compared to other subjects; hence, a course on CT in the context of language teaching really helped me with specific techniques to promote my students to think critically in English”. The participants also mentioned that each subject required the teaching methods suitable for the nature of the subject. Hence, the pre-service teachers highlighted the role of the course in helping them to understand CT techniques in relation to the ELT principles, thus being able to use these techniques more effectively. This finding contributes to the literature about the possibility of discipline-specific position of CT and the effectiveness of the infusion instruction approach.

The pre-service teachers also pinpointed the impact of being taught explicitly about CT and methods to integrate CT in EFL classes. Participant 4 said they had studied 3 courses on ELT methodology before the CT in ELT course. They realised that some techniques to provoke students’ CT had been mentioned in those courses (for example, the techniques in post reading or writing stages), but not as a main focus; and they had not been explained the link between those techniques and CT. After the CT in ELT course, they could understand more thoroughly and had opportunities to learn how to integrate CT in different skill lessons and for different levels of students.

This finding proves the effectiveness of a discipline-specific course in CT from the perceptions of the pre-service teachers, which contributes to the arguments in the literature about CT instruction approach (Section 2.2). This is especially of great importance in the context of a teacher education program where pre-service teachers learn to integrate CT in their future classrooms. The explicit teaching of CT and techniques to incorporate CT in English classrooms was reported to increase the pre-service teachers' self-efficacy in this aspect.

**Table 5.** Perceptions of CT teaching Self-efficacy after the course – Language skills, assessment and material selection

<b>After the CT in ELT course,</b>	Min	Max	Mean	Std. Deviation
5. I can apply the CT teaching methods in teaching Listening.	4.00	6.00	5.14	.74
6. I can apply the CT teaching methods in teaching Speaking.	4.00	6.00	5.33	.63
7. I can apply the CT teaching methods in teaching Reading.	4.00	6.00	5.28	.67
8. I can apply the CT teaching methods in teaching Writing.	4.00	6.00	5.35	.61
9. I can apply the CT teaching methods in teaching Culture.	4.00	6.00	5.28	.70
110. I can apply the CT assessment methods in my English classes.	3.00	6.00	4.81	.79
11. I can choose appropriate teaching materials to integrate CT in my English lessons.	3.00	6.00	5.07	.67
			<b>5.16</b>	<b>.50</b>

Concerning the application of CT in language skills, assessment and material selection, Table 5 indicates that pre-service teachers reported high level of confidence ( $M=5.16$ ,  $SD=.50$ ). Of the pedagogical aspects, the pre-service teachers were less confident in applying CT assessment methods ( $M=4.81$ ,  $SD=.79$ ). The interviews afterwards helped uncover this finding in

more details. The pre-service teachers said that they appreciated the opportunities to learn the techniques of integrating CT in each skill; hence, they understood more and felt more comfortable to promote CT. Pre-service teacher 1, for example, explained “In the course, we learnt how to use tools or methods to integrate CT in each stage of a lesson for each skill. The course provided us with a systematic knowledge of CT instruction”. Or, as shared by pre-service teacher 6, she believed she was able to select different techniques to engage the students in different levels of CT. When being asked why they seemed less confident in assessing the students’ CT, the pre-service teachers said that assessment was a hard task in its nature, let alone assessment of student’s CT. They thought if the course had been longer, they would have had more time to study about this aspect.

## 5. Conclusion and implications

The study set out to investigate the pre-service language teachers’ perceptions of CT and CT teaching before and after taking the CT in ELT course. Like the previous studies on pre-service teachers’ knowledge of CT and CT instruction, the participants in this study had had a rudimentary understanding of what CT means and little experience in CT instruction before the CT in ELT course. After the course, the pre-service teachers revealed a change in their perceptions of CT. A majority of the pre-service teachers realised what they had understood about CT was too simple and insufficient. The course was also reported to improve the participants’ self-efficacy in CT instruction, though their level of confidence varied depending on each aspect. Their confidence in CT instruction was perceived to result from the infusion approach of CT instruction in which the theories and principles of CT and CT instruction were taught explicitly in the context of English language teaching. This finding might be useful in providing an empirical evidence to the arguments about the effectiveness of a generic or discipline-specific course on CT.

From the research findings, it is implied that a course on CT in ELT is of necessity for pre-service teachers in language teacher education programs. As CT is recognised as an important 21st century skill, the development of this skill should be encouraged in every language class. In order to prepare well for language teachers to incorporate CT into their language classrooms, CT and CT instruction should be included in the teacher education program. Moreover, theories and principles of CT and CT instruction should be introduced and practised in the different aspects of language teaching (e.g., teaching listening, reading, etc.) so that pre-service teachers feel confident to integrate CT as they are well equipped with necessary techniques in developing CT in different language skills and areas. Besides, such a course on CT and CT instruction should be long enough for pre-service teachers to grab the key concepts and be able to apply what they study from the course to their future teaching.

This study preliminarily investigated the effectiveness of a course on CT in ELT from the pre-service teachers' reported changes in their understanding of CT and their self-efficacy of CT teaching. Although pre-service teachers' perceptions are of great importance in helping them to shape their future classroom practices, it would have been more insightful if the pre-service teachers' practices of CT had been explored. The effectiveness of the CT in ELT course could have been more proven if the pre-service teachers' CT had been measured. These limitations would be suggested directions for future research on the effects of a similar course on CT in EFL contexts.

## REFERENCES

1. Abrami, P., Bernard, E., Borokhovski, D., Waddington, C., Wade, C., & Persson, T. (2015). Strategies for teaching students to think critically: A meta-analysis. *Review of Educational Research*, 85(2), 275–314. DOI:10.3102/0034654314551063
2. Badger, J. (2019). A case study of Chinese students and IEP faculty perceptions of a creativity and critical thinking course. *Higher Education Studies*, 9(3), 34-44.
3. Benesch, S. (1993). Critical thinking: A learning process for democracy. *TESOL Quarterly*, 27 (3), 545-8.
4. Borg, S. (2003). Teacher cognition in language teaching: A review of research on what language teachers think, know, believe, and do. *Language Teaching*, 36(2), 81–109. doi:10.1017/S0261444803001903
5. Cohen, L., Manion, L. & Morrison, K. (2011). *Research methods in education*, 7 edn, Routledge, New York.
6. Ennis, R.H. (1985). A logical basis for measuring critical thinking skills. *Educational leadership*, 43 (2), 44-8.
7. Ennis, R.H. (1989). Critical thinking and subject specificity: Clarification and needed research. *Educational Researcher*, 18 (3), 4-10.
8. Field, A. (2005). *Discovering statistics using SPSS*. SAGE.
9. Gieve, S. (1998). Comments on Dwight Atkinson's "A critical approach to critical thinking in TESOL": another reader reacts... *TESOL Quarterly*, 32, 123-9.
10. Halpern, D.F. (1999). Teaching for critical thinking: helping college students develop the skills and dispositions of a critical thinker. *New directions for teaching and learning*, 80.

11. Joshi, A., Kale, S., Chandel, S. & Pal, D. K. (2015). Likert scale: Explored and Explained. *British Journal of Applied Science and Technology*, 7 (4), 396-403.
12. McPeck, J.E. (1990). Critical thinking and subject specificity: A reply to Ennis. *Educational Researcher*. 19 (4), 10-12.
13. Moore, T. (2004). The critical thinking debate: how general are general thinking skills?. *Higher Education Research & Development*, 23 (1), 3-18.
14. Nickerson, R. (1988). On improving thinking through instruction. *Review of Research in Education*, 15 (3), 3-57.
15. Petek, E., & Bedir, H. (2018). An Adaptable Teacher Education Framework for Critical Thinking in Language Teaching. *Thinking Skills and Creativity*, 28, 56-72. DOI: <https://doi.org/10.1016/j.tsc.2018.02.008>.
16. Tiruneh, D.T., Verburgh, A. & Elen, J. (2014). Effectiveness of Critical Thinking Instruction in Higher Education: A Systematic Review of Intervention Studies. *Higher Education Studies*, 4 (1), 1-17.
17. Yang, C. (2019). Cultivating critical thinkers: Explore transfer of learning from pre-service teacher training to classroom practice. *Teaching and Teacher Education*, 28, 1116-1130.
18. Yuan, R., & Stapleton, P. (2019). Student teachers' perceptions of critical thinking and its teaching. *ELT Journal*. doi:<https://doi.org/10.1093/elt/ccz044>
19. Yuan, R., Yang, M. & Lee, I. (2021). Preparing pre-service language teachers to teach critical thinking: Can overseas field school experience make a difference? *Thinking Skills and Creativity*, 40. <https://doi.org/10.1016/j.tsc.2021.100832>
20. Zhang, H., Yuan, R. and He, X. (2020). Investigating University EFL Teachers' Perceptions of Critical Thinking and Its Teaching: Voices from China. *The Asia-Pacific Education Researcher*, 29, 483-493.