語言教師教育課堂中培育批判性思維和批判性思維教學：來自教師教育者的啟示

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摘要

語言教師的批判性思維在他們的教學工作中是不可或缺的，但要將批判性思維融入課堂中可能會面臨一些挑戰。尤其是對於處於考試導向的英語作為外語語境的語言教師來說，這一挑戰尤為明顯。因此，在職前教師教育階段，語言教師教育者提供的指導和支持至關重要。本質性個案研究探討了兩位香港的語言教師教育者在此方面的嘗試，關注他們在協助語言教師成為批判性思維者並將批判思維融入他們未來的語言課堂中的信念和實踐。研究資料來自一個學期的課堂觀察和半結構化訪談，資料分析採取質性歸納方法。研究結果顯示，兩位語言教師教育者都堅信批判思維在語言學習、教學和教師教育中的至關重要性。通過觸發、體驗、引導和擴展的四種批判思維教學策略，他們將批判思維融入其教師教育課程，以培育語言教師以批判思維為導向的教學法。這些研究結果為關注英語為外語語境中的語言教師教育以及批判思維與語言教學的整合方面帶來了重要啟示。

關鍵詞：語言教師教育者、批判思維、融入批判思維的語言教師教育、英語作為外語

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Fostering Critical Thinking and Critical Thinking Instruction in Language Teacher Education Classrooms: Insights from Teacher Educators

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Abstract

While language teachers play a crucial role in fostering critical thinking in students as a means of strengthening their capabilities in problem-solving, informed decision-making, and effective communication, integrating critical thinking (CT) into classrooms can be challenging. This challenge is particularly prominent for teachers of English as a foreign-language (EFL), where orientation to exams and traditional teaching methods tend to prevail. Guidance and support from language teacher educators during the pre-service stage is therefore crucial, in order to equip language teachers not only with the solid knowledge and skills required to integrate CT into their pedagogy, but also with the resilience and sensitivity to determine when CT should be introduced to their students. This qualitative case study examines the attempts made by two language teacher educators in a pre-service EFL teacher education program in Hong Kong, focusing on their beliefs and practice in preparing language teachers to be critical thinkers who would be capable of effectively teaching CT in their future language classrooms. Data was collected from classroom observation and semi-structured interviews with the two participants over one academic semester. Qualitative and inductive analysis of the data revealed that both teacher educators held a strong belief in the crucial role of CT in language learning, teaching, and teacher education. Through the CT instructional strategies of triggering, exposing, guiding, and extending, they incorporated CT into their teacher education courses, with the goal of fostering a pedagogy oriented toward CT in their student teachers. The study concludes by providing insights for stakeholders interested in adopting CT-integrated language teacher education in EFL contexts.

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1. Introduction

Critical thinking (CT) is necessary for language learning as it enables students to reflect upon and monitor their learning progress. CT entails skills such as interpretation, analysis, evaluation, and self-regulation; it also involves dispositional qualities such as open-mindedness, willingness to consider and adjust perspectives as well as qualities related to problem-solving such as clarity and persistence (Abrami et al. 2015). In language education, while CT is recognized as an important learning outcome, language teachers often find it challenging to integrate CT into lessons given the need to teach using the stipulated curriculum and prescribed textbooks within limited time (Mok 2009). Moreover, without adequate knowledge and skills in CT and CT instruction, they may find CT elusive and difficult to be concretized in their classrooms (Li 2016). Strong support from language teacher education program is thus needed for language teachers' CT development and learning to teach with CT in language lessons (Yuan et al. 2021).

Over the past decade, research attention has been paid to nurturing student teachers' CT and CT pedagogy in different ELT contexts (Toshpulatova & Kinjemuratova 2020; Yang 2012). While these studies have delved into how student teachers were prepared to be critical thinkers and to teach CT in language classrooms, little is known about the source of such preparation – their teacher educators. While existing literature has shown that language teacher educators may practice in different settings (e.g., university programs or school contexts) (see Yuan et al. 2022 for a detailed review), the present study focuses on higher education-based professionals, who focus on preparing pre-service or future teachers in formal teacher education programs (Goodwin et al. 2014). Since student teachers are likely to look up to their teacher educators as role models whom they can learn from and imitate in their classroom practices (Yuan et al. 2021), their belief and practice about CT and CT instruction in language teaching would influence those of their student teachers. To date, although there has been considerable research examining language teachers' beliefs and practices (e.g., Farrell & Kun 2008; Johnson 1992; Yu et al. 2020), language teacher educators' own belief in CT and CT instruction in teacher education courses remain underexplored. Taking place in a five-year pre-service language teacher education program in an EFL context (i.e., Hong Kong), this qualitative case study seeks to fill the research gap by investigating two questions:

1. What are language teacher educators' beliefs about CT and its role in language teaching, learning, and teacher education?
2. How do language teacher educators prepare student teachers to be critical thinkers and to teach CT in pre-service teacher education courses?

2. Literature Review

2.1. Defining CT

Since CT is an important process and goal of education, attempts have been made to define this fuzzy concept. Many CT researchers emphasize CT as a thinking process that relies on reasoning, reflection, inner conversations, and evaluation. For instance, Ennis (1987 10) defined CT as "reasonable reflective thinking that is focused on deciding what to believe and do". Mulcahy (2008 18) referred to CT as the ability "to rationalize one's inner dialog and thought process with the goal of being able to evaluate thinking, feelings, and actions in a disciplined manner". Other CT researchers emphasize the practical and functional dimension of CT. Paul and Elder (2019 4) understood CT as the practice and "the art of analyzing and evaluating thinking with a view to improving it". Through this "self-directed, self-disciplined, self-monitored, and self-corrective" process, one becomes critical thinkers with the ability to identify vital problems, arrive at well-reasoned conclusions and solutions, gather and interpret information, evaluate alternatives, and communicate effectively with others. In these definitions, two dimensions of CT emerge. First, CT includes the dimension of *cognitive skills*, such as analysis, interpretation, evaluation, explanation, inference, and self-regulation. Second, CT involves *dispositional qualities* such as open-mindedness about alternatives and perspectives, willingness to consider and revise viewpoints, persistence in the face of difficulties, and alertness to opportunities to use and apply CT (Abrami et al. 2015).

2.2. CT Instruction in language Classrooms and the Role of Language Teacher Educators in Nurturing CT-oriented Pre-service Teachers

CT instructional approaches have been categorized into four distinct types including the general, infusion, immersion and mixed approaches, with each of them varying in the degree of explicitness with which general principles of CT dispositions and abilities are taught (Enni 1989). The

general approach calls for CT instruction to be delivered separately from the content of the subject matter. Both the infusion and immersion approaches encompass CT to be infused or embedded in the subject matter to foster students' CT within the context of subject-matter instruction. The infusion approach, however, involves CT principles to be explicitly integrated into instruction while the immersion approach does not make CT principles explicit but relies on implicit development of CT skills. The mixed approach comprises a combination of the general approach with either the infusion or immersion approaches. Empirical studies examining these four instructional approaches have demonstrated positive results in fostering students' CT skills (e.g., Miri & Azizi 2018; Orhan & Ceviker 2023; Wale & Bishaw 2020; Yang & Gamble 2013). As noted by Angeli and Valanides (2009), CT instructional approaches have shifted from the general approach to the infusion and immersion approaches since the 1990s based on the assumption that students would be able to better apply these skills beyond the initial subject through the integration of CT into subject-matter instruction.

Recent years have seen increased interest in investigating how students are aided to exercise CT in their learning process. In language classrooms, various techniques of CT instruction have been used. *Questioning*, for example, is a frequently used strategy in ESP classrooms to facilitate students' CT about the learned content knowledge (Dwee et al. 2016). *Self-reflection* on the learning process and difficulties is another useful strategy that promotes students' CT for improving their own learning (Dwee et al. 2016). Other CT instructional techniques in language classrooms include *debate* (Toshpulatova and Kinjemuratova 2020) and *direct modeling of CT* (Sun 2019). Based on a systematic review of empirical studies on EFL teachers' views of and engagement in CT instruction between 2010 to 2020, Yuan et al. (2022) identified four main CT instructional strategies, including triggering, exposing, guiding, and extending. *Triggering* is to arouse students' curiosity and motivation in addressing critical issues in language classrooms through teachers' deliberate selection of learning topics (Dwee et al. 2016; Sadeghi et al. 2020). *Exposing* is to present students with real-life complexities or situations in their learning of language through questioning, extensive reading, or discussions, which intends to "mess up" students' previously established knowledge and thought processes (Yuan et al. 2022 8). As students' motivation has been triggered and they have been exposed to complex or intricate issues, teachers can then implement *guiding* to

encourage students to take a stance towards critical issues and justify the stance, or to evaluate their own existing stance based on analysis and synthesis of facts and opinions about an issue (Omar & Albakri 2016; Sadeghi et al. 2020). In *extending*, teachers stretch students' thinking through providing them with meaningful inputs and experiences within specific contexts. This can be achieved by asking students to reflect upon learning (Toshpulatova & Kinjemuratova 2020), supporting students to take actions to tackle real-world, critical issues (Cáceres et al. 2020), or directly modeling CT in language classrooms, such as teachers articulating how they clarify or change viewpoints about an issue, to engage students in the process of CT (Sun 2019).

As evidenced in the literature, if utilized appropriately, CT instructional techniques can effectively mediate language learners' CT and positively influence their language learning process and results (Omar & Albakri 2016; Sadeghi et al. 2020; Yang 2012). The experience can also be rewarding for language teachers, as it can help them develop greater competence in teaching and enhance their professional confidence and identity (Sun 2019). However, for language teachers, such CT instructional techniques may not always be at their disposal but need to be learned like other pedagogical knowledge and skills (such as classroom language). Language teacher education programs and teaching educators therefore play a significant role in their development of CT and CT instructional techniques. For example, as existing models of CT instruction revealed (i.e., Lim et al. 2019; Yang 2012), students need their teachers' systematic guidance and provision of manageable steps to navigate CT in their learning process, regardless of the content or skills they are acquiring. In the context of pre-service language teacher education, this indicates the importance of teacher educators' strong understanding of CT, firm belief in its role in language teaching and learning, and possession of knowledge and skills in practicing CT-integrated instruction in their teacher education classrooms to influence their student teachers (Low et al. 2017).

To date, however, studies focusing on language teacher educators' beliefs in CT or implementation of CT instruction in teacher education classrooms remain scarce, especially when compared with the growing body of research on language teachers' views and practices in CT and CT instruction (e.g., Dwee 2016; Sun 2019; Zhang et al. 2020). Language teacher educators' *beliefs*, as their tacitly held perceptions and assumptions about teaching and learning, would likely influence their

classroom *practice*, or what they do about teaching and learning in the classroom (Kagan 1992). On the other hand, their classroom practice and experience may in turn shape or change their beliefs about teaching and learning (Sato & Kleinsasser 2004). Regarding CT and CT instruction, language teacher educators' beliefs and practices, which are in a symbiotic relationship, would influence their student teachers' learning of CT and orientation towards CT teaching in their future classrooms. Given the importance and lack of studies on the topic, this exploratory qualitative case study examines two EFL university-based teacher educators' beliefs and practices in CT and CT instruction in their pedagogy courses to shed light on CT-integrated language teacher education in similar contexts.

3. The Study

3.1. The Context: Critical Thinking in the Hong Kong English Curriculum

As a central pillar of the 21st century, CT is vital in cultivating a generation of learners adept at critically evaluating information and making informed decisions to overcome challenges in everyday lives (Butler et al. 2017; Lorencová et al. 2019). In light of its importance, CT has been highlighted as an important agenda in government policy globally such as England (Qualification and Curriculum Authority 1999), Singapore (National University of Singapore 2003), Malaysia (Curriculum Development Centre 1989), China (Ministry of Education 2001) and Hong Kong (EC 2000; CDC 2001). In Hong Kong, CT has been identified as one of the nine essential generic skills to be developed across subjects, including English. Rather than treating CT as a separate component from the content of a specific subject, CT has been encouraged to be infused into subject instruction. As such, it is recommended that teachers reduce rote-learning and direct transmission of knowledge so as to offer more space for student thinking and independent learning (CDC 2001). In the English language curriculum specifically, CT is suggested to be embedded in the learning and teaching of English through the utilization of a variety of text types, meaningful language learning activities, as well as stimulating questions that require learners to apply, analyze and synthesize information (CDC 2004, 2017, 2021). Despite the effort the government places on strengthening CT skills of learners, the incorporation of CT into the English language classroom is not evident. A typical classroom features a monologic approach,

characterized by teacher-led and question-and-answer format, thereby depriving students of opportunities of higher-order thinking experience (Lam 2012).

3.2. The Participants, Data Collection, and Data Analysis

This study is part of a larger research project, focusing on pre-service language teachers' CT and CT teaching in a 5-year Bachelor of Education (English) program in Hong Kong. While the larger project includes pre-service teachers and language teacher educators (Yuan et al. 2021), this qualitative case study reports classroom observation and interview data from two language teacher educators over a semester to understand their beliefs and practices of CT instruction in preparing pre-service language teachers. In Hong Kong, it is increasingly challenging to secure the participation of busy teacher educators in research projects. To enable access to data, convenience sampling was used in the study. Two language teacher educators (TE1 and TE2) were recruited and were regarded experienced in educating pre-service language teachers given their years of experience in teaching pedagogy courses, supervising teaching practicums, and collaborating with local schools (see Table 1). Their teacher education program explicitly included CT skills as a generic intended learning outcome of graduates. Teacher educators are encouraged to infuse CT skills into their English methodology courses since the university offers standalone critical thinking courses. Against such a backdrop, these two teacher educators had likely developed their own effective pedagogical approaches for language teacher education, while also making efforts to emphasize the teaching of CT in guiding pre-service teachers. Prior to data collection, ethical approval from the authors' university had been obtained and consent from the participants had been sought.

Table 1. The participants

	Age/ Gender	L1	Background	Qualification	Academic position	LTE experience (teaching & practicum supervision)
TE 1	Early 40s, female	Cantonese	Hong-Konger	Master's degree in language education	Lecturer	More than 10 years
TE 2	Early 40s, male	English	American	Master's degree in applied linguistics		

The data was collected from two sources: lesson observation and semi-structured interview. First, to examine the two teacher educators' practice of CT instruction, each was observed in one of their respective pedagogy courses for four consecutive sessions (each lasted for three hours), which were selected based on their preference. In total, around 12 hours of lesson observation were collected from each teacher educator. TE1 was observed in a course on teaching English listening and speaking to local primary students. In the observed lessons, TE1 focused on explaining basic principles of designing listening and speaking lessons, analyzing and adapting teaching materials, and introducing useful teaching activities and resources. TE2 was observed in a course about teaching English reading with educational technology. In the observed lessons, TE2 introduced the TPACK (i.e., Technological Pedagogical Content Knowledge) framework, based on which he guided the student teachers to make an e-storybook and a WebQuest for their future teaching. Overall, the observed lessons of the two participants prioritized lesson design as well as material development and use, which connected the theoretical and the practical in language teaching. All the lesson observations were audio-recorded. Field notes that documented the CT-related teaching episodes were also taken.

Based on a preliminary analysis of the observed lessons (with reference to the research questions), an in-depth semi-structured interview was conducted with the two participants respectively to reveal their beliefs about their practice of CT and CT instruction. For example, they were invited to share views about CT, how they integrated it into their teacher education classrooms, and their observation of and reflections on student teachers' responses (see the interview protocol in Appendix A). The interviews, conducted in English, lasted for around 60 minutes and were audio-recorded and transcribed.

Analysis of the data from lesson observation and interview followed a qualitative and inductive approach (Miles & Huberman 1994). Upon completion of reviewing all the collected data, the authors extracted episodes relevant to the research questions, including the teacher educators' beliefs about CT and CT instruction in language learning, teaching, and teacher education, as well as their practice of CT instruction in their teacher education courses. With reference to the four main CT instructional strategies of *triggering*, *exposing*, *guiding*, and *extending* (Yuan et al. 2022), the extracted episodes and associated data chunks were further categorized and thematized. To ensure trustworthiness of the findings, the authors engaged in critical discussions to reach a consensus of data interpretation and analysis.

4. The Findings

4.1. Beliefs about the Crucial Role of CT In Language Learning, Teaching, and Teacher Education

The teacher educators strongly believed CT, as an intricate and indispensable process of reasoning involving deep analysis, evaluation, and logic, permeates individuals' everyday lives. This belief is captured by a representative quote from TE2:

> Throughout our day, we're constantly collecting lots of information. We're prioritizing what information is important and what's not, in order to fulfil our certain purposes. That's what I think critical thinking is – taking in that information, evaluating it, organizing it, and then taking actions. (TE2 Interview)

Recognizing that CT empowers individuals to process information, make judgement, and initiate actions based on thorough understanding and analysis, the teacher educators underscored its significance in language learning, language teaching, and, consequently, language teacher education. In language learning, they emphasize CT as essential for helping learners analyze new language structures or elements they encounter and apply them in practical situations. This is acknowledged by TE1:

> Learning of language requires a certain level of analytical ability, because there are some regularities and some students are better at finding those regularities in the target language they are learning. (TE1 Interview)

In language teaching, the teacher educators also accentuated the indispensable role of CT. They explained that "everything a teacher does requires critical thinking" (TE1 Interview) and "once you're in a teaching job, it demands critical thinking skills to do it well" (TE2 Interview). In this vein, TE1 defined CT in language teaching as teachers' ability "to reason one's actions and decisions" and to "verbalize their reasoning" (TE1 Interview). TE2 emphasized that language teachers working in their complex environment needed CT to navigate their teaching work, which included but was not limited to lesson design and material development (i.e., what their student teachers mainly focused on in their pedagogy courses). Specifically, they stressed the necessity for language teachers to set a clear goal and use CT in the process of backward design of a lesson. TE1 explained:

> What student teachers need to know first is the lesson objective. They need to use some level of critical thinking to decide whether the activity they design will fulfill the objective. They also need critical thinking to apply knowledge of theories and research findings in the lesson design. (TE1 Interview)

TE2 further elaborated on the importance of evaluating options and strategies in teaching with the use of CT:

> The student teachers need to become aware of their own strategies when they are trying to create a lesson. Critical thinking allows them

to reflect upon this process and makes it more systematic. (TE2 Interview)

The teacher educators' conviction regarding the pivotal role of CT in language learning and teaching drives their pedagogical practice, ensuring the development of CT skills is integrated in language education, thereby preparing their student teachers to cultivate such skills in their future students., TE1 and TE2, however, did not explicitly explain what CT is to their student teachers in their teacher education courses. Instead, they incorporated CT into the activities and learning tasks, with the aim of implicitly and incrementally influencing their student teachers. An examination of the lesson observation data revealed that TE1 and TE2 adopted a variety of CT instructional strategies in their courses to help their student teachers develop CT skills in language teaching and become CT-oriented language teachers, including exposing, extending, triggering, and guiding (as presented below). The implementation of CT instruction in their language teacher education classrooms reflected how the teacher educators' beliefs about the significance of CT guided their decision making and influenced their practice.

4.2. Developing Student Teachers' CT about Language Teaching through Exposing and Extending

The strong belief the teacher educators held about the intertwined relationship between CT and language teaching acted as a catalyst for the integration of CT instruction throughout the courses. During their pre-service stage, most student teachers lacked experience in language teaching and possessed limited understanding of the practical realities of teaching in schools (TE1 Interview). This could pose a challenge for both student teachers and their teacher educators as the former embarked on the journey of learning to teach. Without hands-on practice and reflective analysis of experience, designing a lesson that is appropriate and effective for an imagined target student group was not an easy task (TE2 Interview). As such, both teacher educators devoted considerable efforts towards creating meaningful and practical experiences for their student teachers in their courses by employing CT instructional strategies. They particularly relied on *exposing* and *extending* to raise student teachers' CT about different issues and dimensions in language teaching. In TE1's course on teaching English listening and speaking, she often infused CT instruction in

context-based scenarios through *exposing* students to the intricate and messy reality of teaching primary students. This usually transcended content teaching and required consideration of issues such as classroom management. In this process, her student teachers' experience was also *extended*, which was achieved through the sharing of her own frontline teaching experiences and direct modeling of her teaching approach. The lesson excerpt below, in which TE1 demonstrated how she meticulously tailored the lesson objectives and designed an information gap activity to suit students' age and cognitive level, was a representative example of the teacher educators' use of exposing and extending in developing the pre-service teachers' CT about teaching, particularly the CT skills of analysis and evaluation.

> TE1: ... How many objectives do we need for this lesson? Two. That's enough. You'll see why. Ok, in the information gap activity, you'll put students in pairs, like Student A and Student B, right? Then, you may assume that they can handle it on their own, but no, they'll be like "I don't like B, I want to be A" or "No, I am A, you're B." It takes forever. So one way is to stand in front of the students. Make sure you look into their eyes. Make sure they're looking at you as well. You look at the students who will be A, and then ask them to raise their hands. Then you move to the students who will be B, and ask them to put up their hands. You remind them, "Student A, hands up" and "Student B, hands up". It takes you forever. So that's why you can only do two lesson objectives. (TE2 Observation)

To further develop student teachers' CT, TE1 also built on the *exposing* stage from challenging her student teachers' understanding of real-world teaching with her own experience to *extending* their thinking by applying CT in a range of contexts. As such, TE1 incorporated materials such as listening texts from primary English textbooks into her course. This *extended* student teachers' experience and thinking about the issue of authenticity in language materials designed for students in the local context of which the learning culture was largely exam-oriented. For instance, she provided them with a conversation between a boy and his mother discussing whether the boy could attend his school's Christmas dinner at a hotel. After playing the well-structured, tidy and formal conversation, TE1 invited the student teachers to provide a critical analysis of the listening text based on their observations and experience of real-life communication, which required their use of the CT skills of analysis,

interpretation, evaluation, and explanation. The lesson except below showed how discussion unfolded as TE1 and the student teachers critiqued these particular interactions in the listening material: "Mom: When is it? Boy: We will have the dinner two days before Christmas. So that will be 23rd of December" and "Mom: How long will the dinner be? Boy: It will be from 6 p.m. to 10 p.m." To scaffold student teachers' analysis of the effectiveness of the conversation for learning, TE1 offered them a list of questions layered from WHAT to WHY and to HOW. Such questioning techniques served to stimulate student teachers' cognitive processes and engage them in higher-order thinking, which could enhance their CT skills of analysis, interpretation, evaluation, and explanation and strengthen their CT dispositions, particularly their alertness to opportunities to use and apply CT, in teaching.

> TE1: What else is unnatural?
> Student 1: The way the boy responded to questions was quite unnatural.
> TE1: Give me some examples.
> Student 1: "We will have the dinner two days before Christmas. So that will be 23rd of December."
> TE1: Exactly. Who talks like that? Usually you would just tell your mom the date, like "December 23rd". Anything else?
> Student 2: "from 6 p.m. to 10 p.m."
> TE1: Yes, when your mom asked "How long," you will respond with "two hours" or "three hours", not "6 p.m. to 10 p.m." That's unnatural. It's designed for a listening test, not for teaching real communication.
> (TE1 Observation)

Whereas TE1 drew on her teaching experience and used local language learning materials to create an authentic context for CT, TE2 made up for his student teachers' lack of teaching experience by providing them with hands-on learning experience. Such experiences allowed the student teachers to reflect and create lessons and materials to teach English reading with the use of educational technologies. Specifically, in the first half of the semester, TE2 devoted a lot of class time to coach student teachers to make their e-storybooks to teach specific grammar structure. During this process, the student teachers encountered various challenges as it was their first experience using educational technologies to create an e-storybook and writing a storybook (TE2 Interview). These challenges broadened their experiences by *exposing* them to real-life language

learning difficulties and complexities that school students might encounter. Furthermore, TE2 expanded on the exposing stage to cultivate the student teachers' CT through a continuous process that included both teacher feedback and whole-class discussions. To elaborate, TE2 provided each student teacher with individual feedback to help them revise their work, after which they had a whole-class discussion on issues that language teachers need to consider when developing teaching materials with educational technologies. The lesson excerpt below, as part of the discussion, evidenced how TE2 encouraged student teachers to reflect upon their own exposure to the messy learning process and analyze it using the framework of TPACK (i.e., Technological Pedagogical Content Knowledge), which served to *extend* their CT about language teaching, particularly the skills of analysis, evaluation, and explanation.

TE2: OK, now let's go through the TAPCK worksheet. I want to get one piece of analysis from each group. All your choice. Content, pedagogy or technology.

Student 1: Pedagogy. We used group work.

TE2: Group work. Thank you. What else?

Student 2: Content

TE2: Content, OK. What's the content?

Student 2: There were some tasks listed here for students to complete by themselves or in a group, like collaborating.

TE2: What were the tasks?

Student 2: I created a shared folder.

TE2: Create a shared folder, OK. Cool. Awesome. What else do we get here? Group three, what do you guys have?

Student 3: Technology. We made screen shot.

TE2: Screen shot. Nice.

Student 4: There was the teacher feedback class.

TE2: Yeah. Totally. So that is?

Student 4: Pedagogy?

TE2: Yes, thank you. It's not content. And what tools did I use to give you feedback?

Student 5: Google classroom.

TE2: Great. These are all the things that were happening in the lessons. The content and how we did it and the technologies that we were using are quite complicated. So don't think that they're just simple tasks. We have to support our students and help them figure these details out. Now, I'm going to have you guys do the next TPACK

analysis by yourselves (TE2 Observation).

In sum, the beliefs held by the language teacher educators prompted them to adopt the CT instructional strategies of exposing and extending in their teacher education classrooms. The transition from exposing student teachers to complex information and challenging their preconceptions to extending their thinking through various activities facilitated their ability to interpret, and critically analyze and evaluate the information, as well as explain their analysis. Such an approach also heightened their awareness of opportunities to use and apply CT in language teaching. These experiences underline the significance of the two CT instructional strategies in cultivating the development of CT abilities among student teachers.

4.3. Developing Student Teachers' CT about Language Teaching through Triggering and Guiding

The teacher educators' beliefs also played a role in fostering the development of student teachers' CT about language teaching through *triggering* and *guiding*, albeit less frequently than through exposing and extending. Such strategies were often integrated into their use of exposing and extending, exemplifying their endeavor to integrate different CT instructional strategies to nurture future language teachers with a CT-oriented approach. For example, the listening text of the conversation between the boy and his mother, besides being meaningful input that extended student teachers' experience within a context (i.e., local exam-focused English learning context in Hong Kong), also served to *trigger* their interest and curiosity in thinking about certain issues in language learning and teaching. Specifically, it was observed that after listening to the inauthentic English conversation, the student teachers became visibly enthusiastic, eagerly murmuring and exchanging thoughts about it. The stimulated atmosphere in the classroom indicated the student teachers' increased interest or provoked thoughts about the listening text, which then paved the way for them to engage in the analysis and discussion about the issue of authenticity in English learning materials required for CT with TE1, as presented in the above section (TE1 Observation). The triggering stage, which motivated the student teachers to deeply engage with the activities through the inclusion of topics of interest, laid the foundation for the exposing and extending stages. Together, the various stages collectively

contributed to the enhancement of students' CT skills, encompassing analysis, interpretation, evaluation, and explanation, as well as their CT dispositions, such as alertness to opportunities to use and apply CT.

Throughout the course, TE1 occasionally injected humor to *trigger* students' interest and curiosity as she guided them to analyze English learning materials used in grade one classrooms in local primary schools. The lesson excerpt below demonstrated that TE1's humor, evidenced by the laughter of her student teachers, engaged them emotionally. This emotional engagement, combined with the formal teacher learning content conveyed through extending (i.e., TE1's sharing of her frontline teaching experience), constituted an important part of student teachers' learning to become CT-oriented language teachers.

> TE1: ... The diversity is huge. Some P1 kids can read and write. Others can't. Don't expect that everyone can write and spell. They all come from different kindergartens. Don't blame them for that. It's not their problem. In September, they may spend a lot of time revising A to Z. Give them some time. By November, everything will be alright. Give them two months and they'll be like human beings (Laughter from TE1 and student teachers). (TE1 Observation)

In fact, as TE1 attempted to trigger her student teachers' curiosity by exposing them to real language teaching scenarios and extending their experience through personal stories and school teaching materials, she was also *guiding* them to reflect on and analyze a variety of issues in language teaching. Such a guiding stage then prompted the student teachers to think critically about practical issues in real-life teaching, thus contextualizing theoretical knowledge into practical applications. In the lesson excerpt above, for example, she pointed out the issues of student diversity and differences, the quality of early-childhood education, and teacher expectations. Such guiding strategy was, however, more implicit than explicit, as she did not allocate time for student teachers to discuss these issues or involve them in taking stances or justifying their viewpoints. TE1 appeared to be accustomed to providing such implicit guidance, as similar patterns emerged in all her observed lessons.

TE2's effort in coaching student teachers to make their own e-storybook (as an instance of extending of their CT about teaching English reading with educational technologies) was also an attempt to *trigger* their

motivation in reflecting upon teaching and connecting what was learned with their future teaching. As he elaborated, teaching experience was crucial for one to use their CT skills to evaluate their lesson designs, activities, and procedures. However, without much teaching experience, student teachers may struggle to perceive the relevance between the theoretical content learned in the course and their own professional development, potentially leading to superficial lesson design (TE2, Interview). To address these problems, TE2 created teaching experiences for his student teachers, hoping to trigger their motivation to use the CT skills of analysis and evaluation to connect the learned knowledge with their own lesson plan.

> I was trying to simulate the experience by having them do those learning tasks themselves. I was trying to get them into the shoes of the learners and to see the different steps they must negotiate to complete the tasks. If they understand the factors involved in the process of developing literacy skills [as students], they can design their own lessons [as teachers]. They would be more able to think about the process and more engaged in considering different factors when they make their own materials and design their own activities. (TE2 Interview)

Unlike TE1 whose use of guiding strategies was implicit, TE2 more explicitly *guided* his student teachers to critically analyze, evaluate, and explain their lesson design and activities, which evidenced his effort to promote the use of these CT skills among his student teachers. As observed, before they used the TPACK framework to analyze and evaluate their experience of making an e-storybook (as presented above), TE2 provided his student teachers with a set of self-reflection questions and allowed them time to explain their own created teaching materials based on the given questions with their group members and the whole class (TE2 Observation). Such reflection questions facilitated students' idea exchange and feedback, which broadened their understanding of the subject at hand and boosted their cognitive capabilities. Moreover, TE2 explicitly encouraged his student teachers to develop their own teaching strategies based on their experience and judgment, which revealed his attempt to guide student teachers to become critical thinkers in learning to teach. Specifically, TE2 encouraged them to practice using the CT skills of analysis, evaluation, and interpretation to design their own lessons. By illustrating how different teachers use their own CT to make different pedagogical

decisions, TE2 also highlighted that teaching offers opportunities for CT, reflecting his attempt to promote his student teachers' disposition toward CT, including their alertness to opportunities to use and apply CT in their professional practice.

> TE2: ... Different teachers take instructions very differently. And this is the nicest thing about teaching. It is that when you have these units, it is up to you to choose whatever your students need. You can see that every teacher is interpreting that information in a different way, and this is the fun part about teaching. For designing an English lesson, try to think about the bits and pieces students need. As for how you put them together, as long as it makes sense, it is good. (TE2 Observation)

TE2 was also seasoned at using questioning to guide student teachers to think about the choices they have in designing their own lessons and arranging activities, as shown in the lesson excerpt below. These questions fostered CT by involving students in analyzing the scenario, evaluating possible options and making informed judgements about the most appropriate choice. In this excerpt, he also deliberately shifted between different personal pronouns (i.e., I, you, they), to inject a sense of teacher identity into student teachers' mind.

> With that second activity, can a teacher just give students those sentences and give them the video to watch? Or does it make more sense to watch the video first, and then organize the sentence? This is something I want you to think about because this is going to shape how you make activities. Do you want to give them the activity first, and then give them the input? Or you want to give the input first, and then give them the activity? (TE2 Observation)

Despite the teacher educators' efforts to foster CT development among the student teachers, they remained unsure about the efficacy of their instruction without purposively comparing their student teachers' CT skills, such as analysis, evaluation, and explanation, or their dispositions toward CT at the start and the end of the course. Nevertheless, insights emerged from their observations that some student teachers increasingly demonstrated an improvement in integrating CT into their own learning as reflected in their lesson plans, while a minority of the students did not show a deep level of CT in their assignments (TE1 Interview). Although

extensive modeling of CT was necessary to further aid these student teachers' CT development (TE2 Interview), the pedagogy courses had already been packed with dense content and knowledge, leaving teacher educators little time to tackle CT and CT instruction (TE1 Interview). Moreover, they observed that some student teachers lacked CT, particularly in recognizing opportunities to use and apply CT. This was attributed to their habitation of "getting the correct answer" instead of creatively expressing their own opinions, a tendency reinforced by the exam-oriented Hong Kong educational context (TE1 Interview). With limited opportunities to exercise CT in their earlier years of language learning, it was probably difficult for these future language teachers to immediately foster and practice CT in their process of learning to teach. Additionally, most of their student teachers lacked practical language teaching experience, which can hinder their ability to analyze and evaluate different aspects of language teaching and learning to make informed decisions, which are crucial conditions for the development of CT (TE2 Interview). To address these challenges in fostering pre-service language teachers' CT skills and dispositions, TE2 firmly believed in the importance of systematically and explicitly integrating CT into pre-service language teacher education through comprehensive research and curriculum reform:

> What might be helpful is doing research to identify explicit strategies for modelling critical thinking in language teaching and to examine if that has an impact on student teachers applying it themselves. We may need to develop a framework for these future English teachers to become more developed critical thinkers (TE2 Interview).

To this end, it is evident that the teacher educators' accumulated experience through continuous practice of CT reinforced their beliefs about the significance of equipping students with these skills and dispositions. Simultaneously, the ongoing practice raised their awareness of the CT instructional techniques that could further develop their students' CT skills. This process exemplifies the symbiotic relationship between language teacher educators' beliefs and practice in integrating CT and its instruction within their teacher education classrooms.

5. Discussion
The two language teacher educators strongly believed that CT is important in language learning, teaching, and teacher education. As such, their beliefs

drove their actions, leading them to resort to the CT instructional strategies of exposing, extending, triggering, and guiding in their own teacher education courses, hoping to gradually influence their student teachers and help them become CT-oriented in language teaching, which may in turn benefit their future students. While previous studies mainly focused on teachers' CT practices in language classrooms (Dwee et al. 2016; Toshpulatova & Kinjemuratova 2020), the present study targeted language teacher educators' CT instruction and examined how they tried to influence student teachers' CT during their journey of learning to teach. The teacher educators' CT instructional strategies can be mapped with those identified in the empirical studies on language teachers. This alignment of findings suggests that the CT instructional techniques of triggering, exposing, guiding, and extending are not only suitable for teaching students to think critically about learning, but also applicable for teachers to adopt a critical perspective in their own development of knowledge and skills in teaching.

In the teacher educators' practices, the CT skills of *analysis, explanation*, and *evaluation* as well as the CT dispositions such as *alertness to opportunities to use and apply CT* (Abrami et al. 2015) were incorporated throughout their courses. This is evidenced in the discussion and analysis of the issue of authenticity in a listening text used in primary school language textbooks in TE1's lessons as well as the explicit encouragement of student teachers to design their lessons and activities based on their own judgement and experience in TE2's lessons. The two teacher educators' emphasis on certain CT skills in preparing pre-service language teachers to teach is consistent with that of previous studies which revealed that some core concepts related to CT (*analyze* and *create*) were valued and promoted in language education (Cáceres et al. 2020). These findings appear to testify to the subject-specific nature of CT. However, arriving at a definitive conclusion requires further systematic research on this topic, particularly a comparison of CT instruction between different disciplinary areas.

Whereas the four CT instructional strategies of triggering, exposing, guiding, and extending have been identified in Yuan et al.'s (2022) systematic review, the findings of this study illustrate their integration and application in pre-service language teacher education. For pre-service teachers lacking teaching experience, besides formal learning of theories and techniques of teaching, it is crucial to provide them with rich and

meaningful teaching opportunities that allow them to reflect and test their developing understanding of teaching. To address this, the two teacher educators in this study resorted to a combination of the CT instructional strategies of *exposing* and *extending*. This application of exposing and extending was implemented in two ways. One was to provide student teachers with real teaching scenarios and experience, enabling them to engage in thoughtful analysis and reflection, as in TE1's sharing of frontline teaching experiences (i.e., primary students' diversity in language learning due to different quality of early-childhood education), direct modeling of teaching approaches (i.e., arrangement of pair work in information gap activity), and discussion of language learning materials from local schools (i.e., an inauthentic listening text made for tests). The other approach was to provide student teachers with firsthand learning experiences and opportunities for reflection, aiming to deepen their understanding of language learning and teaching through direct experience. The former approach placed student teachers in the role of teachers and encouraged them to think critically about teaching, drawing on the invaluable experience of the teacher educators, whereas the latter approach facilitated a transition for student teachers from being learners to becoming teachers themselves. This shift enabled them to deepen their understanding of teaching through personal experience.

The findings also showed a variety of techniques that can be used to *trigger* pre-service language teachers' CT about language teaching. These include TE1's utilization of real language learning materials from local schools, occasional integration of humor with formal content, and TE2's facilitation of student teachers' experiences of learning as students, followed by reflection upon these experiences in the roles as future teachers. Triggering, as implied by the term and its definition (i.e., arousal of students' curiosity, interest, and motivation for delving into certain issues in language classrooms through teachers' selection of learning topics; see Cáceres et al. 2020; Sadeghi et al. 2020), can be a crucial initial step in initiating students' CT. In the context of pre-service teacher education, as revealed by the findings, triggering does not necessarily need to be the initial step for motivating student teachers to engage in CT. It can occur while or after student teachers have been exposed to certain language teaching scenarios or have undergone an extended learning experience facilitated by their teacher educators through deliberately designed learning tasks and assignments. That is, while triggering is an important mechanism in promoting pre-service language teachers' CT

about language teaching and learning, it does not happen alone and is often integrated with the other key processes (i.e., exposing, extending). It is important to note that this characteristic of triggering is specific to the group of pre-service language teachers within the Hong Kong educational system and other similar EFL contexts. It may not apply to teacher education involving different groups (i.e., in-service teachers) in other contexts, which requires further investigation.

In *guiding*, language learners are supported to take a stance towards certain issues, evaluate their stance, and justify their stance (Toshpulatova & Kinjemuratova 2020). The findings revealed that the two teacher educators perceived this CT instructional strategy differently. Whereas TE1 tended to guide her student teachers to think about a variety of issues in language teaching in an implicit manner, largely through her verbal explanations, TE2 chose a more explicit and student-centered approach by giving student teachers self-reflection questions and allocating time for discussions. These different repertoires of techniques in CT-oriented teacher education suggest that teacher educators' practice is idiosyncratic and pertains to their personal, situated context of teacher learning and previous experience. TE1, as a Hong-Konger, received education in the local educational system dominated by an exam-focused learning culture where teachers spend time feeding students knowledge and skills. TE2, being a native American, was used to learning in an educational system where students are afforded ample time for extensive interaction, reflection, and expression of ideas. The varying educational backgrounds and experiences of the two teacher educators may influence their understanding of CT and account for their distinctive approaches in guiding their student teachers in the process of learning to teach with criticality. It would be interesting to examine the influence of culture on the learning and teaching of CT as a potential avenue for future research.

Overall, it is particularly compelling that the two teacher educators' approaches for fostering the four instructional CT strategies, aimed at helping pre-service teachers become CT-oriented practitioners in their future language classrooms, were intertwined with their foundational beliefs about the importance of navigating one's teaching practice with deliberate reflection and reasoning. The findings contribute to enriching the current understanding of how the four CT instructional strategies the associated techniques work in the specific context of EFL teacher preparation.

6. Implications and Conclusion

Testifying to the pivotal role of CT in language learning, teaching, and teacher education, the findings provide insights for stakeholders in pre-service language teacher preparation. First, language teacher educators have to prioritize the provision and simulation of real-life teaching scenarios or learning experience for student teachers to find meaning and personal relevance in learning to teach. This supports them to exercise CT in designing their own lessons and activities, and prompt them to embrace a CT-oriented pedagogy. The CT instructional strategies of exposing and extending, as adopted by the two teacher educators in this study, can be a valid starting point. Such use of exposing and extending may also help trigger student teachers' interest and motivation in delving into critical issues in language teaching. Moreover, student teachers need support and guidance from their teacher educators to think through issues in language teaching and develop their personal, practical theories of teaching. For example, this need was addressed through the efforts of TE1 and TE2, who provided student teachers with real-life teaching scenarios, opportunities for self-reflection via written inquiries and group discussions, hands-on learning experience, as well as direct modeling. While these techniques and learning experiences were designed particularly for the group of pre-service language teachers in the EFL context of Hong Kong, language teacher educators in other contexts would need to exercise their CT and adopt suitable learning designs for their student teachers to experience teaching with CT. As they tailor their teaching to their student teachers' backgrounds and needs, they can select and blend the CT instructional strategies of triggering, exposing, guiding, and extending to effectively fulfill their purposes.

At the level of language teacher preparation programs, it is crucial not only to integrate CT into their objectives but to support all teacher educators and student teachers in embracing CT. In TE1 and TE2's program, although CT was explicitly listed as one of the teacher education objectives, there were no explicit guidelines on its implementation or assessment. This approach granted language teacher educators the freedom and autonomy to integrate CT into pre-service teacher preparation according to their discretion, but it also resulted in a lack of consistency in instructional methods and an absence of standardized measures for assessing learning outcomes. For instance, beyond their own observations,

the two teacher educators could not determine how their implementation of CT impacted their student teachers' CT development. This indicates that student teachers' needs might not be fully identified, which could hinder the effective integration of CT into the teacher education program and resulted in missed opportunities for enhancing teaching effectiveness and student teachers' learning outcomes. As TE2 cautioned, to more effectively and successfully integrate CT into language teaching and teacher education, systematic planning and implementation of CT instructional design and strategies is essential. Language teacher preparation programs need to take this into consideration when planning their curriculum. Moreover, to support teacher educators, and consequently their student teachers, in effectively integrating CT, the university could provide ongoing professional development opportunities where teacher educators explicitly learn about strategies for incorporating CT into their classrooms and methods for assessing student teachers' CT-integrated teaching practices. These opportunities would help teacher educators refine their CT skills and dispositions and systematically implement CT-integrated instruction, eventually benefiting their student teachers' professional development.

Given the intention to dig deep into language teacher educators' beliefs and practices regarding CT and its instructions in teacher preparation, and considering the constraints of time and manpower, this study recruited only two language teacher educators and examine the issue from their perspectives. To address these limitations, future research can expand the current understanding on CT-integrated teaching by recruiting a larger and more diverse group of participants. This would include participants with varied educational backgrounds and different experience with CT-integrated teaching, as well as diverse perspectives from teacher educators, student teachers, school teachers, and school leaders. Cultivating CT skills in future language teachers and helping them to foster CT in their students may pose challenges given the packed schedule and student teachers' limited teaching experience, but it is a worthwhile effort embraced and implemented by many language teacher educators and programs across different contexts. With increasing attention on this topic, it is anticipated that an increasing number of language teachers would embrace a CT-oriented language pedagogy, ultimately benefiting learners in their classrooms.

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Appendix A. The Interview Protocol

1.　　How do you feel about your teaching in the past semester? Any critical incidents?

2.　　How do you define critical thinking (CT)? What is the role of CT in English teaching/learning?

3.　　Is CT important for your teacher education work? Why?

4.　　Did you try to help your students develop CT about their own language learning? How?

5.　　Explicitly or implicitly, did you try to help your students learn to teach CT in English lessons (i.e., integrating CT into English teaching)? How?

6.　　In your view, do students have enough opportunities to learn about integrating CT and CT teaching in English teaching? Why? Any examples?

7.　　In the interview, some students said that the CT component is implicitly embedded in most of the courses instead of explicitly mentioned. What is your take on this issue?

8.　　In your view, what can teacher educators do to support students' development of CT and CT teaching?

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