UNIVERSITI TEKNOLOGI MARA

EXAMINING EFL TEACHERS' KNOWLEDGE, MOTIVATION, AND PRACTICES OF CRITICAL THINKING IN BANGLADESHI TERTIARY INSTITUTIONS

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NOUSIN LAILA BRISTI

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of the requirements for the degree of
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CONFIRMATION BY PANEL OF EXAMINERS

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ABSTRACT

Critical thinking, as one of the most in-demand employability skills in the context of the Fourth Industrial Revolution, has become a primary educational goal in higher education worldwide. Tertiary educators are the center of this global educational transformation. However, Bangladeshi tertiary EFL teachers' inadequate knowledge, motivation, and practices in critical thinking contribute to graduate unemployment, while reliable data on these remain scarce. Consequently, the present study explored Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation and practices, filling the existing gaps to systematically address the associated challenges. The study employed an exploratory sequential research design. Twelve tertiary EFL teachers' critical thinking practices and knowledge, related to the first two research questions, were investigated with a qualitative approach, using a semi-structured classroom observation protocol and a semi-structured interview protocol, respectively. Classroom observation data were collected through field notes and video recordings during six tertiary EFL teachers' classes. Conversely, of the 12 interviews, 8 were conducted face-to-face and 4 via Zoom. These EFL teachers belonged to five Quacquarelli Symonds (QS)-ranked public and private Bangladeshi universities in Dhaka. Both classroom observation and interview data were analyzed using hybrid thematic analysis. The third research question was addressed using a survey questionnaire which was developed based on the qualitative themes and implemented among 140 EFL teachers from ten South Asian QS-ranked universities in Dhaka. The qualitative and quantitative findings were triangulated to achieve validity and gain a comprehensive understanding of the research problem. Qualitative findings show that Bangladeshi tertiary EFL teachers' classroom practices are only partially aligned with critical thinking development goals, as they demonstrated unfavorable gestures, insensitivity and disrespect, and limitedly encouraged risk-taking, problem-solving, and collaborative learning, sought justification, facilitated students' opinions and questions, and modelled higher-order thinking. However, they showed supportive gestures and provided constructivist feedback to the learners. Quantitative findings show that although tertiary EFL teachers' critical thinking knowledge, motivation, and practice are positively correlated with one another, their knowledge shows a stronger correlation with their practice than their motivation. Based on the findings of the three research questions, the study has proposed a framework for in-service tertiary EFL teachers' professional development in critical thinking instructions. The infusion of the KAP model and the self-determination theory in the framework addresses Bangladeshi tertiary EFL teachers' holistic professional development in critical thinking instruction. It will not only provide support for improving their knowledge and practices of critical thinking but also sustain their motivation to teach critical thinking and continuous professional development in the field by ensuring a critical thinking culture within the institution. Additionally, the study provides suggestions for Bangladeshi undergraduate EFL learners, the national educational authority and other stakeholders to contribute to the effective teaching of critical thinking.

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LIST OF SYMBOLS

Symbols

^{o}C	Degree Celsius
ft^2	Square Feet

LIST OF ABBREVIATIONS

Abbreviations

CCTDI	California Critical Thinking Disposition Inventory
CCTST	California Critical Thinking Skill Test
CK	Content Knowledge
EBTD	Evidence-Based Teacher Development
EFL	English as a Foreign Language
EIA	English in Action
ELT	English Language Teaching
ESL	English as a Foreign Language
F	Female
GTM	Grammar Translation Method
H	Hypothesis
HC	Human Capital
HEQEP	Higher Education Quality Enhancement Project
HOT	Higher Order Thinking
HSC	Higher Secondary Certificate
ICT	Information Communication Technology
IDC	Interview Deductive Code
IQAC	Institutional Quality Assurance Cell

IRB	Institutional Review Board
KAP	Knowledge, Attitude and Practice
KE	Knowledge Economy
LOT	Lower Order Thinking
M	Male
NAEM	National Academy for Educational Management
NEP	National Education Policy
NUB	National University of Bangladesh
ODC	Observation Deductive Code
PCK	Pedagogical Content Knowledge
PD	Professional Development
QS	Quacquarelli Symonds
RMG	Ready-Made Garment
RO	Research Objective
RQ	Research Question
SDL	Self-Directed Learning
SDT	Self-Determination Theory
SIC	*sic erat scriptum*
TESOL	Teaching English to Speakers of Other Languages
UGC	University Grants Commission
ZPD	Zone of Proximal Development

CHAPTER 1
INTRODUCTION

1.1 Overview of the Chapter

Chapter 1 embarks on the background of the study by introducing English as a Foreign Language (EFL) teachers' knowledge, motivation, and practices of critical thinking as the main variables of the study. This chapter includes the context of the research. The chapter also presents problem statements that highlight the lack of knowledge about critical thinking in the Bangladeshi tertiary English Language Teaching (ELT) context and deficiencies in the existing theoretical and methodological considerations. Additionally, this chapter discusses the study's significance, scope, and limitations. Finally, the chapter ends with a list of the key terms used in the study.

1.2 The Economic Condition of Bangladesh

The Bangladeshi economy is among the fastest growing in the world (Bangladesh Investment Development Authority, 2023). It is expected that the economic growth rate will surpass that of India and China, two Asian superpowers (Dhaka Tribune, 2023; Mujeri, 2021; New Age Bangladesh, 2023b). Nonetheless, it is going through the toughest period ever (Hashim, 2023; Hye, 2023; The Daily Star, 2023), being affected by inflation, global economic fluctuations, slow remittance, lack of foreign exchange reserve, poor governance, careless policy implementation, and lack of necessary reforms (Kibria, 2023; The Daily Star, 2023). More seriously, the country's GDP fell by 0.1 percent in FY23, after rising by 7.1 percent in FY22 (bdnews24.com, 2023; The Business Standard, 2023). The cherry on the cake is that, though the poverty rate has decreased, the gap between the poor and the rich is at its highest level on record (Billah & Hassin, 2023; Chowdhury & Hossain, 2018; Jamal, 2023; Pandit, 2022; Rozario, 2019). The country's economy is in a turbulent state, which the government needs to address (Raihan, 2023).

Apart from government initiatives, Bangladeshi university teachers can significantly contribute to the country's economic development by participating in the

Knowledge Economy (KE) through more frequent research (Hassan, 2023; Sadeque, 2023), as research creates new knowledge (Pajo, 2017). The knowledge economy refers to an economic system whose affluence and militancy are increasingly dependent on the creation and manipulation of knowledge as a resource of production (Hogan, 2011). It is an economy driven by ideas and knowledge rather than physical resources. In this economy, creativity, technology-equipped industries, and their produced commodities play the primary role in building more job posts and warranting a higher standard of living (Hollander, 2009). In this connection, Bangladeshi public university teachers, despite being the country's top intellectuals, are not adequately focusing on research and on developing research skills among learners, leading the country to fall behind in the competition for a knowledge-based economy (Basher, 2019). Critical thinking is crucial for conducting research (Wallmann & Hoover, 2012), so when teachers engage in research activities, they also engage in critical thinking practices. According to the World Knowledge Index 2022, Bangladesh ranked 105th among 132 countries sector and 111th in research and development (Knowledge For All, 2022). Thus, Bangladeshi university teachers can be the key to increasing research practices and eventually creating HU for economic growth.

Unfortunately, inadequate financial support severely limits Bangladeshi tertiary educators' research involvement. More research funding is required to realize the potential of university teachers (Bangladesh Sangbad Sangstha, 2022; Jasim, 2022b). Conversely, universities spend little on research (Andaleeb, 2022; Jasim, 2022a). Particularly, although public universities are receiving substantial research funding, they are not spending it on research (New Age Bangladesh, 2023a). Possible reasons include that Bangladeshi universities are not research universities but teaching universities, and that teachers are not interested in or accustomed to research practices (Andaleeb, 2022; Morshed et al., 2023). Some steps, like faculty appreciation, faculty incentives, establishing research universities, and enhancing the government's patronage, need to be taken to boost the research culture in Bangladeshi universities (Andaleeb, 2022). Moreover, considering well-developed fields as a research focus, ensuring research-friendly environments, considering the availability of resources, accelerating academy-industry collaboration, taking innovative initiatives, and aiming for overall national-level comprehensive plans need special attention (Andaleeb, 2022).

1.3 Background of the Study

Higher education in Bangladesh has grown exponentially and steadily in terms of the number of universities (Anwaruddin, 2013a; Ashraf et al., 2009; Chowdhury et al., 2020; Ehsan, 2021; Mazumder, 2014; Ramírez & Haque, 2016) and overall student enrollment (Boye & Mannan, 2014; Chowdhury et al., 2020; Rahman et al., 2019; Monem & Baniamin, 2010) over the past 30 years. Currently, there are 54 public universities (University Grants Commission of Bangladesh, 2023a) and 112 private universities (University Grants Commission of Bangladesh, 2023b). In contrast, in 2010, the number was 26 public and 54 private universities (Monem & Bainamin, 2010). Additionally, 2,385 colleges affiliated with the National University of Bangladesh (NUB) (National University Bangladesh, 2023) operate under the Secondary and Higher Education Division of the Ministry of Education, accommodating 62% of tertiary learners (Chowdhury et al., 2020). The country's mainstream higher education system is shown in Figure 1.1.

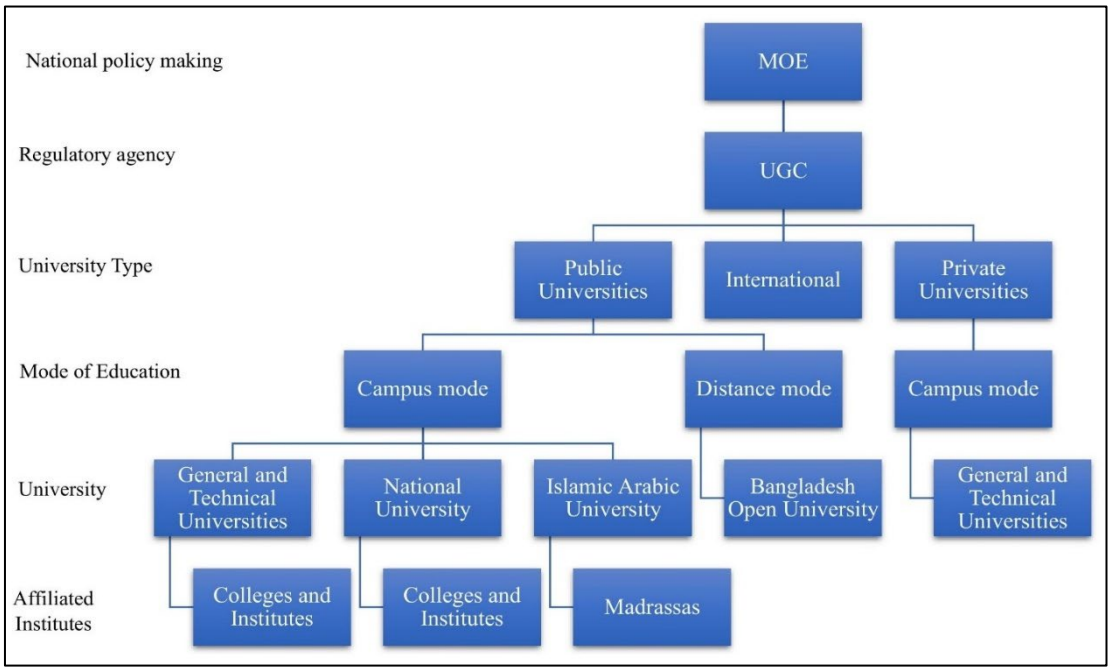

Figure 1.1 Types of Higher Educational Institutions in Bangladesh (Chowdhury et al., 2020)

Figure 1.1 (Chowdhury et al., 2020) elucidates Bangladesh's general higher education system. All private universities and autonomous public universities, such as

Dhaka University, are managed by the Ministry of Education under the supervision of the University Grants Commission of Bangladesh (UGC). UGC has taken steps to establish an Institutional Quality Assurance Cell (IQAC) (Ministry of Education, 2015) under the Higher Education Quality Enhancement Project (HEQEP) (University Grants Commission of Bangladesh, 2018). The cell has been actively monitoring the teaching and administrative operations of Outcome-Based Education in universities (Jasim, 2021a). There are three major categories of these universities: public and private universities, and National University-affiliated colleges and institutes. All these universities offer remedial English courses to help learners cope with the English-medium education system.

Accordingly, all public and private universities offer English proficiency development courses in the first year of undergraduate programs. Several courses are offered in consecutive semesters or trimesters (University of Dhaka, 2016; North South University, 2015; University of Liberal Arts Bangladesh, 2023b). Usually, students get 60 hours of lectures each semester for each course (University of Dhaka, 2016; Jahangirnagar University, 2023) and 36 hours of lectures per trimester (North South University, 2023a), 40-41 credit hours for foundation courses (Independent University Bangladesh, 2022) and 42 hours for three-credit courses in some cases (Northern University Bangladesh, 2020). These courses are three-credit, meaning students attend two classes per week, each for 1.5 hours. However, at Dhaka University, each class lasts 1 hour, and the course carries four credits (University of Dhaka, 2016). Thus, credit hours, class duration, and lecture hours vary from institution to institution according to their distinctive policies.

In line with the urge for 21st-century teacher development, the University Grants Commission has taken steps to establish an IQAC under the HEQEP (Ministry of Education, 2015; University Grants Commission of Bangladesh, 2018). IQAC has organized training programs and workshops for in-service university teachers on outcome-based curricula at most public and private universities in Bangladesh (American International University-Bangladesh, 2020; BUET, 2017; East West University, 2019; Independent University Bangladesh, 2019; University of Dhaka, 2022). In these training programs, faculty members from all disciplines were trained to integrate Bloom's taxonomy into their curricula. Additionally, UGC plans to establish a teacher training institute for public and private university teachers (Jasim, 2021b).

Likewise, the National Academy for Educational Management (NAEM) organizes regular training and workshops for colleges under the NUB. Although the Bangladesh government organizes training programs for secondary EFL teachers (Choudhury, 2022), none are available for university teachers.

Moreover, many Bangladeshi universities are now offering Teaching English to the Speakers of Other Languages (TESOL) programs (BRAC University, 2022; East West University, 2022; North South University, 2023b; Dhaka University, 2023; University of Liberal Arts Bangladesh, 2022) for developing tertiary EFL educators' expertise, and some international Professional Development (PD) courses (British Council, 2023a; INTESOL Worldwide, 2019; U.S. Embassy in Bangladesh, 2021) are accessible for both pre-service and in-service tertiary EFL teacher development to enhance Human Capital (HC) in Bangladesh. Human Capital refers to the accumulation of a person's knowledge, skills, and personal qualities that enable them to remain productive. For example, formal education and work experiences are components of HC (OECD, 2020). HC is the skills, expertise, and knowledge that an individual gathers for personal welfare and better job opportunities (UNICEF Office of Global Insight & Policy).

In addition, a few specialized training programs are available for in-service EFL teachers (UK Bangladesh Education Trust, 2021). Although critical pedagogy is a key to socio-economic development (Suzani, 2018), none of the universities is offering pre-service ELT courses on critical pedagogy (BRAC University, 2017; University of Dhaka, 2016; East West University, 2023; Jahangirnagar University; North South University, 2023a). Since only a few institutes offer these courses, they are inadequate to meet the demand of the growing number of teachers and students.

Besides, according to the National Education Policy (NEP) 2010, universities are supposed to arrange teacher development training programs, which are not being implemented properly (Ministry of Education, 2010). Unfortunately, the opportunities for professional development of Bangladeshi tertiary educators are inadequate (Ahmed, 2024; Islam, 2024; Raqib, 2019). Moreover, the absence of pre-service training and teachers' traditional educational backgrounds force them to adopt teacher-centered classroom practices, which hinder the promotion of critical thinking (Chowdhury, 2016; Raqib, 2019). Nevertheless, Bangladeshi tertiary educators engage in internet-based personal professional development activities (Bristi, 2014; Shohel et al., 2022) to ensure

newfangled learning goals. Since training alone cannot guarantee sustained professional development, teachers must keep their skills and knowledge up to date through self-directed learning (Karlen et al., 2023; Bhatt, 2021; Vadivel et al., 2021).

Despite the institutional reforms and professional development initiatives, the development of critical thinking among Bangladeshi undergraduate EFL learners remains uncertain. With the implementation of the OBE curriculum and the growing complexities of communications, integrating critical thinking into tertiary EFL instruction has become crucial. However, the effective integration of critical thinking largely depends on EFL teachers' knowledge, motivation and practices of critical thinking. In the Bangladeshi tertiary context, where teacher-dominated and rote-learning-oriented education dominate, investigating tertiary EFL teachers' understanding, motivation and practices of critical thinking has become an important area of investigation.

1.3.1 English as a Foreign Language in Bangladesh

English is considered a foreign language in Bangladesh (Ara, 2020; Hasan, 2022; Rahman et al., 2019; Shanta, 2017), as there is no official second language (Ara, 2020; Shanta, 2017). However, the classification of English as either a second or foreign language in Bangladesh remains debatable to its speakers (Ara, 2020; Rahman & Pandian, 2018). Especially following the Bengali language movement in 1952, the Bengali people have an emotional tendency to prioritize the Bengali language over English. Despite its disputable status, English plays an immense role in almost every aspect of the citizens' lives (Ara, 2020; Rahman et al., 2019).

A foreign language is one whose use is limited to the classroom and which is mainly used for academic purposes and not frequently used in social settings, for example, English in China and Pakistan (Rahman & Pandian, 2018). Conversely, a second language is one commonly used in public places and in parliament, such as English in India. However, the status of English in the Bangladeshi language policy is confusing. Recently, the Bangladeshi government approved English as a second language in the national education policy in 2010 (Rahman & Pandian, 2018). In contrast, the National Education Commission treated it as a foreign language in 2003 (Rahman et al., 2019). In addition, though English education is compulsory in

Bangladesh from primary to university levels, it fails to adequately help learners communicate in English, as there is a lack of effective methods for teaching and learning a second language (Shanta, 2017). Furthermore, English symbolizes high status and prestige in Bangladeshi society. An individual with a good command of English is considered a smart person **(**Hasan, 2022; Shanta, 2017). This evidence shows that English is recognized as a foreign language in Bangladesh, as its speakers are accorded prestige.

1.3.2 Importance of English in Today's Globalized World

The definition of globalization from a linguistic perspective is best provided by Blommaert (2010), who defines globalization as the intense movements of money, products, people, pictures, and discourse across the globe, which are operated and navigated by Information and Communication Technologies (ICT) that have led to novel global activity, organization of community and culture. Thus, the dominance of English in science, scholarship, and education is most profoundly felt (Altbach, 2007). Besides, as most studies are conducted in English-speaking countries and most of the world's high-ranking journals are published in English, people from non-English-speaking countries need to write and publish articles to gain access to the international knowledge community. Simultaneously, eminent English-speaking research scholars, due to their high accessibility, exert greater influence on others' research. Thus, English is dominating the world of research and the knowledge society (Altbach, 2007).

Therefore, the increasing digital connectivity of the global student community and rising student mobility (Bianco, 2014) are driving the adoption of English-speaking curricula worldwide, including in Asia (Lin & Lei, 2021; Rose, 2019; Shao & Rose, 2022). Hence, the need to develop English curricula and courses is becoming increasingly important as multinational companies grow and learners seek to work for them. In line with this, most private universities use English as a medium of instruction, and education is mobilized as many universities set their international campuses in non-English speaking countries (Altbach, 2007). Thus, the relevance of teaching and learning English is growing faster than ever.

The English language has high value in Bangladesh's economy. English proficiency is a linguistic capital that confers many materialistic benefits, such as

broader job opportunities, access to knowledge, higher education, a better understanding of the world, and travel opportunities for Bangladeshi individuals (Hamid, 2015; Roshid, 2018). Specially, in South Asian countries like India and Pakistan, individuals with better language proficiency can enjoy highly paid jobs. Asian countries with more English-speaking populations can grow economically faster and contribute to GDP growth, as English language proficiency can increase an individual's hourly income by 34% (Erling, 2017). Moreover, English proficiency enhances job opportunities due to its high demand in the context of rising international trade and business (Ali et al., 2023; Roshid, 2018). Therefore, developing English proficiency purports to develop the HC of a country (Ali et al., 2023; Hamid, 2015; Roshid, 2018).

The growing importance of English proficiency in Bangladesh indicates that EFL teachers should integrate critical thinking into language instructions. Given the global demand for English proficiency and HC development, English proficiency has gained paramount consideration across all educational sectors in Bangladesh (Ali et al., 2023; Hamid, 2015). Even many foreign investments are aimed at improving the quality of English teaching and learning in the country's rural areas (Ali et al., 2023; Erling, 2017). For example, English in Action (EIA) is a UK government-funded project to enhance the professional effectiveness of Bangladeshi secondary EFL teachers (Karim et al., 2017; Power et al., 2012). This type of aid is believed to emphasize the significance of English proficiency as HC in the globalized world (Ali et al., 2023). However, the strong emphasis on English proficiency indicates that EFL teaching should develop globally competitive HC equipped with critical thinking. Accordingly, EFL teachers need to enhance not only learners' communicative competence but also to foster their critical thinking to enable the learners to effectively participate in the knowledge economy. In this context, EFL teachers' own knowledge, motivation and practices of critical thinking become essential in the effectiveness of English education in Bangladesh.

Especially since Bangladesh's economic development is heavily dependent on foreign remittances and the Ready-Made Garment (RMG) sector, English is also vital to the country's migrant workers. A study by Erling et al. (2015) found that Bangladeshi migrant workers in Middle Eastern countries consider English-language proficiency essential when working in companies where communication is in English. Moreover, some participants reported that language was crucial to their career success abroad. In

addition, Roshid (2018) notes that English plays a significant role in securing the desired jobs for RMG professionals. While it allows them to negotiate successfully with their global business partners, explore new international markets, convince buyers, and secure orders, their lack of English proficiency prevents them from advancing in their careers despite excellent skills in the garment sector. This indicates that English proficiency has become an integral part of Bangladesh's economic competitiveness and professional achievements in global industries. Therefore, English education should not focus solely on linguistic development, but rather integrate critical thinking-integrated communication abilities that enable users to effectively participate in international professional contexts.

However, it is crucial to recognize that tertiary EFL teachers' critical thinking skills are significant in navigating this complex landscape. By understanding diverse perspectives and balancing the importance of developing the linguistic capital of Bangladeshi workers (Erling, 2017; Hamid, 2015; Imam, 2005), tertiary EFL teachers can adopt a nuanced approach that promotes both language proficiency and the preservation of cultural heritage.

1.3.3 EFL Teachers' Role in Enhancing Learners' English Proficiency and Critical Thinking

While English is working as a catalyst for globalization, the language is concurrently experiencing its globalization (Kramsch, 2014). Along with the spread of English, the language is changing its forms, lexis, and registers (Kramsch, 2014), which have given rise to discussion of world Englishes (Jenkins, 2006; Kramsch, 2014; Mesthrie & Bhatt, 2008). Thus, students are exposed to real-world English with various forms, functions, and contexts through ICTs. Hence, it has become a challenge for English teachers to decide what to teach in class to enable learners to use the language successfully in the real world (Kramsch, 2014). In consequence, many teacher development workshops (The Study Rooms, 2021; University of Mines and Technology, 2023) and training programs (British Council, 2023d; Cambridge University Press & Assessment, 2023; Oxford TEFL, 2023; University of Alabama, 2023) are being organized to enable EFL teachers to select appropriate critical thinking course contents.

Furthermore, although teachers traditionally consider native English to be Standard English, they should reconsider the language curriculum, as English itself is evolving with globalization (Kramsch, 2014). As a result, multicultural content is incorporated into English courses and textbooks to achieve language education goals for college-level students: communication, culture, communities, connection, and comparisons, thereby promoting language proficiency, awareness of global diversity, and citizenship (Bianco, 2014). Inevitably, 21st-century EFL learning mainly involves distinguishing between linguistic and cultural features in textbook written content, where English is treated as the Lingua Franca of the world rather than a few countries, and taught using international films and literature (Esseili et al., 2009). Thus, the EFL teachers will continue to teach the conventional EFL materials with a focus on the learners' language choice, reflections on the uses of language, the meaning of linguistics, discourse analysis, pragmatic variations, accompanied by critical thinking activities, and a classroom environment that promotes critical thinking (Bianco, 2014). This will empower the learners to make correct comparisons and meanings through collaborative activities. Therefore, it is easily understandable that a multicultural EFL class must be student-centered.

1.4 Statement of the Problem

Critical thinking is goal-oriented, self-regulated thinking that results in decision-making and problem-solving (Facione, 1990). In an ideal critical thinking integrated class, the teacher will be well-informed about critical thinking (Walsh & Paul, 1986) and a role model of critical and metacognitive thinking (Riwayatiningsih et al., 2021; Gul et al., 2014; Mcbride & Knight, 1993; Walsh & Paul, 1986) so that the students can learn from the demonstration of the process. Also, educators will allow, monitor, and guide students' discussion among themselves (Carter, 2020; Portelli, 1994; Mcbride & Knight, 1993) because learning critical thinking is a social process (Anderson & Soden, 2001; Hussin et al., 2019). Furthermore, the teacher will foster a supportive, accepting, and safe classroom environment where students can freely share their ideas and question other students' and even the teachers' ideas (Carter, 2020; Mcbride & Knight, 1993; Portelli, 1994). More importantly, the teacher will hold a positive attitude toward the students' abilities (Portelli, 1994). Last but not least, choosing appropriate classroom

activities and teaching strategies, such as problem-based content, role-playing, and debating (Riwayatiningsih et al., 2021; Gul et al., 2014; Mcbride & Knight, 1993), will foster critical thinking (Paul, 1985; Portelli, 1994). Therefore, effective critical thinking instruction depends not only on curriculum but also on teachers' pedagogical knowledge and skills, motivation and practices.

Regrettably, Bangladeshi tertiary EFL teachers lack the knowledge to teach critical thinking effectively (Ullah et al., 2022). Generally, teachers have limited and misguiding knowledge of critical thinking (Paul et al., 1997; Paul, 2005). An overwhelming number (59.2 %) of Bangladeshi teachers possess limited knowledge of teaching problem-solving (Islam et al., 2021) due to limited training facilities (Raqib, 2019) and the theory-based, outdated, inadequate, and unrelated content of teacher training programs (Neupane & Joshi, 2022). Moreover, because of Bangladeshi university teachers' inadequate research involvement and skills (Andaleeb, 2022; Hossen, 2022; Momtaj & Rahman, 2021; Panday, 2023; Rahman, 2022; University Grants Commission of Bangladesh, 2019), they lack critical thinking skills and knowledge of the latest contents and teaching strategies (Khan, 2025; Kirkwood & Christie, 2006; Shiddike & Rahman, 2019). Specifically, as research introduces new knowledge and involves solving problems using critical thinking skills, namely, analysis, evaluation, and synthesis skills (Crawford Academic and Research Skill Advisors, 2015; Miterianifa et al., 2020), the frequent involvement in research can enhance the teachers' Pedagogical Content Knowledge (PCK) of critical thinking and critical thinking (Carey, 2015; Kirkwood & Christie, 2006; Rahmi et al., 2019; Susiani et al., 2019; Yuan et al., 2020) which are necessary for teaching critical thinking. (Walsh & Paul, 1986). Thus, these circumstances indicate that insufficient professional preparedness and research engagement hinder Bangladeshi tertiary EFL teachers from effectively integrating critical thinking into their instructions. However, teachers' strong knowledge plays a significant role in implementing critical thinking teaching approaches, materials, and strategies. Therefore, examining their knowledge of critical thinking is crucial to identify how their existing knowledge motivates them and influence their classroom practices.

Additionally, Bangladeshi tertiary EFL teachers lack the motivation to teach critical thinking (Ullah et al., 2022). The researchers have found that, though teachers are interested in teaching critical thinking, they are often unwilling to shift power from

the teacher to the student in the classroom. However, any other information on Bangladeshi tertiary EFL educators' motivation to teach critical thinking is still unavailable. Teachers' motivation significantly determines their classroom practices and professional development efforts to effectively engage learners in problem-solving, decision-making, reflecting and other higher-order thinking. Hence, this gap underscores the necessity to investigate Bangladeshi tertiary EFL teachers' motivation to integrate critical thinking into their instructions.

Lastly, Bangladeshi tertiary EFL teachers' classroom practices are ineffective in developing critical thinking among the learners (Ullah et al., 2022) because of teacher-centeredness, promotion of knowledge through rote learning (Amin & Greenwood, 2022; Islam & Paul, 2019; Mannan, 2016) and absence of learner autonomy (Begum, 2019; Jamila & Zubairi, 2022; Siddique, 2020). Learner-centeredness and learner autonomy are crucial for developing critical thinking (Elekaei et al., 2016; Mamatkulova & Sugdiyona, 2023; Portelli, 1994; Swatevacharkul & Boonma, 2020; Vygotsky, 1978). In addition, Bangladeshi tertiary teachers usually possess an excoriating and inflexible attitude toward the learners (Saha, 2017) and hardly integrate Information and Communication Technology (ICT) inside the class (Haque, 2022) which are against the principles of teaching critical thinking (Lu & Xie, 2022; Portelli, 1994; Rungsawang & Pookcharoen, 2023; Vygotsky, 1978). Thus, the existing tertiary EFL classroom practices indicate the unsupportive instructional practices for developing critical thinking among Bangladeshi undergraduate EFL learners. Accordingly, examining their actual instructional practices for promoting learners' critical thinking is important to identify how far their teaching approaches facilitate or hinder learners' critical thinking.

Ultimately, Bangladeshi tertiary EFL educators' lack of knowledge, motivation, and practices of critical thinking leads to the absence of critical thinking among 83% Bangladeshi graduates and subsequent high rate of graduate unemployment, despite the recognition of critical thinking as the most demanded employability skill in the 2st century (Asefer & Abidin, 2021; Bourn, 2018; Collet et al., 2015; Khan, 2026; Mahmud et al., 2021; McGunagle & Zizka, 2020; Murshid et al., 2020; Pearl et al., 2018; Sarfraz et al., 2018). This condition marks the urgency to examine Bangladeshi tertiary EFL teachers' knowledge, motivation and practices of critical thinking to lower graduate unemployment through improving teaching quality in the tertiary EFL context.

Furthermore, the major gaps in the literature suggest the current project is worth pursuing.

Firstly, there is a substantial knowledge gap regarding EFL teachers' knowledge of critical thinking and their motivation to teach it in Bangladeshi and global contexts. Until now, researchers have examined tertiary EFL teachers' knowledge of critical thinking (Essia & Khallaf, 2025; Knomari et al., 2021; Marin & Pava, 2017; Mehta, 2015; Nguyen, 2022; Zhang et al., 2020) across different countries. In contrast, except for studies on Bangladeshi tertiary EFL teachers' knowledge of critical thinking, few studies (Begum, 2019; Dhami, 2022; Haque, 2019; Karim, 2004) have examined their knowledge. Moreover, only Bangladeshi school EFL teachers' knowledge of critical thinking was investigated (Ferdoush & Jahan, 2024a). Additionally, there are studies on tertiary EFL teachers' motivation (Csaba, 2018; Ipek & Kanatlar, 2018; Kamstra, 2020; Li, 2023; Syamananda, 2017; Tsutsumi, 2014) and Bangladeshi tertiary EFL teachers' affective factors (Anwaruddin, 2013b; Azad, 2013; Bristi, 2018; Karim, 2004; Shuchi & Islam, 2016; Uddin, 2014; Ullah et al., 2022). However, a systematic study of Bangladeshi tertiary EFL teachers' motivation to teach critical thinking remains unavailable. Accordingly, the present study seeks to address this gap in understanding tertiary EFL teachers' knowledge, motivation and practices of critical thinking, not only to gain a comprehensive understanding of the Bangladeshi context but also to contribute to the global discussion on critical thinking instructions in tertiary EFL education.

Secondly, the present study aims to deal with methodological gaps in the literature. Interestingly, classroom practices are investigated through interviews in many studies (Alasmari, 2022; Hanifah et al., 2022; Nguyen, 2022; Nepal, 2022; Abasaid & Ferreira, 2022; Zhang et al., 2020). Observations help understand reality (Gummesson, 2007), which interviews may not reveal. In addition, the validity and reliability of interviews and classroom observations (Alasmari, 2022; Al-Kindi & Al-Mekhlafi, 2017; Abasaid & Ferreira, 2022; Anggraeny & Khongputb, 2022; Nepal, 2022; Nguyen, 2022; Knomari et al., 2021; Zhang et al., 2020; Zainudin et al., 2019) and questionnaire survey studies (Alasmari, 2022; Ullah, 2022; Knomari et al., 2021) are not confirmed. Thus, the study intends to address these methodological gaps through rigorously developed research instruments and design to ensure the credibility and depth of findings regarding tertiary EFL teachers' knowledge, motivation and practices of critical thinking.

Thirdly, studies in the relevant field have theoretical gaps that the present project attempts to address. A vast body of studies on tertiary EFL teachers' critical thinking knowledge and practices (Aliakbari & Sadeghdaghighi, 2012; Alasmari, 2022; Assaly & Jabarin, 2021; Ayyash, 2022; Kanavoz & Akbaş, 2017; Khalid et al., 2021; Knomari et al., 2021; Li, 2023; Masadeh, 2021; Nepal, 2022; Prommak, 2019; Toshpulatova & Kinjemuratova, 2020; Yamin et al., 2022; Yuan & Stapleton, 2019; Zhang et al., 2020) and motivation to teach critical thinking (Küçükoğlu, 2013; Ullah et al, 2022) are based on only literature review instead of theories. Most importantly, theoretically, teachers' Knowledge, Attitude, and Practices (KAP) are interconnected variables (Asempapa, 2022; Chen et al., 2021a; Derakhshanpour et al., 2021; Ehizele et al., 2010; Habib et al., 2023; Htun, 2013; Natividad, 2012; Wilkins, 2008; Xie et al., 2014). Although studies of teachers' KAP are common in the science discipline, the predominant research practice in ELT (Assaly & Jabarin, 2021; Doğan & Mirici, 2017; Li, 2023) has been to explore teachers' knowledge and practices without addressing the attitudes and motivation that bridge them. Examining tertiary EFL teachers' knowledge, motivation and practices of critical thinking is important to interpret the findings on the backdrop of established constructs. The theoretical framework also helps systematically explore the relationship among the variables and establish the construct validity of the study. Hence, the current study explored Bangladeshi tertiary EFL teachers' knowledge, motivation and practices of critical thinking through the lens of a comprehensive theoretical framework to provide an in-depth and verifiable understanding of the context.

Thus, the study seeks to solve the problems of teaching critical thinking in EFL settings in Bangladeshi tertiary institutions and to address the gaps in the literature with a mixed research approach under a pragmatic worldview (Feilzer, 2009; Florczak, 2014; Fetters & Molina-Azorin, 2018; Parvaiz et al., 2016). Eventually, the research aims to develop a tertiary EFL teachers' critical thinking knowledge, motivation, and practice framework which can be utilized by policymakers, curriculum developers, material developers, higher educational institutions, and EFL teachers. The framework will serve as a tool for effective teacher development to grow 21st-century skills among the learners.

1.5 Research Objectives

The main objective of the study is the following:

- To investigate Bangladeshi tertiary EFL teachers' knowledge, motivation, and practices of critical thinking

Based on the main objective, the following objectives of the research are decided:

RO1: To examine Bangladeshi tertiary EFL teachers' critical thinking classroom practices

RO2: To examine Bangladeshi tertiary EFL teachers' knowledge of critical thinking

RO3: To investigate the correlation among critical thinking knowledge, motivation, and practices of Bangladeshi tertiary EFL teachers

1.6 Research Questions

There are three main research questions given below:

RQ1: How do Bangladeshi tertiary EFL teachers incorporate critical thinking into their classroom practices?

RQ 2: What is the level of knowledge of critical thinking among Bangladeshi tertiary EFL teachers?

RQ 3: To what extent do critical thinking knowledge, motivation, and practices of Bangladeshi tertiary EFL teachers correlate?

1.7 Research Hypotheses

The study aims to investigate how tertiary EFL teachers' knowledge and motivation influence their critical thinking classroom practices. Secondary research indicates that teachers' knowledge, attitudes, and practices are strongly correlated (Natividad, 2012; Rogers, 2003; Wilkins, 2008). In exploratory sequential design, hypotheses are developed from the findings of the qualitative study, thereby integrating

qualitative and quantitative methodologies (Creswell & Clark, 2018; Fetters et al., 2013). The hypotheses are generated based on the findings of RQ1 and RQ2, and formulated in accordance with RQ3. The following hypotheses will be tested in this study:

Hypothesis 1:

H0: There is no relationship between critical thinking knowledge and the motivation of Bangladeshi tertiary EFL teachers.

Hypothesis 2:

H0: There is no relationship between critical thinking motivation and practices of Bangladeshi tertiary EFL teachers.

Hypothesis 3:

H0: There is no relationship between critical thinking knowledge and practices of Bangladeshi tertiary EFL teachers.

1.8 Scope of the Study

The scope of the study encompasses its variables, subject matter, target population, geographical location, data and instruments. Firstly, the study examines the relationships among its major variables: knowledge, motivation and practices of critical thinking. By examining this relationship, the study fills a gap in the literature that lacks statistical evidence on the role of motivation in transforming tertiary EFL teachers' knowledge of critical thinking into practice.

Secondly, regarding the subject matter, the study highlighted tertiary EFL teachers' professional development in terms of their knowledge, motivation and practices of critical thinking. Unlike existing studies, the current research investigated in depth the issues of tertiary EFL teachers' knowledge, motivation, and practices to provide a comprehensive understanding of the context, including top-down institutional influences and bottom-up classroom-to-social realities.

Thirdly, the study collected qualitative data from five QS-ranked universities and quantitative data from ten South Asian QS-ranked public and private Bangladeshi

universities. Since one of the core criteria to be qualified in the QS ranking is research productivity, which is directly connected to critical thinking practices and development, the target population provides a solid understanding of the professional growth and practices of critical thinking within the top-ranking universities that are supposed to play a significant role in national economic growth by participating in global knowledge economy.

Fourthly, the study collected data from universities situated in Dhaka, the capital city of Bangladesh. This highlights the understanding of the public and private universities that receive higher academic, research and policy-related support. By selecting this geographical location, the study shows that even in comparatively privileged tertiary educational settings, EFL teachers lack the necessary knowledge, motivation and practices of critical thinking.

Fifthly, the study collected data from both public and private universities. These are two mainstream higher educational institutions in the country. Therefore, collecting data from these institutions enhanced the generalizability of the findings.

Sixthly, the study collected both qualitative and quantitative data. Tertiary EFL teachers' knowledge-related data were collected using interviews and practice-related data were collected using qualitative classroom observations. However, data for exploring the correlation among their knowledge, motivation and practices of critical thinking was collected through a quantitative survey. While qualitative data provided an in-depth understanding of the participants' knowledge, motivation and practices, quantitative data allowed measurable evidence of the relationship among the variables. Thus, the use of both types of data ensured a comprehensive and reliable understanding of the context.

Particularly, the study collected comprehensive data on the classroom environment that also influenced the teaching and learning of critical thinking. Since this aspect was ignored in the previous studies, the current study's findings provide a new insight into the role of structural features in teaching and learning critical thinking.

Seventhly, the study collected interview data by employing a semi-structured interview protocol to collect data related to critical thinking knowledge. In addition, it employed a semi-structured classroom observation protocol to collect practice-related data. The use of a semi-structured interview protocol allowed the participants to elaborate on their views and provided flexibility to explore context-specific issues

relevant to the study. Moreover, the use of a semi-structured classroom observation protocol enabled the researcher to capture the participants' actual classroom practices. Furthermore, the study utilized a 7-point Likert scale questionnaire to collect data on tertiary EFL teachers' knowledge, motivation and practices of critical thinking and to statistically examine their correlations. Specifically, the development of the questionnaire based on the semi-structured interview and semi-structured classroom observation protocols enabled data consistency and maintained contextual relevance.

Overall, the scope of the study provides a multidimensional understanding of EFL teachers' knowledge, motivation ad practices of critical thinking in Bangladeshi tertiary educational settings. By incorporating multiple variables, institutional settings, and data types, the study offers both contextual and empirical insights into the realities and challenges in tertiary EFL teachers' professional expertise in integrating critical thinking into their classrooms. Therefore, the findings of the study are expected to significantly contribute to teacher professional development, curriculum design and policy formation related to critical thinking teaching in Bangladeshi tertiary institutions.

1.9 Limitations of the Study

One of the limitations of the study is that the findings may not be generalized to suburban or rural tertiary EFL contexts since urban educational environments and institutional culture vary due to the differences in the teachers' and learners' socio-economic circumstances. Limited exposure to contemporary educational issues and the lack of professional development opportunities for higher educational institutions under the NUB in suburban and rural areas in Bangladesh may have different sets of potentials and challenges in ensuring EFL teachers' critical thinking knowledge, motivation and practices. Moreover, the socio-cultural barriers to tertiary EFL teachers' critical thinking, knowledge, motivation and practices may vary across societies, countries and regions, resulting in the lack of generalizability of the findings in all tertiary EFL teaching and learning contexts. Besides, the differences in institutional culture and priorities between QS-ranked and non-QS-ranked universities may limit the applicability of the findings across all urban universities.

Another limitation of the study lies in its sampling strategy. Although this sampling technique allowed recruiting information-rich participants relevant to the

study's objectives, the technique may have reduced the representativeness of the broader tertiary EFL teaching population. Hence, the findings of the qualitative phase should be interpreted within the context of the selected institutions and participants.

In addition, the study adopted a cross-sectional approach to data collection, which allows capturing data at a certain point in time rather than the evolving data over a period of time. Since teachers' knowledge, motivation and practices of critical thinking evolve with institutional changes and professional development opportunities, the study could not capture possible longitudinal changes in these variables.

Furthermore, the data collection time frame is a limitation of the study. The limited time of data collection may have influenced the responses and classroom practices of the participants. Factors, such as academic schedules, examination pressures, and academic workload, may have influenced the level of their knowledge, motivation and practices of critical thinking at the given point of data collection. Hence, the findings represent the participants' experiences, feelings and practices during the specific time of data collection instead of capturing a long-term condition in their knowledge, motivation and practices of critical thinking.

1.10 Significance of the Study

First, the study aims to develop teachers' critical thinking knowledge, attitude, and practice framework based on the findings. Hence, the study has produced the "**Framework for EFL Teacher Development in Critical Thinking Instructions**". According to Elder (2019), effective teacher development for teaching critical thinking involves the development of the whole institutional system. Thus, the framework included fundamental issues like updated in-service training, institutional reorientations for encouraging teacher motivation and professional growth, and re-shaping the current EFL curriculum grounded on self- determination theory's (SDT) intrinsic and extrinsic motivational factors (Anderson et al., 2001; Artman et al., 2020; Elder, 2019; Khan, 2008; Portelli, 1994; Ryan & Deci, 2000; Rogers, 2003; Shrestha et al., 2021; Vadivel et al., 2021; Vygotsky, 1978). The expected changes in the whole system proposed in the framework will be a guideline for teachers, curriculum and material developers, and the universities to promote teaching and learning critical thinking.

Thus, the EFL learners will benefit from it. Effective curriculum and teacher development changes will result in the expected language proficiency and creativity among them. This will enhance their national and global employability, confidence for studying abroad and adaptability to Western culture and education. Since critical thinking is an integral part of the British and American curricula (Ennis, 2013; Johansson, 2023; Shaheen, 2016), Bangladeshi international students initially struggle to cope with it (Shaheen, 2016). So, integrating critical thinking into tertiary EFL courses in Bangladesh will enhance their familiarity with these practices and pave the way for global education.

Also, although the study is focused on the tertiary level only, it will guide policymakers, curriculum designers, and material developers in developing newer approaches to teaching critical thinking at the secondary and higher secondary levels. This is possible because English teaching approaches are almost identical across all levels (Zahra, 2012). Additionally, most existing studies **(**Alasmari, 2022; Al-Kindi & Al-Mekhlafi, 2017; Ullah, 2022; Knomari et al., 2021) have not ensured the validity of their methods and findings. Most importantly, critical thinking teaching practices will support learners in achieving academic success and equip them to enter the ever-increasingly competitive, globalized job market with greater sustainability.

Next, the study contributes theory-based knowledge of tertiary EFL teachers' knowledge, motivation, and critical thinking practices. The majority of studies in the field (Al-Kindi & Al-Mekhlafi, 2017; Saleh, 2019; Zainudin et al., 2019) are based solely on a literature review. However, the present study utilizes the theory of critical thinking (Facione, 1990), self-determination theory (Deci & Ryan, 1985; Ryan & Deci, 2000), Bloom’s taxonomy of educational objectives (Anderson et al., 2001), and constructivist theory (Vygotsky, 1978), respectively, for teachers' knowledge, motivation, and critical thinking practices. More importantly, the correlation between perceived critical thinking teaching practices and teachers' knowledge and motivation, based on the innovation-diffusion theory (Rogers, 2003), will yield the type of theory-based data that is rare in the field at present. Further, it will yield new insights into the intricacies of teaching critical thinking in Bangladesh's socio-economic and cultural context.

Most importantly, the study's findings are expected to influence the country's economy in the long term. Increasing tertiary EFL teachers' critical literacy will equip

learners with stronger critical thinking skills and enhance their employability. As a result, the current high unemployment rate will decrease, boosting the country's economic, social, national, and international standards.

1.11 Operational Definitions

Classic Classroom Layout – A classic classroom layout is categorized as the one where the students' desks are organized in rows and columns, facing the teacher (Ford, 2016; Henshaw et al., 2011; Simmons et al., 2015). In the present study, a classic classroom layout means students' desks are arranged in rows and columns oriented towards the front of the classroom, where the teacher's desk, board and other teaching facilities are situated.

Classroom Lighting Conditions – Classroom lighting conditions involve both daylight and electric lights (Hui & Cheng, 2008). The appropriate position of classroom electric lights is over the head in two or more rows, and they should compensate for reduced daylight (Angelaki & Besenecker, 2026). Additionally, avoiding curtains can enhance daylight access in the classroom (Pratiwi et al., 2021). In this study, both access to natural light and the adequacy of electric light were determined by the use of curtains and the illumination of electric lights.

Classroom Mobility - A limited mobility classroom arrangement is often associated with one that lacks open areas for teacher and learner movement (Cole et al., 2021; Reinius et al., 2021). Particularly, the narrow spaces between students' seats often limit the teacher's and students' movement (Collins, 2024). In the present study, limited classroom mobility is associated with the limited open space between the rows, columns, and desks.

Classroom Noise Conditions - Outside noise is considered inconducive as this distracts students and teachers' attention (Ali et al., 2023; Chen & Ou, 2019; Shukla & Tandel, 2022). On the other hand, a class without disruptive sounds from inside and outside is supportive for both teaching and learning (Wagnon et al., 2024). Hence, in the present study, the presence of car horns is considered an unconducive sound condition. On the contrary, the absence of irrelevant sounds in the classroom supportive noise condition.

Classroom Practices – Classroom practices refer to the activities and strategies that teachers and students use in the teaching and learning process, respectively (UNESCO, 2022a). In this study, classroom practices refer to teaching strategies and behaviors that create a safe classroom environment and encourage and engage learners in critical thinking.

Communicative Language Teaching (CLT) – Communicative Language Teaching (CLT) is a group of rules regarding the aims of teaching and how students master a language. These rules also include the types of classroom activities most appropriate for promoting learning, the educators' duties, and the students' roles in the classroom (Richards, 2006). Communicative Language Teaching (CLT) is an approach in which the learning environment is purposeful and materials are selected from real-life contexts (Muhridza et al., 2019). Thus, CLT means a learner-centered and interaction-based teaching approach that integrates critical thinking to promote meaningful communication, real-life language use and active participation of the learners.

Critical Thinking – Critical thinking connotes the psychological procedures, techniques, and delineations that people apply to solve problems and to determine and pursue new knowledge (Ennis, 1985). Critical thinking is the use of cognitive skills or techniques to increase the likelihood of a desired result. This kind of thinking is firm, logical, and target-oriented and used for solving problems, making inferences, estimating possibilities, and making decisions. Critical thinking skills are reflective and effective in particular situations and the nature of the thinking activity (Halpern, 2014). Hence, critical thinking refers to the combination of skills, such as analysis, evaluation, creation, interpretation, inferencing and reflecting as well as critical thinking dispositions, like trustworthiness, organization, open-mindedness, curiosity and self-confidence.

English as a Foreign Language (EFL) – EFL is the teaching of English to non-native English speakers (Collins English Dictionary, 2023a; British Council, 2023b). EFL refers to teaching English to learners whose mother tongue is not English (Cambridge Dictionary, 2023). In the Bangladeshi context, English is a foreign language since there is no official language in the country (Ara, 2020; Shanta, 2017). English is still considered a symbol of social status rather than a regular everyday practice (Hasan, 2022; Shanta, 2017). Therefore, in the context of the current study EFL

refers to English language taught and learned as a non-native and non-daily communication language. Particularly, in Bangladeshi tertiary EFL educational settings it is primarily used for academic and professional purposes.

English Language Teaching (ELT) – English Language Teaching refers to the instruction and pedagogy aimed at teaching English to individuals whose native languages differ from English (Giannikas, 2021), whereas EFL is the teaching of English to non-native English speakers (Collins English Dictionary, 2023b; British Council, 2023c). In the context of this study, ELT indicates the teaching approaches, strategies and processes through which tertiary EFL teachers teach English to non-native-speaking English learners in Bangladesh.

EFL Teacher - EFL teachers are those educational professionals who assist students in learning or enhancing English proficiency in English-speaking and non-English-speaking countries (Birmingham City University, 2019). Also, a teacher who teaches English to speakers of other languages is called an EFL teacher (Tefl.NET, 2023). So, teachers teaching English to Bangla-speaking students are EFL teachers in Bangladesh. Therefore, in the context of the present study, EFL teachers mean tertiary educators who teach English to Bengali-speaking learners in Bangladeshi tertiary institutions.

Ideal Classroom Size - According to the Missouri State University, Planning, Design, and Construction (2024), the class size for universities should be 18 ft^2 – 30 ft^2 per student. Moreover, classroom space per university student should be between 18 and 20 square feet (Folkins et al., 2015; International WELL Building Institute, 2017). Therefore, in the current study, a spacious classroom is one where 720 ft^2 is allotted for 25 students, whereas a medium-sized classroom is one where 450 ft^2 is allotted for 24 students (*Size-related information collected from university authority after data analysis*).

Ideal classroom Temperature - A temperature ranging between 23/24 $^{\circ}C$ and 26 $^{\circ}C$ is the best condition for students' cognitive engagement (Brink et al., 2021; Romero et al., 2024). Particularly, in India, during summer, a broad comfortable range of temperature is from 22 ^{o}C to 32 ^{o}C (Khambadkone et al., 2022). In this study, comfortable temperature refers to a temperature that falls within this range, as the temperature in March in Bangladesh can be as high as 37 ^{o}C (WeatherAPI.com). Specifically, one of the observed classes had an Air Conditioning (AC) temperature of

24 ^{o}C, while others ranged between 25 ^{o}C and 26 ^{o}C, indicating a comfortable temperature (*Information collected from university authority after data analysis*).

Inclusive Eye Contact - Inclusive eye contact refers to making eye contact with all students, which is the opposite of one-sided eye contact (Haataja et al., 2019; Rzayeva, 2025). In the present study, inclusive eye contact means that the teacher makes eye contact with students on all sides of the classroom.

Information and Communication Technology (ICT) – Information transmitted quickly within and beyond different communication networks is called Information and Communication Technology (Freeman & Hasnaoui, 2010). ICT also stands for the 'forms of technology that are used to transmit, process, store, create, display, share, or exchange information by electronic means. This broad definition of ICT includes such technologies as radio, television, video, DVD, telephone (both fixed line and mobile phones), satellite systems, and computer and network hardware and software, as well as the equipment and services associated with these technologies, such as videoconferencing, e-mail and blogs (UNESCO, 2007, p.1). Hence, ICT refers to the technological tools and digital communication systems, involving computers, multimedia, internet resources and online platforms used in tertiary EFL teaching and learning.

Knowledge - Knowledge betokens the awareness of something (Encyclopædia Britannica, Inc., 2023). It is the information and understanding of a subject matter (Collins English Dictionary, 2023c). In the context of the present study, knowledge refers to EFL understanding of critical thinking as a term and the techniques and strategies to improve learners' critical thinking in the EFL classroom.

Motivation - Motivation is the force that leads to conscious or unconscious human action (American Psychological Association, 2023). It is the desire to get involved and continue an action (Schunk et al., 2014). In this study, motivation refers to tertiary EFL teachers' interest and efforts to teach critical thinking.

Teacher Content Knowledge (CK) - Teacher content knowledge includes all the information, theories, principles, ideas, and words necessary for teaching effectively, accompanied by pedagogical content knowledge (UNESCO, 2022a). In the context of the present study, teacher content knowledge indicates their understanding of critical thinking concepts, theories and principles.

Teacher Continuous Professional Development (CPD) - Teachers' continuous professional development involves continually upgrading knowledge and skills throughout their teaching careers (Cirocki & Farrell, 2019). Moreover, it is the dedication to enhancing their knowledge, skills, and expertise throughout their teaching careers (Mwila et al., 2022). In the context of the present study, CPD means tertiary EFL teachers' ongoing endeavors beyond formal training to improve their knowledge, motivation and practices of critical thinking instructions.

Tertiary EFL Teacher - Following the definition of EFL teachers, those teaching EFL at tertiary institutes in non-English-speaking countries are tertiary EFL teachers.

Teacher Pedagogical Content Knowledge (PCK) - It combines content and pedagogical knowledge to teach subject matter in accordance with learning needs (Shulman, 1986). In this study, teacher pedagogical content knowledge indicates their understanding of strategies and techniques, such as open-ended questioning, using thought-provoking materials, social learning activities, ICT integration and student-centered instructions to promote learners' critical thinking.

Teacher Motivation - Teacher motivation refers to the reasons that arise from a teacher's desire and values to get involved in teaching and to continue in the profession. It also includes their internal and external desires to engage with the teaching profession, influenced by contextual factors (IGI Global, 2023; Machumu, 2020).In this study, teachers' motivation indicates their interest in integrating critical thinking into EFL instructions through various techniques and strategies, such as social learning activities, student-centeredness and ICT-integrated teaching and learning. It also refers to their interest and efforts in professional development through participating in self-directed professional development activities.

Teacher Professional Development - Teacher Professional Development (PD) refers to activities that enhance a teacher's competency, knowledge, professionalism, and other attributes (OECD, 2009). Broadly, teachers' professional development includes improving their knowledge of subject matter, pedagogy, and curriculum (Shulman, 1986). In this study, teacher professional development means the process through which tertiary EFL teachers hone their knowledge, motivation and practices of critical thinking instructions.

Unfavorable Gestures – Teachers' unfavorable gestures are those that fail to engage learners in deep thinking. These gestures include one-sided eye contact. One-sided eye contact that fails to effectively enhance learners' critical thinking (Haataja et al., 2018). This is also considered biased eye contact as the teacher makes eye contact with only one group of learners in the classroom (Gabel et al., 2025). In this study, tertiary EFL teachers' one-sided eye contact is considered unfavourable as this fails to create a supportive classroom environment for all students to engage in critical discussions.

Unfavorable Posture – Unfavorable posture means the teacher is sitting or standing behind the teacher's desk, which limits teacher-student interaction and student thinking (Bambaeeroo & Shokrpour, 2017). In this study, tertiary EFL teachers' spending their interaction or instructional time behind their desks is considered an unfavorable posture.

Well-Organized Classroom Layout - A well-organized and effective classroom layout is associated with column and row style student seats (Cheryan et al., 2014; Simmons et al., 2015). Particularly, teachers' position in the front with the necessary teaching materials like a desk and a white or blackboard behind, with the students sitting in columns and rows facing the teacher, is considered a well-organized classroom (Tobia et al., 2022). On the contrary, a poorly organized classroom is one where furniture is scattered and unstructured. In this study, a well-organized classroom refers to not only orderly seating arrangement for the students but also the systematic placement of instructional materials and leaning resources. This also indicates that the movement areas of the classroom ae clear and unobstructed.

1.12 Chapter Summary

In fine, this chapter has grasped the glocal economic and educational transformations in which the necessity of the present study is nested. It has presented the problem statement, research objectives, and research questions. Also, it explains the study's scope, limitations, and significance. In addition, the chapter includes a list of definitions for the terms used throughout the study.

CHAPTER 2
LITERATURE REVIEW

2.1 Introduction

Chapter 2 extends the comprehensive literature review and presents the theoretical and conceptual frameworks for the study. This chapter elaborates on the global and local contexts of the topic, highlighting the role of English in the present job market and its connection to teaching critical thinking in tertiary EFL classes. In this connection, this chapter explores relevant literature on tertiary EFL teachers' pedagogic knowledge, motivation and practices of critical thinking. Moreover, the theoretical framework included in this chapter underscores the overarching research concept and the underlying theories of each of the variables which are knowledge, motivation and practice. Additionally, the conceptual framework illustrates the theoretical and structural foundations for the study's variables.

2.2 Teachers' Knowledge

Teachers' knowledge comprises Content Knowledge (CK), Pedagogical Content Knowledge (PCK), and curricular knowledge (Shulman, 1986), which influence teaching efficiency (Kleickmann et al., 2013; Shulman, 1986). This study intends to investigate tertiary EFL teachers' knowledge of critical thinking which necessitates an explanation of CK and PCK in the current context.

2.2.1 Teachers' Content Knowledge

Teachers' Content Knowledge (CK) refers to their understanding of the core content of the topic, which is crucial to effective teaching practice. Teachers' CK purports the understanding of the subject matter (Ball et al., 2008; Kleickmann et al., 2012; Shulman, 1986). Besides, teachers must present how this information comes into being and how it connects to their theories and practices, both within and beyond the discipline, while also providing students with the accepted information in the content

(Shulman, 1986). Teachers' knowledge differs from their academic knowledge in that it requires a deeper, broader understanding of the subject matter, unlike everyday mathematics (Adoniou, 2014; Kleickmann et al., 2012). Hence, teachers' CK combines their theoretical and conceptual knowledge, required for effective teaching, with their Pedagogical Content Knowledge (PCK) (UNESCO, 2022b).

Furthermore, CK is a significant determinant of teaching standards that evolves with teachers' growing experiences. The combination of all this knowledge makes the difference between a "competent teacher" and an "excellent teacher" (Adoniou, 2014, p. 1). The knowledge of the content evolves and deepens as teachers' experience grows. Logically, teachers' CK comes before their practices PCK (Driel & Berry, 2012). Drawing on many experimental studies from countries such as Australia, the Netherlands, and Palestine, Hashweh (2013) concludes that enhanced CK is associated with effective teaching.

Clearly, there is a need to investigate Bangladeshi tertiary EFL teachers' critical thinking knowledge to specify the gaps, identify solutions to improve their critical thinking CK that will contribute to undergraduate EFL learners' critical thinking (Hemming, 1997). Given the nature of critical thinking, the research assessed Bangladeshi tertiary EFL teachers' CK of critical thinking.

2.2.2 Teachers' Pedagogical Content Knowledge (PCK)

Teachers' Pedagogical Content Knowledge (PCK) enables them to transform their CK into instructional practices aligning with learners' needs and learning goals. Hence, PCK refers to the teachers' professional knowledge of the subject matter (Berry et al., 2008; Cochran et al., 1993; Driel et al., 2021; Hashweh, 2005). Briefly, teachers' PCK is their knowledge of the content and how to organize, constitute, and implement it in response to students' and the organization's needs (Shulman, 1986, 1987; Shulman & Shulman, 2004). In contrast, Kleickmann et al. (2013) argue that teachers' PCK comprises their understanding and misunderstanding of the subject matter and the teaching strategies used to transmit knowledge to learners. Notably, teachers' CK becomes futile without PCK, as they need to make the content meaningful to students with various preconceptions by using effective teaching strategies (Ball et al., 2008; Guerriero; Kathirveloo et al., 2015; Kleickmann et al., 2012; Shulman, 1986; UNESCO, 2022b). Moreover, teachers' PCK motivates teachers to teach the subject

matter (Tang et al., 2015; Velle, 2021), increasing their self-efficacy and guaranteeing effective classroom practices (Aksu & Kul, 2019; Patra & Guha, 2017).

Evidently, teacher education and professional development programs play a crucial role in developing their CK and PCK, though evidence indicates discrepancies in the effectiveness and relevance of these programs in the South Asian context, particularly in Bangladesh. Accordingly, it is important to understand the sources that promote teachers' CK and PCK (Kleickmann et al., 2012; Shulman, 1986). Teacher education programs contribute significantly to improving teacher CK (Ball et al., 2008), as new teachers enter their jobs with some CK from prior degrees (Shulman, 1986). Therefore, the contributions of these teacher education programs to teacher growth are evident in recent studies (Neupane & Joshi, 2022; Pillay et al., 2017). Teacher development programs in Nepal and Sri Lanka fail to produce teachers who are competent in teaching critical thinking because they do not include updated coursebooks, journals, and constructivist approaches in the curriculum (Pillay et al., 2017). Accordingly, Kaufman (2004) suggests that language teacher education programs should accommodate constructivist pedagogy to prepare prospective teachers for future constructivist classes. Contrarily, Neupane and Joshi (2022) observe that while in Asian countries like India, Sri Lanka, and Bhutan, in-service teacher education programs' pedagogical content is customized to future learners' needs, teacher training programs in Bangladesh are insufficient, outdated, theory-driven, and disconnected from future skills. Under these contradictory findings on Asian teachers' PCK, it is imperative to fathom the extent to which Bangladeshi tertiary EFL teachers' PCK supports critical thinking in classes successfully.

In the present context, EFL teachers' PCK refers to their knowledge of both critical thinking and its integration in EFL teaching, which are examined later in this chapter. Logically, researchers have been extensively exploring teachers' critical thinking CK and PCK. In precision, EFL teachers' critical thinking CK has been investigated at the secondary level (Ilyas, 2018; Li, 2023; Sadeghi et al., 2020) and tertiary level (Marin & Pava, 2017; Nguyen & Nguyen, 2022; Zhang et al., 2020). Although some studies explored EFL teachers' PCK on reading strategy (Xu, 2015), writing (Yelay, 2020), genre-based approach (Suharyad et al., 2021), teaching speaking (Lan, 2020), technology-oriented flipped classroom (Zhang & Fang, 2022), and technological pedagogical knowledge (Hsu & Chen, 2019; Tseng et al., 2020; Zhang & Fang, 2022), evidence of tertiary EFL teachers' PCK of critical thinking is deficient. On

this account, the study aims to explore the correlation between Bangladeshi tertiary EFL teachers' PCK of critical thinking and their relevant classroom practices.

2.3 The Conception of Critical Thinking

Critical thinking has been defined from multiple disciplinary perspectives, making the concept complex and varied, yet these definitions collectively reveal the underlying features. Many researchers (Halpern, 2014; Facione,1990; Paul & Elder, 2019; Thonney & Montgomery, 2019) have defined critical thinking from divergent perspectives. To add to the complexity, Thonney and Montgomery (2019) have compiled definitions of critical thinking across disciplines, such as biology, the environment, physics, and others, making it hard to choose one. Although it is difficult to decide which definition to accept, careful consideration of these definitions can help identify the principal features of critical thinking.

Critical thinking is purposeful, rational, and goal-oriented thinking, comprising problem-solving, assessing feasibility and prospects, making predictions, and making thoughtful, fruitful decisions in a specific situation. Moreover, a critical thinker must effortfully and consciously evaluate the outcomes of his/her decision; otherwise, it cannot be treated as critical thinking (Halpern, 2014). In addition, Paul and Elder (2014) define critical thinking as the analysis and evaluation of one's own thinking to improve it. It is self-directed, self-disciplined, self-monitored, and self-corrective thinking, accompanied by intellectual qualities such as clarity, correctness, specificity, congruity, rationality, consequences, impartiality, and comprehensiveness (Paul & Elder, 2014).

Likewise, Facione (1990) describes critical thinking as purposeful and self-regulated thinking that results in interpretation, analysis, evaluation, and inference. Another outcome of critical thinking is an explanation of the practical, conceptual, methodological, criteriological, and situational considerations that underpin the judgment. Additionally, critical thinking implies forming judgments while making decisions about actions or thoughts (Facione, 2000). Therefore, reflective thinking rather than memorization means logical thinking (Facione, 2011). The definition has tried to capture the central sub-skills, e.g., problem-solving, reasoning, inferencing, and decision-making, of critical thinking discussed in the coming section.

To wrap up, critical thinking is widely considered as a self-regulated and goal-oriented process that combines both cognitive abilities and dispositions to support

effective decision-making and problem-solving. Thus, critical thinking is a purposeful, self-regulated thinking that facilitates problem-solving and decision-making to achieve desired outcomes (Ennis, 1985; Facione, 1990, 2000, 2011; Halpern, 2014; Paul & Elder, 2014). Together with this, the psychological process of critical thinking subsumes a range of mental activities, such as inferencing, evaluating, judging, interpreting, and metacognition (Facione,1990; Elder & Paul, 2014), along with qualities like rationality, flexibility, honesty, swiftness in thinking, clarity, and orderliness (Facione, 1990). Overall, the study considers that critical thinking is the outcome of the self-regulated integration of the thinker's inherent qualities and skills to reach decision-making and problem-solving.

2.3.1 The Nature of Critical Thinking

Critical Thinking dispositions are an integral part of overall critical thinking performances as they regulate the appropriate and ethical applications of critical thinking skills. The definitions of critical thinking, as emphasized in the previous section, indicate that critical thinking is not merely a set of skills; rather, these skills are ineluctably accompanied or preceded by certain dispositions that determine its success (Ennis, 1996). Particularly, having proper critical thinking dispositions is a prerequisite for employing critical thinking skills (Ennis, 1996; Facione, 1990; Halpern, 1999; Hendrix, 1999). Individuals without these dispositions may misuse their sharp critical thinking skills for unethical benefits (Kakai, 2000; Paul, 1990). Hence, having critical thinking dispositions helps critical thinkers deploy their skills in a morally acceptable way.

Therefore, the instructional practices for developing learners' critical thinking require the integration of both skills and dispositions to sustain their effective application. Facione (1990) proposes that teaching critical thinking must embrace both dispositions and skills as the premise of a rational and democratic society. Naturally, Hendrix (1999) postulates that a language curriculum for cultivating learners' speaking and listening skills must combine critical thinking skills and dispositions. Dong (2015) emphasizes teaching critical thinking in early education, followed by increasingly difficult stages. Additionally, Wilson (2016) opines that while critical thinking skills can be taught through explicit instruction, dispositions require ongoing support and encouragement. Hendrix (1999) theorizes that a critical thinker with suitable

dispositions has “conscious competence” (p. 16), which will strengthen skills in the long run. Accordingly, the forthcoming section will expand on critical thinking as a combination of skills and dispositions.

2.3.1.1 Two Dimensions of Critical Thinking: Dispositions and Skills

Critical thinking dispositions are motivations that encourage individuals to apply critical thinking skills in decision-making and problem-solving. Critical thinking dispositions are the “consistent-interval motivation” (Facione, 2000, p. 6) that lead to decision-making and problem-solving using critical thinking skills. Distinctively, a person with a critical thinking disposition believes that critical thinking is important and is inclined to practice it. Moreover, some professionals, including educators, lack the disposition to apply critical thinking skills (Facione, 2000). Additionally, Wilson (2019) emphasizes the importance of learners acknowledging the value of critical thinking and being motivated to enhance their critical thinking skills.

Critical thinking dispositions involve several features that inspire individuals to implement critical thinking in real-life situations. In this respect, Lai (2011) specifies the leading critical thinking dispositions: i) acceptance, ii) unbiased and unprejudiced, iii) tendency to search for logic, iv) curiosity, v) thirst for knowledge, vi) complaisance, and vii) tolerance of others’ opinions. Even the Delphi Report (Facione, 1990) proposes simultaneous administration of the California Critical Thinking Skill Test (CCTST) and the California Critical Thinking Disposition Inventory (CCTDI). CCTDI comprises seven critical thinking dispositions: truth-seeking, open-mindedness, analyticity, systematicity, critical thinking self-confidence, inquisitiveness, and maturity of judgment (Facione et al., 1994; Facione, 2000). CCTDI is crucial for effectively using critical thinking skills outside the classroom. This works as a motivator for the users of critical thinking skills (Facione, 2000).

Inquisitiveness is a person’s intellectual curiosity and inclination to learn, while open-mindedness is a flexible mentality that accepts differing viewpoints. Moreover, systematicity is the organized approach to solving a problem, irrespective of its nature. Additionally, analyticity is the prediction of an event's or an idea's future outcomes through reasoning. People like scientists, educators, and psychologists use analytical thinking. Furthermore, truth-seeking involves evaluating and acknowledging facts and information, and refining existing beliefs and opinions through reflection, which is

important for both teachers and learners. Besides, critical thinking self-confidence is an individual's maturity and mastery of critical thinking skills, which help retain faith in their ability to use reasoned judgment and problem-solving. Finally, maturity is the tendency to view the situation as an ill-structured problem and urge for a complex decision-making process that is time-pressured and includes stakeholders from several areas.

Effective critical thinking requires the integration of both critical thinking dispositions and skills, which are considered important educational outcomes. Individually, the study argues that successful critical thinking comes from the concoction of dispositions and skills, as suggested by Facione (2000). Accordingly, critical thinking dispositions and skills have been recognized as desirable educational outcomes (Chan, 2019; Ma, 2021; Pu et al., 2019), especially in undergraduate education (Bloch & Spataro, 2014; Lampert, 2007).

Strikingly, research on critical thinking in the Bangladeshi EFL context has largely overlooked tertiary EFL teachers' Content Knowledge (CK) and Pedagogical Content Knowledge (PCK). Studies on critical thinking in the Bangladeshi EFL teaching context have highlighted teaching strategies and overlooked teachers' critical thinking CK and PCK (Arju, 2010; Islam, 2020; Mehrin, 2020; Sudha, 2018). Moreover, while tertiary EFL teachers' perceived practices and challenges (Adhikari & Ali, 2020; Ahmmed, 2018; Ullah et al., 2022; Zahra, 2012) and integration of critical thinking in secondary level reading classes (Hasan et al., 2022) were investigated, evidence on tertiary EFL teachers' CK or PCK of critical thinking is scarce.

Specifically, existing research indicates that Bangladeshi tertiary EFL teachers have varied and often ambiguous understandings of critical thinking, underscoring a lack of knowledge of critical thinking and a need for further and rigorous investigation. Though teachers are generally confident in their critical thinking knowledge, most have many ambiguities about how to define it (Paul, 2005; Paul et al., 1997). Therefore, existing evidence indicates that most Bangladeshi educators see critical thinking as both abilities and dispositions (Akhter, 2019; Ullah et al., 2022). In the first place, critical thinking is considered reasoning and decision-making skills accompanied by dispositions like honesty, neutrality, unbiasedness, and sympathy (Ullah et al., 2022). Similarly, critical thinking is identified as self-stimulated and self-regulated reasoning coupled with fair-mindedness (Akhter, 2019). On the other hand, Mehrin (2020) defines critical thinking as a standalone skill encompassing creativity, productivity, reflectivity,

metacognition, and problem-solving. The dearth of studies on Bangladeshi teachers' CK and PCK of critical thinking suggests that critical thinking knowledge is lacking among the people of Bangladesh in general, which necessitates the current undertaking.

While critical thinking dispositions motivate individuals to think critically, the act of critical thinking remains incomplete without the application of cognitive skills associated with critical thinking. Hence, critical thinking must be understood from the skill perspective.

Critical thinking skills are a set of cognitive abilities that enable individuals to effectively perform reasoning, decision-making and problem-solving. Facione (2000) defines skills as the ability demonstrated in performance. A person with distinct skills can perform a task that requires them, whereas a person who lacks those skills performs more poorly in those sectors. Scholars (Facione, 2011; Halpern, 2014; Snyder & Snyder, 2008) have categorized a list of abilities treated as critical thinking skills. Critical thinking skills include problem-solving, reasoning, inference, analysis, decision-making, metacognition, and creativity (Anderson et al., 2001; Facione, 2011; Halpern, 2014; Snyder & Snyder, 2008). These significant skills are elaborated below:

Problem-Solving – Problem-solving is synonymous with critical thinking (Snyder & Snyder, 2008), which includes the scientific method and open-mindedness (Tuzlukova & Usha-Prabhukanth, 2018). Thus, critical thinking is problem-based, conscious, and purposeful (Halpern, 2014). In the Bangladeshi tertiary EFL context, problem-solving can enable learners to interpret texts while responding to communicative tasks and engaging in real-life language uses. However, exam-centered EFL education and rigid curricula often restrict teachers from engaging students in problem-solving.

Reasoning - Reasoning is considered one of the most essential sub-skills of critical thinking. The thinker will rationally calculate the course of action and choose the right action that leads to decisions and problem-solving (Halpern, 2014). This skill can enable EFL learners to justify opinions and formulate logical arguments while performing communicative tasks. Nevertheless, teacher-centered classroom dynamics restrict students from analytical discussion and independent reasoning.

Inference – It is the ability to draw logical conclusions and form hypotheses by identifying and selecting elements in the given context (Facione, 2011). Inferencing skills can equip Bangladeshi tertiary EFL learners to interpret the underlying meaning and draw conclusions from a text, and build ideas based on the contextual clues. This

skill is particularly important for reading comprehension, argumentative writing and communicative language use. However, the dominance of the washback effect and rote learning emphasizes factual recall rather than logical interpretation.

Analysis –Analysis refers to activities like comparing and contrasting the real and the underlying meaning of the information provided (Facione, 2011). Hence, analyzing arguments is regarded as a sub-skill of analysis. This skill can help Bangladeshi tertiary EFL learners to compare ideas and extract the implicit meaning of a text by examining perspectives and identifying assumptions. However, usual EFL classroom activities emphasize fixed answers rather than allowing students to engage in deeper textual and argumentative analysis.

Decision-Making – Critical thinking involves making decisions based on analysis and judgment of various data and information (Snyder & Snyder, 2008). Pointedly, aimless thinking that does not lead the thinker to a decision cannot be treated as critical thinking (Halpern, 2014). In the Bangladeshi tertiary EFL context, decision-making can enable learners to choose appropriate linguistic expressions, evaluate contesting ideas in reading texts and select arguments for speaking and writing tasks. Nevertheless, exam-oriented and teacher-led instructional practices restrict learners from making independent decisions.

Metacognition – Metacognitive skills are fundamental to all HOT skills (Anderson et al., 2001), which emphasize reflective thinking (Elder & Paul, 2014; Snyder & Snyder, 2008). Critical thinkers will reflect on their thinking process and judge whether their decisions are correct to improve their thinking process (Paul & Elder, 2014). This skill can help Bangladeshi tertiary EFL learners evaluate their language learning strategies, identify errors in comprehension and regulate their approaches to reading, writing, speaking and listening. However, scarce opportunities for reflective thinking, combined with an exam-oriented education system, restrict the learners from systematic self-evaluation and strategic adjustment, thereby weakening the development of metacognitive awareness in language learning and overall critical thinking development.

Creativity- Thinking creatively is valued as an integral component of critical thinking (Black, 2006), as it promotes the generation of novel ideas and solutions to problems by rearranging ideas and information in unique patterns (Daly, 1995). This skill can enable tertiary EFL learners to use authentic views during speaking and writing activities, develop alternative interpretations of text, and produce more engaging

communication. However, the dominance of the exam-oriented assessment system and limited student autonomy in classrooms reduce opportunities for students to experiment with linguistic expressions and unique thoughts.

2.3.1.2 Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction

Research on measuring and teaching critical thinking has produced a framework that embodies both dispositions and skills. Facione (1990) has proposed a framework for educators to design critical thinking lessons and assess learners' critical thinking in 'The Delphi Report' or 'Critical Thinking: A Statement of Expert Consensus for Purposes of Educational Assessment and Instruction'. In the report, he introduced the California Critical Thinking Skill Test (CCTST), which must be administered with the California Critical Thinking Disposition Inventory (CCTDI). The Delphi Report (Facione & Facione, 2013; Ghadi et al., 2015) clarifies the link between critical thinking dispositions and critical thinking skills, as shown in Figure 2.1.

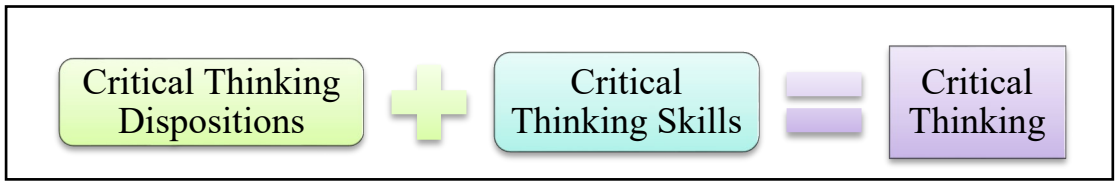

Figure 2.1 Critical Thinking Framework (Facione & Facione, 2013; Ghadi et al., 2015)

Figure 2.1 explains that critical thinking dispositions are integral to critical thinking skills; the latter cannot be realized without the former. Critical thinking dispositions lead to critical thinking skills, and both together result in the right kind of critical thinker (Facione & Facione, 2013). Interestingly, scholars are divided on whether critical thinking is only skills or a combination of dispositions and skills (Evans, 2020). Kuhn (1999) views critical thinking as a cognitive and HOT skill, encompassing metacognitive thinking, necessary for advanced thinking. Specifically, failure to engage in meta-strategic thinking, which indicates supervising mental strategies, adversely influences critical thinking ability.

Many studies on critical thinking in the EFL educational context highlight it as solely cognitive skills while overlooking the dispositional aspect of critical thinking. Some studies (Alsaleh, 2020; Erdoğan, 2019; Pardede, 2020) emphasize the inclusion of only critical thinking skills in EFL classes, while others (Erdoğan, 2019; Alsaleh, 2020) recognize critical thinking as problem-solving. Erdoğan (2019) underscores the integration of 21st-century skills with four language skills. In contrast, both Erdoğan (2019) and Pardede (2020) argue for critical thinking as a cognitive process, citing related scholars (Facione, 1990; Halpern, 1997; Elder & Paul, 1994) who included dispositions in their definitions of critical thinking. These authors have deliberately neglected the dispositional feature despite acknowledging influential models of critical thinking (Facione, 1990; Halpern, 1997; Elder & Paul, 1994).

Recent research underscores that critical thinking needs both dispositions and skills, supported by epistemological and metacognitive understanding of how they work together. Theoretical approaches (Facione, 2011) and empirical inquiries (Bloch & Spataro, 2014; Karahan et al., 2022; Pu et al., 2019; Sandoval et al., 2022) acknowledge disposition as an indispensable element of critical thinking. On a broader ground, it is argued that teaching critical thinking dispositions and skills is ineffective without epistemological understanding (p. 204), a metacognitive understanding of how both dispositions and skills work together (Nieto & Saiz, 2011).

In essence, critical thinking entails both skills and dispositions. Therefore, while developing curriculum and instructional plans, teachers must incorporate activities that simultaneously enhance critical thinking dispositions and skills; otherwise, the critical thinker will not be able to utilize either properly.

2.3.1.3 Critical Thinking and Culture

As a prime concern, the cultural aspect of critical thinking reinforces the significance of critical thinking dispositions. Cross-cultural comparative lessons help nurture the learners' critical thinking dispositions, such as fair-mindedness and open-mindedness which enable them to assess content unbiasedly and accept varying perspectives on the same idea or event (Kakai, 2000). Thus, making meaning of the content through unbiased and flexible dispositions using cross-cultural comparative lessons facilitates learners' successful critical thinking.

Distinctively, empirical studies strengthen the interdependence among culture, critical thinking dispositions, and skills. A study among 212 U.S. youth leaders revealed a correlation between critical thinking skills and their innovativeness and engagement dispositions, emphasizing culture's role and advocating broader cultural exposure (Ricketts & Rudd, 2005). In contrast, some contend that educational background is more important than culture in promoting learners' critical thinking (Lun, 2010; Lun et al., 2010).

Remarkably, the debate over the presence of critical thinking skills in the Asian culture reconfirms the matrix of culture, critical thinking dispositions, and critical thinking skills. While Western teachers contend that Asian cultures lack critical thinking dispositions (Lu et al., 2021; Oda, 2008; Rear, 2017), Asian authors defend it by claiming the critical thinking styles of Asians and Western individuals are different – one is dialogical, and the other is monological (Lu et al., 2021; Oda, 2008). However, contradictory reports show both the existence (Muniroh, 2021; Ordem, 2017; Wei & Hu, 2018) and the absence (Akhter, 2019) of critical thinking dispositions in the Asian context. Nonetheless, Bangladeshi cultural prejudices and restrictions prevent Bangladeshi undergraduate EFL learners from engaging in critical thinking in class (Akhter, 2019). Thus, the role of culture in critical thinking underscores that it combines skills and dispositions.

2.4 Bloom's Taxonomy of Educational Objectives

Bloom's taxonomy of educational objectives is regarded as one of the dominant theories of learning and teaching critical thinking. The cognitive domain of the taxonomy explains the development of thinking in a one-way hierarchical order. The taxonomy originated by Benjamin Bloom in 1974 had six levels of thinking: knowledge, comprehension, application, analysis, synthesis, and evaluation (Seddon, 1978; Paul, 1985). These six levels were arranged so that knowledge and thinking become increasingly complex and abstract (Moore, 1982; Krathwohl, 2002). Each level of taxonomy reflects the level of complexity of students' behavior. The objective of taxonomy is that the learning outcomes result from the teaching instructions. Later, Anderson et al. (2001) revised the taxonomy, addressing the noun-verb duality by dissociating them – noun as the knowledge domain and verb as the cognitive process domain. While the knowledge dimension classified the knowledge diversities, the

cognitive process dimension revised and reorganized the items in the original taxonomy (Krathwohl, 2002). This revised Bloom's taxonomy was primarily designed to develop curricular objectives and test items to determine their coverage in the objectives and the test items (Krathwohl, 2002). Figure 2.2 shows the hierarchy of the revised taxonomy:

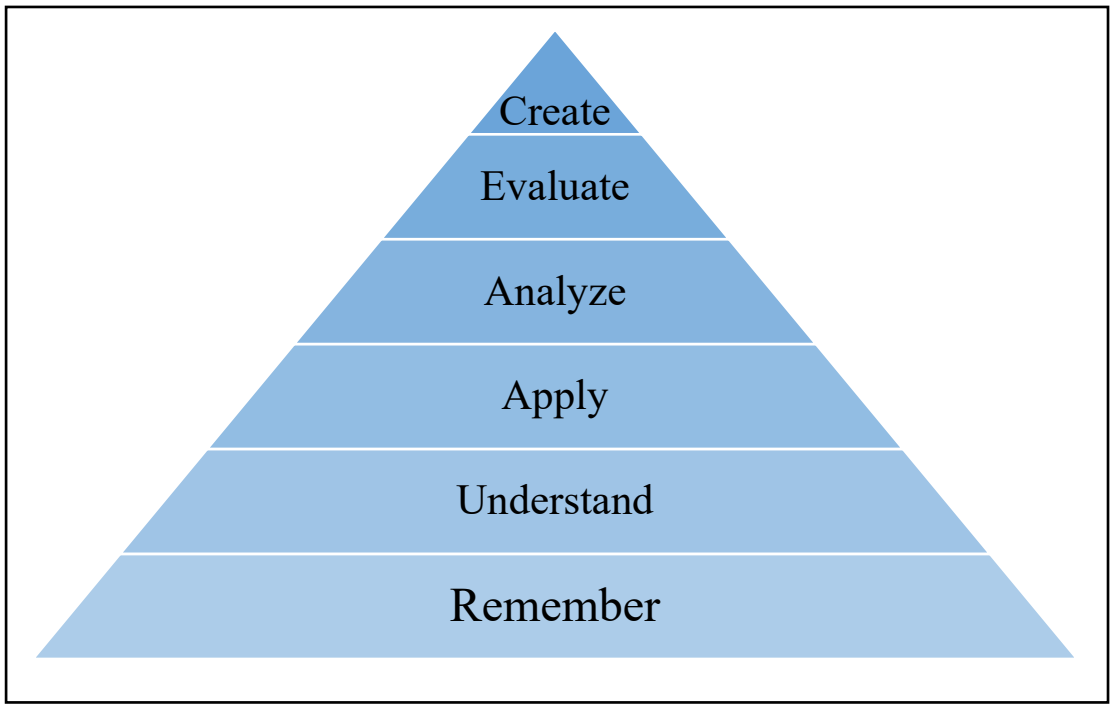

Figure 2.2 The Revised Bloom's Taxonomy

The revised Bloom's taxonomy (Westbrook, 2014) in Figure 2.2 is based on the taxonomy developed by Krathwohl (2002) and Anderson et al. (2001). The taxonomy serves as a guideline for educators to select teaching topics at a specific complexity level and to construct questions accordingly. The six levels of the cognitive process dimension are discussed below, as explained by Anderson et al. (2001):

Firstly, remembering is using memory to produce or retrieve data, definitions, and lists (Wilson, 2016), comprising recognizing and recalling information from memory (Anderson et al., 2001; Wilson, 2016). Secondly, understanding is the construction of new meanings based on teachers' instructions, provided in oral, written, or graphic forms, for example, using maps and computer simulations (Anderson et al., 2001; Wilson, 2016). Understanding tasks such as interpreting, exemplifying, classifying, summarising, inferring, and comparing can be assessed through a range of activities (Anderson et al., 2001). Thirdly, applying means executing and implementing cognitive processes (Anderson et al., 2001). Fourthly, analysis breaks down the

material into its parts to understand their connections and the content's organizational pattern. Analysis includes contrasting, organizing, and attributing, which can work together in contrast or in conjunction (Anderson et al., 2001). Fifthly, evaluation is checking for standards and criticizing the content, for example, looking for the quality, effectiveness, efficiency, and consistency of the particular opinion. Sixthly, creating involves reorganizing the constituents of content to produce new products or generate clear ideas that are not present in it, and it involves generating ideas, planning a course of action, and producing or executing the plan to solve the problem (Anderson et al., 2001).

The revised taxonomy offers a structured framework for developing learners' critical thinking by connecting HOTs with staged cognitive levels in teaching, learning and assessment. Particularly, this taxonomy is important for teaching and learning critical thinking as it enables language teachers to connect HOTs with language and cognition and guides them to design and implement ideas and particularly assessments, according to the target cognitive levels (Muhammad & Rashid, 2024; Setyowati et al., 2022). This taxonomy allows the learners to go beyond memorization and analyze and evaluate information by providing a guideline with staged difficulty levels, making critical thinking an organized and achievable learning outcome (Anderson et al., 2001; Melati & Rasyid, 2023; Zapalska et al., 2018). Therefore, the revised taxonomy provides a systematic structure to foster learners' critical thinking through designing leveled activities and assessment modules.

2.4.1 Theory of Critical Thinking: Bloom's Taxonomy and Critical Thinking

Critical thinking skills are classified as Higher Order Thinking (HOT) skills in Bloom's taxonomy. They correspond to the analysis, synthesis, and evaluation levels of the original taxonomy and analysis, evaluation and creation levels of the Revised Bloom's Taxonomy (Miterianifa et al., 2020; Snyder & Snyder, 2008; Winanda & Anwar, 2022). On the other hand, knowledge, comprehension, and application are regarded as Lower-Order Thinking (LOT) skills. Table 2.1 explains the individual critical thinking skills and their similarities with the HOT skills in Bloom's taxonomy.

Table 2.1

Alignment between Critical Thinking Skills and Cognitive Process Dimension

Critical Thinking Skills	The revised Bloom's taxonomy (Anderson et al., 2001)
Analyze and interpret (Facione, 2011; Heard et al., 2020)	Analysis
Evaluation, self-regulation, and inference (Facione, 2011; Heard et.al., 2020)	Evaluate
Problem-solving, decision-making (Snyder & Snyder, 2008)	Create

Thus, critical thinking skills are inherent in Bloom's original and revised taxonomy. Naturally, the taxonomies have revolutionized 21st-century education, though initially they were applied to only a limited number of science subjects (Moore, 1982).

2.4.2 Teaching Critical Thinking Skills with Bloom's Taxonomy

Teaching critical thinking requires strategies that enable learners to go beyond Lower Order Thinking (LOT) and engage in Higher Order Thinking (HOTs). This involves using content that goes beyond memorization (Snyder & Snyder, 2008) and strategies like questioning that engage students in HOT skills as per Bloom's taxonomy. This is the procedural knowledge about the taxonomy that the teachers need to possess and practice to teach critical thinking. Traditionally, questioning within the framework of Bloom's taxonomy is regarded as one of the most effective ways to incorporate critical thinking in the classroom (Anderson et al., 2001; Ennis, 1987; Fahim & Bagheri, 2012; Walker, 2003; Şeker & Kömür, 2008) as the taxonomy guides the teachers to ask questions related to the specific levels of the taxonomy (Fahim & Bagheri, 2012; Linh & Thanh, 2022).

Effective teaching of critical thinking involves questions that encourage learners to move beyond fixed responses and supports it integration into curricula, textbooks and assessments. In this connection, Feng (2013) advocates that teachers use WH-, referential and unpredictable questions that engage the students' schemata. Since these questions have no fixed answers, students feel safe to share their explanations. In this case, the teacher must ensure that students are not pressured to answer correctly (Feng, 2013). At present, the lists of action verbs related to the six levels of thinking

are available on the websites of many Western universities and fields of education to facilitate the curriculum planners, educators, and learners (British Columbia College of Oral Health Professionals; Indiana University of Pennsylvania; University of Illinois Chicago, 2023). Inevitably, studies signified the inclusion of HOT questions in textbooks (Nakkam & Khamoja, 2020; Qasrawi & BeniAbdelrahman, 2020), test questions (Belarbi & Bensafa, 2020; Johansson, 2020), and classrooms. Accordingly, the looming account highlights research related to HOT inclusion in teaching instructions.

2.4.3 Teaching Critical Thinking in the EFL Context with Bloom's Taxonomy

The field of ELT benefits from teaching critical thinking to EFL learners worldwide. For example, the implementation of Bloom's taxonomy-based critical pedagogy in an Iranian classroom proved successful in enhancing learners' engagement with the curriculum and interaction skills (Shareef & Sadiq, 2023). Similarly, an experiment with a Bloom's taxonomy-based flipped classroom model discovered a positive correlation between EFL learners' HOT skills and satisfaction and engagement (Alsowat, 2016). Likewise, Pakistani EFL students who received Bloom's taxonomy-infused teaching instructions showed greater critical thinking skills than those who received traditional instructions (Niazi et al., 2021).

Moreover, several studies have explored EFL teachers' use of HOT questions in their classes. In Iranian EFL classrooms, teachers use questioning as the only method to incorporate critical thinking (Knomari et al., 2021). In addition, Thai tertiary EFL classes are still teacher-centered, in which teachers provide answers to inferential questions and students are restricted from sharing individual opinions, which discourages learners' critical thinking (Prommak, 2019). However, Nepalese EFL teachers view critical pedagogy positively and incorporate critical thinking through opinion sharing, debates, and discussion (Paudel, 2020). Most strikingly, Bangladeshi public and private university teachers promote democratic practices like allowing students from various races, ethnicities, genders, and beliefs to oppose any dichotomy or power disparity and proclaim social justice, raise their voices for equity and against oppression in their classes to raise politically aware citizens (Adhikari & Ali, 2020; Ahmmed, 2018). Such democratic practices of teachers are beneficial for developing

learners' critical thinking dispositions (Bickmore, 2014; Collins et al., 2019; Nikolaou, 2021; Sant, 2019; Seigel & Rockwood, 1993).

Nevertheless, South Asian EFL teachers face problems in incorporating HOT in classes. Problems include inadequate emphasis on critical thinking in the Nepalese curriculum (Paudel, 2020), Chinese teachers' inability to dispense explicit critical thinking instruction because of their poor HOT skills and expertise (Shen & Yodkhumlue, 2012), backdated curriculum, materials and instruction styles, financial and logistic constraints to teacher and material developments, teachers' lack of motivation in Sri Lanka (Liyanage, 2012). Similarly, the Bangladeshi curriculum lacks focus on social and political content (Adhikari & Ali, 2020).

Undoubtedly, the corpus of the studies reflects the growing interest in critical pedagogies in Asia, particularly in South Asia, where EFL teachers still struggle to materialize Bloom's taxonomy within critical pedagogy. However, the pair of studies (Ahmmed, 2018; Adhikari & Ali, 2020) is a weak corroboration of the contexts due to the absence of problem statements (Adhikari & Ali, 2020; Ahmmed, 2018), inadequate rationale and effort to corroborate validity and reliability, and elaborations on research methodology (Ahmmed, 2018). Likewise, the absence of correlation among variables (Prommak, 2019), the lack of methodological clarity (Paudel, 2020), and the reliance on self-reports (Adhikari & Ali, 2020; Ahmmed, 2018; Paudel, 2020) highlight theoretical and methodological gaps that the present project intends to address. In essence, the reviewed studies indicate that Bloom's taxonomy-based critical pedagogy has the potential to enhance learners' critical thinking. Consequently, there remains a strong need for context-sensitive and methodologically robust research to address the gaps in the existing gaps in literature regarding how Bloom's taxonomy can effectively foster learners' critical thinking within the South Asian tertiary EFL context, particularly in Bangladesh.

2.5 Vygotsky's Social Constructivism

Constructivist theory views learning as an active, learner-centered process in which learners actively construct knowledge rather than acting as a passive receiver of knowledge. Constructivism is a teaching and learning method based on the principle that learning is the outcome of "mental construction" (p. 66), in which students integrate new information with their existing knowledge. Context, students' beliefs, and attitudes

are vital in teaching and learning (Bada & Olusegun, 2015). It treats learning as an active process where, instead of transferring knowledge from the teacher to the learners, the learners create it themselves (Taber, 2006).

As an extension of constructivist thoughts, social constructivism highlights the interconnected roles of society, language and culture in the learning process. Social constructivism, formulated by Lev Vygotsky as a legacy of Dewey's view of constructivism, is a widely accepted theoretical and practical framework for teaching and learning critical thinking (Loudenback, 2019; Mohamad & Romli, 2021; Akpan et al., 2020). Dewey believed that though the psychological and social aspects of learning are inevitably connected, neither can be ignored nor overlapped by the other (Creed, 1963, cited in Hirtle, 1996). In addition, social constructivism believes that language and culture are the lenses through which humans experience, impart, and comprehend reality (Akpan et al., 2020).

2.5.1 The Social Constructivist Philosophy for Teaching and Learning

The role of a teacher and the mode of instruction and learning have been the center of discussion since the inception of this educational theory. According to Palincsar (1998), social constructivist instruction emerged as an alternative to behaviorist teaching instructions that focus on sharing knowledge from the teacher to the learners and fail to nurture HOT skills. In a social constructivist classroom, students lead the class conversation, with both students and teachers making meaning from their social interaction around the text (Palincsar, 1998).

Social constructivist pedagogy underscores collaborative learning, interaction and guided support as fundamental to learners' cognitive development. The social constructivist teaching and learning philosophy combines Vygotsky's concepts with other research, such as cognitive dialogue, the zone of proximal development, social interaction, culture, and inner speech (Powell & Kalina, 2009, p. 243). This emphasizes that a child learns more effectively with others' help, signifying cooperative learning. Though the child tries to solve it alone, it gets teachers' support whenever needed (Vygotsky, 1986). Completing a task activates the child's Zone of Proximal Development (ZPD), allowing it to engage in more similar activities. In a social constructivist class, students' knowledge achievement depends on their level of engagement in group work. Hence, a teacher should acknowledge and encourage the

interaction between the diversities, e.g., culture, identity, and biology of the learners and express their dissimilar viewpoints on the same topic at the same time, simultaneously counselling them about cultural diversities (Powell & Kalina, 2009).

In the view of social constructivists, language prominently influences knowledge construction by shaping the child's concept of the world. The role of language is to establish communication, which is "social contact" (Hirtle, 1996, p. 91). The theory holds that language arises with consciousness, even before thinking. Vygotsky (2012) specifies that language is not connected to thought but to one's consciousness, where meaning serves as the medium of this connection. Consciousness, along with meaning, sprouts sense, while consciousness gains a meaningful form – language. The theory posits that collaboration and cooperation among the teacher, learners, and other adults through language enable learners to construct the meaning of the given problem or information. Therefore, the more effectively students use language for classroom communication, the better they can learn (Powell & Kalina, 2009).

The above discussion indicates that the characteristics of critical thinking teaching discussed in section 2.14 and those of constructivist teaching are identical in their learner-centeredness, HOT and problem-solving skills, learner autonomy, interactive learning, and active learning. With this understanding, the following sections will elaborate on the implementation of constructivism in the EFL context to promote critical thinking.

2.5.2 Constructivist Models for Teaching Critical Thinking in the EFL Classroom

Constructivism arguably advances an effective framework to foster critical thinking in the EFL context through collaborative and reflective knowledge construction. Within the general concept of constructivism, various approaches can be applied to teaching critical thinking in EFL classes; constructivism is particularly suitable for enhancing critical thinking in a Second Language Acquisition (SLA) context, as language learning intently demands knowledge constructions through social interaction and reflections on the experiences (Yang & Gamble, 2013; Yang & Wilson, 2006; Zaker, 2016).

Evidently, collaborative and constructivist instruction promotes learners' critical thinking and language skills in ESL contexts. Thus, Spanish learners showed

remarkable improvement in self-confidence, self-awareness, motivation, and language skills through individual and collaborative tasks, with teachers' support in portfolio keeping, a constructivist model (Xamaní, 2013). Similarly, the social constructivist approach promotes EFL learners' analysis, synthesis, and foreign-language proficiency simultaneously (Minakova, 2014). Moreover, technology-based critical thinking integrated into EFL instruction improved learners' analytical, evaluative, inferential, inductive, and deductive skills, as well as English reading and writing proficiency (Yang et al., 2014).

Furthermore, an expansive body of international literature underscores a global shift toward implementing unique social constructivist critical thinking teaching and learning strategies. In Taiwan, integrating debate and peer critique significantly improved tertiary EFL learners' language proficiency and critical thinking skills (Yang & Gamble, 2013). Likewise, constructive teaching approaches such as scaffolding, WH-questions, and Socratic questioning, along with content that includes social, economic, and political aspects, can successfully activate Omani tertiary EFL teachers' and learners' critical thinking (Samarasinghe, 2017). Moreover, online project-based activities as a constructivist method effectively improve English learners' analytical, evaluative, collaborative, and communication skills (Chen, 2019). Additionally, blogging as a constructivist approach helps develop Turkish pre-service EFL teachers' critical thinking by providing opportunities for collaboration, autonomy, and knowledge construction (Kaçar, 2020). Besides, critical reflection within the constructivist motivational paradigm enhanced Ethiopian English learners' critical writing skills (Alem, 2019). Furthermore, in the Malaysian university context, YouTube videos within a constructivist framework contributed to the development of EFL students' problem-solving and critical thinking skills (June et al., 2014). Finally, concept mapping as a constructivist approach effectively improved Iranian EFL learners' critical thinking (Khodadady & Ghanizadeh, 2011).

In addition, research highlights a wide range of constructivist activities and instructional strategies as suitable to enhance both critical thinking and language proficiency. Within the constructivist framework, technology-assisted EFL activities and instructional strategies enhance learners' critical thinking through collaborative opportunities, deeper engagement in decision-making and problem-solving. For example, digital storytelling (Al-Shaye, 2021; Wan et al., 2008), technology-integrated inquiry-based learning (Avsec & Kocijancic, 2016), technology integration (Lu & Xie,

2022; Rungsawang & Pookcharoen, 2023), use of social media (Pattanapichet & Wichadee, 2015), online role-playing (Lin, 2010) and online discussions (Chiu, 2009) have been found effective in promoting EFL learners' critical thinking and language skills. These strategies are effective for enhancing EFL learners' critical thinking, as they support learners' reflective and metacognitive thinking through active engagement in the learning process (Nur, 2025). Moreover, they can enhance learners' analytical, evaluative, and inferential abilities (Wei & Li, 2024) by creating opportunities to explore multiple perspectives on a topic, question assumptions, justify opinions with evidence, and negotiate meaning through technology-mediated interaction. Thus, technology-assisted EFL instruction facilitates both language learning and critical thinking development by enabling learners to go beyond surface-level thinking through questioning and justifying ideas and constructing knowledge through sustained cognitive and social negotiation. Accordingly, these activities should be utilized for contextualized integration of critical thinking in EFL classrooms.

Moreover, collaborative and interactive learning, such as group reading activities (Namsaeng & Sukying, 2020), online role-playing (Lin, 2010), online discussions (Chiu, 2009) and project-based learning (Abed, 2020; Andargie et al., 2025), debate (Budiastuti, 2025; Paudel, 2025) and collaborative strategic reading (Amumpuni et al.., 2025) further support EFL learners' critical thinking through greater engagement in meaningful communication, shared problem-solving and knowledge construction. While digital collaborative activities can enhance EFL learners' reflective thinking and scaffolding for critical reading comprehension, which strengthens their analytical abilities (Wafiroh et al., 2024), collaborative activities in general facilitate their evaluative and critical thinking, creating opportunities for shared ideas and peer feedback (Kalukar et al., 2024). Particularly, project-based learning enhances EFL learners' critical thinking by facilitating their reflective thinking, argumentation, inquiry-based learning, self-regulation and autonomy (Cao, 2024; Song et al., 2025; Susanti et al., 2023). Specifically, these activities significantly improve EFL learners' analysis and interpretation skills Hu et al., 2026). Therefore, collaborative activities improve learners' critical thinking by externalizing their reasoning and refining their analytical and evaluative judgments through peer feedback. Hence, collaboration should be facilitated in the tertiary EFL context to promote critical thinking that the learners will find more relatable.

Besides, as a model of a constructivist approach, literacy and reflection-based strategies can enhance critical thinking by supporting analysis and interpretation. For instance, story reading (Sahibzada et al., 2021), critical reading (Doğan & Tosun, 2019), strategic reading (Amumpuni et al., 2025) and portfolio keeping (Öztürk & Çeçen, 2007) encourage learners to interpret texts critically, reflect on their learning processes and develop deeper cognitive engagement. These strategies are effective for an EFL context as they slow down language learning and require the learners to deeply engage in meaning-making, allowing them to explore meaning beyond the surface through analyzing and interpreting ideas, evaluating perspectives and relating textual information with their background knowledge in a reflective manner.

Likewise, contextual and experiential learning as constructivist strategies promote EFL learners' critical thinking. In this connection, contextual learning (Ali & Pabur, 2023) and project-based learning (Abed, 2020; Andargie et al., 2025) also promote EFL learners' critical thinking by situating language learning in real-life contexts that require them to apply schema, make informed decisions and effectively solve problems. These constructivist language learning models are effective in developing learners' critical thinking as they require the learners to employ language for meaningful reasoning and problem-solving.

Furthermore, critical thinking in EFL classes can also be promoted through inquiry and discovery-oriented approaches that engage learners in interpreting and evaluating information. In this concern, inquiry-based learning (Ghaemi & Mirsaeed, 2017; Syam, 2021) and guided-discovery (Yaiche, 2021) are some of the constructivist strategies suggested for developing EFL learners' critical thinking. Perceptively, the extent of the application of social constructivist teaching instructions in the Bangladeshi tertiary EFL context remains to be explored. In particular, the inquiry-based learning approach enhances EFL learners' interpretation and analysis through identifying, examining and analyzing different viewpoints, evaluation through making comparisons and logic development and inferencing through identifying recurring ideas and formulating hypotheses (Wale & Bishaw, 2020). However, Yue et al. (2023) found that inquiry-based learning did not improve Chinese tertiary EFL learners' inferencing and evaluating skills. Hence, this constructivist approach to developing EFL learners' critical thinking should be implemented by considering the contextual factors of the learners. By allowing learners to actively engage with ideas and contexts, these approaches enhance learners' critical thinking in the EFL context.

Finally, problem-based learning is considered an effective constructivist approach to teaching critical thinking and English (Firdayati & Napitupulu, 2026; Purmayanti et al., 2026; Uyun et al., 2026). In the EFL context, this constructivist approach promotes learners' critical thinking, allowing them to engage in authentic problem-solving experiences that require purposeful communication, reasoning and decision-making. Consequently, the present project aims to observe Bangladeshi tertiary EFL teachers' implementation of social constructivism in teaching critical thinking.

Moreover, constructivist feedback is necessary for developing learners' critical thinking. Constructivist feedback refers to formative feedback that is gradual, instant, and interactive, in which students actively participate in the assessment (Rabbani et al., 2025). Within formative feedback, the teachers provide positive encouragement, uplifting learners' confidence and self-esteem (Nicol & Macfarlane-Dick, 2007). Formative feedback strengthens learners' cognitive abilities by enabling teachers to identify strengths and weaknesses and adjust their instructional styles for effective learning.

Constructivist feedback was effective in enhancing learners' HOTs and critical thinking (Almousa, 2023; Ndolo, 2021; Waskito et al., 2024). It helps develop the learners' critical thinking by actively involving them in meaning-making rather than remaining passive recipients of knowledge (Pritchard, 2009). In addition, it enhances the learners' motivation for critical thinking and their ability to think critically (Kwan & Wong, 2015; Le & Nguyen, 2024). Overall, evidence shows that constructivist approaches offer a comprehensive and effective framework to foster critical thinking and language proficiency through collaborative and learner-centered practices. Moreover, the studies highlight the importance of integrating interactive, contextually connected and technology-integrated instructional strategies to create opportunities for meaningful and shared knowledge construction and HOT practices in EFL classrooms.

2.5.3 Challenges of Constructivist Teaching in the EFL Classroom

Implementing constructivist approaches poses multifaceted challenges for 21st-century teachers encompassing several dimensions. Adopting and adapting to a constructivist teaching approach poses challenges for 21st-century teachers owing to conceptual, pedagogical, cultural, and political dilemmas concerning these practices

(Windschitl, 2002; Cornu & Peters, 2002; Van & Quoc, 2022). Conceptual dilemmas arise when teachers strive to realize constructivism's philosophical, psychological, and epistemological views (Windschitl, 2002). Next, teachers face dilemmas in choosing suitable materials and assessment methods (Cornu & Peters, 2002). A cultural dilemma is the shift in power from the teacher to the students in a student-centered class (Windschitl, 2002). Finally, political dilemmas arise from resistance by divergent stakeholders within institutions to the reorientation of institutional rules and regulations and to shifts in power dynamics (Windschitl, 2002). In this connection, Vietnamese pre-service English teachers at universities encountered cultural issues when implementing constructivist teaching (Vu, 2020).

However, existing research on constructivist teaching in Bangladesh has overlooked the tertiary EFL context, creating a gap in understanding tertiary EFL teachers' constructivist practices. Most studies investigated the problems of constructivist teaching in school and college settings (Islam, 2019; Melesse & Jirata, 2015; Zhang & Kim, 2018; Tyas et al., 2019), particularly in Bangladeshi higher secondary (Islam, 2019) and secondary (Jahan et al., 2021) educational contexts, excluding a focus on the tertiary context. Consequently, the substantial lack of understanding regarding constructivist teaching practices in the Bangladeshi tertiary EFL context guided the study's exploration of Bangladeshi tertiary EFL teachers' limitations in understanding, valuing, and practicing constructivist teaching.

2.6 Self-Determination Theory

Self-determination theory explains human motivation in terms of the need for relatedness, competence and autonomy for growth and well-being. Self-determination theory (Ryan & Deci, 2000) centers on humans' desire for personal growth over time and for self-regulation of behavior. The theory suggests that an individual's deep-rooted thirst for relatedness, competence, and autonomy must be quenched to improve self-motivation and preserve well-being (Ryan & Deci, 2000).

Autonomy is associated with an individual's sense of agency and self-directed engagement in their actions and behaviors. The need for autonomy means a sense of power, willingness and balance while an individual strives to accomplish a task that they are involved in (Rubic & Matijević, 2019). Instead of external rewards, deadlines, directions, evaluations and fixed goals, choices, options and opportunities for self-

direction are related to autonomy-related intrinsic motivation (Ryan & Deci, 2000). However, autonomy does not mean complete freedom; rather, it involves internalizing the principles and importance of specific behaviors (Rubic & Matijević, 2019). In the Bangladeshi tertiary EFL context, teachers' autonomy is constrained by an exam-centered education system and rigid curricula, limiting their opportunities to integrate critical thinking into instruction.

Competence means the individual's desire to feel capable of performing the task while interacting with the environment (Broeck et al., 2010). Positive performance feedback is considered to enhance this desire (Ryan & Deci, 2000). In this connection, many Bangladeshi tertiary EFL teachers lack the knowledge and skills to teach critical thinking due to insufficient training and professional development support. They may lack the self-confidence to integrate critical thinking into the class. Consequently, they prioritize LOT development and rely on lecture-based instructional approaches.

Relatedness, defined as the feeling of connection (Ryan & Deci, 2000), is particularly strained in Bangladeshi EFL contexts where large class sizes and hierarchical teacher-student dynamics prevent meaningful connections between teachers and students.

Intrinsic motivation is the natural inclination for innovation and the desire to exercise one's skills and abilities to probe and learn (Ryan & Deci, 2000). However, the individual lacks the natural drive and must find external motivators to complete the task with persistence and quality, thereby ensuring their well-being. When an individual enters a new environment, they must accept the prescribed values and adopt behaviors that may not interest them. Later, as the individual comes to see the behavior as benefiting him or her and it is significantly valued by many others around him/her, he/she adheres to it (Ryan & Deci, 2000). Therefore, SDT underscores that sustained motivation and well-being are achieved by addressing the need for autonomy, competence and relatedness through support and gradual internalization within social and learning environments. This balance between internal motivation and external conditions is crucial to ensure consistent behavioral development.

2.6.1 The Relationship between Intrinsic and Extrinsic Motivation – A Continuum between Relatedness, Autonomy and Competence

Ryan and Deci (2000) view intrinsic and extrinsic motivation as a continuum, arguing that both external controls and individual autonomy are necessary in an institutional system. On one side, the complete omission of external control often leads people to inactivity and subsequent unproductivity. Conversely, the sheer privation of autonomy will dull the action, resulting in poor performance. External control means not simply imposition, but providing the necessary support, recognition, and connection from peers and institutions that create a sense of relatedness and belonging (Escandell & Chu, 2023). Imperatively, a balance of autonomy and external controls will foster an enjoyable environment, enhancing the individual's coping mechanism. Eventually, the external, introjected, and self-regulated approach to accomplishment will lead to the internalization of behavior and intrinsic motivation. On the contrary, the deprivation of fulfillment will cause mental ill-being. Moreover, achievements driven by intrinsic motivation are more closely correlated with well-being than those driven by extrinsic motivation, because activities driven by intrinsic motivation fulfill innate desires (Ryan & Deci, 2000).

In essence, children, parents, students, teachers, and employees must pursue achievements that are demanded of them within the standards of cultures, societies, schools, families, and workplaces. If this external push for attainment is not translated into intrinsic motivation, it will adversely affect a person's long-term mental growth, productivity, and socio-cultural development. In this regard, Ryan and Deci (2000) stress that the systems in which individuals operate must facilitate the psychological needs for autonomy, competence, and relatedness through rewards and supervision. Thus, intrinsic and extrinsic motivation work in complementary ways, supported by opportunities for autonomy, competence, and relatedness. Accordingly, the present study investigated Bangladeshi tertiary EFL teachers' feelings of autonomy, competence, and relatedness regarding the integration of critical thinking into classroom instruction.

2.6.2 Teachers' Self-Determined Motivation and CPD

Teachers' self-determined motivation can significantly elevate their and their students' critical thinking. For example, empirical studies among 523 Chinese school teachers (Zhang et al., 2022) and Dutch teachers' (Aelterman et al., 2016) affective factors reveal that self-determination strongly impacts their positive feelings and CPD. Likewise, the desire for competence, relatedness, and autonomy notably contributed to the well-being of UK novice teachers. However, newly recruited schoolteachers in England required multilayered support from the school for their well-being (Hobson & Maxwell, 2017). Surprisingly, Chinese EFL teachers are mostly extrinsically motivated, indicating a lack of self-determined motivation, which limits their CPD (Yang, 2021).

2.6.3 EFL Teacher Motivation and Teaching Critical Thinking

Tertiary EFL teachers' motivation to teach critical thinking is shaped by various contextual, institutional and pedagogical factors rather than being directly connected to learners' performance outcomes. Many 21st-century tertiary EFL teachers lack the motivation to teach critical thinking (Khodabakhshzadeh et al., 2017; Ullah et al., 2022). In Iran, EFL teachers experience low motivation, discomfort and pressure when trying to teach critical thinking in EFL classes using new methods (Khodabakhshzadeh et al., 2017). Similarly, inadequate knowledge of and training in teaching critical thinking, inappropriate curriculum, and the intricacies of adjusting to the flipped roles of teachers and students work as external factors contributing to their poor motivation in the Bangladeshi ELT context (Ullah et al., 2022). However, some evidence disclosed a weak connection between EFL teachers' motivation and EFL learners' performance (Sato et al., 2022).

Studies on teachers' self-determination and critical thinking are meager. Empirically, there exists a positive association between EFL teachers' self-efficacy and their critical thinking skills (Rashtchi, 2021; Zangenehvandi et al., 2014). Interestingly, many studies explored EFL teachers' motivation from unprecedented standpoints, such as EFL teachers' motivational complexities (Zheng & Huan, 2022), the connection between motivation and exhaustion (Roohani & Dayeri, 2019; Sato et al., 2022), CPD practices of Saudi EFL teachers (Alzahrani, 2019) and motivational factors (Khan,

2011). However, the limited availability of evidence on the interconnectedness of tertiary EFL teachers' critical thinking knowledge, motivation and practices led the present study to address this theoretically informed knowledge gap.

2.6.3.1 Bangladeshi Tertiary EFL Teachers' CPD

Maintaining professional development and well-being in teaching needs gradual internalization of motivation through transforming external incentives into autonomous and self-directed engagement. According to self-determination theory, extrinsic motivation must evolve into intrinsic motivation over time to ensure professionals' long-term well-being (Ryan & Deci, 2000). Consequently, teachers' self-directed and autonomous activities that reflect their intrinsic motivation are essential for professional growth.

Regrettably, limited institutional support has constrained Bangladeshi tertiary EFL teachers' preparedness, resulting in their reliance on experiential learning that fails to align with contemporary pedagogy. Bangladeshi tertiary EFL teachers' PD experiences are limited (Rahman et al., 2019; Shiddike & Rahman, 2019). Since pre-service training is not a recruitment prerequisite (Raqib, 2019), universities refrain from arranging teacher training to reshape teaching practices (Islam et al., 2021; Marzan, 2021; Raqib, 2019; Shahidullah & Rahaman, 2022), leading teachers to learn from their experiences that do not meet the present-day demand (Raqib, 2019).

However, despite the availability of formal teacher education programs, their incoherent structures and misalignment with professional standards limit their potential to ensure sustained and globally recognized professional development. Only a few occasional training programs are provided, including the Post Graduate Diploma in Higher Education Teaching (PGDHET) organized by the Bangladesh University of Professionals (BUP) (Shahidullah & Rahman, 2022). In addition, pre-service EFL teachers can avail sundry teacher education programs, e.g., 'MA in ELT' or 'MA in TESOL (Karim et al., 2020; Marzan, 2021). The duration of these TESOL courses ranges from 1 to 1.5 years (East West University, 2022; North South University, 2023; BRAC University; University of Liberal Arts Bangladesh, 2022). Especially, though these programs help EFL teachers synchronize their classroom practices with current market demand (Karim et al., 2020), none of them is CPD-accredited. CPD accreditation is the verification of educational undertakings against industry standards

(The CPD Standards Office, 2023). Consequently, the long-term impact of these TESOL courses on EFL teachers' CPD may not meet international standards.

Thus, CPD in the Bangladeshi EFL context depends on ongoing and principle-based learning that supports the gradual professional development of teachers. Considering the importance of CPD, Khan (2009) suggests in-service and pre-service training, taking higher education courses, reading journal articles, attending conferences, seminars, and workshops, becoming members of professional associations, doing action research, and enhancing technological literacy as some of the ways to upgrade PD of EFL teachers in Bangladesh. In succession, admitting the difficulties of CPD for Bangladeshi teachers, she mentioned:

> Applying this model of PD to the Bangladesh ELT context may appear difficult initially. However, if we genuinely relate to the underlying principles of the CPD process, steps may be developed in the long run, making PD doable and exciting. Most importantly, we need to take this concept to heart and cultivate it. (Khan, 2009, p. 11)

Understandably, PD activities among Bangladeshi EFL teachers have not been prioritized, and the conditions at the tertiary level, particularly in the ELT field, have remained unchanged over the decade (Jamil, 2020; Rafique, 2022; Sultana et al., 2010; Sultana, 2019). Additionally, though peer discussion helps identify and solve teaching issues, teachers need to address them critically by researching “professional inquiry” (p.434) for more effective solutions and growing intensive views on their professional growth (Kirkwood & Christie, 2006). Nonetheless, Bangladeshi tertiary educators are inadequately involved in research activities (Shiddike & Rahman, 2019; Sultana, 2019), leading to their unfamiliarity with the latest teaching strategies and knowledge (Kirkwood & Christie, 2006; Shiddike & Rahman, 2019) and segregation from CPD opportunities. On the contrary, recently, Bangladeshi EFL teachers have been leveraging the Internet for CPD activities (Bristi, 2014; Shohel et al., 2022), known as online CPD (Alshaikhi, 2020; Al-Bargi, 2021; Khodjikulova et al., 2020).

In short, because the scopes of PD and CPD for Bangladeshi tertiary EFL teachers are inadequate, Bangladeshi tertiary EFL teachers need to engage in self-directed PD activities with institutional support (Andaleeb, 2022). The study aims to

investigate Bangladeshi tertiary EFL teachers' self-directed motivation to equip themselves to teach critical thinking.

2.6.3.2 Institutional Quality Assurance Cell (IQAC) for Higher Educational Institutes in Bangladesh

The self-determination theory indicates that employees require institutional requirements as push factors to engage in self-directed PD activities and lifelong learning. Hence, acknowledging Bangladeshi graduates' severe underrepresentation in the knowledge society, the UGC, under the Ministry of Education, instituted the IQAC with funding from the World Bank (Ministry of Education, 2015). To support and monitor upgraded teaching practices and learning outcomes, the course contents and designs, a permanent wing of IQAC has been established at every university in the country (Ministry of Education, 2015).

Despite this, the implementation of quality mechanisms in higher education in Bangladesh remains constrained by administrative, financial and methodological drawbacks. Hence, the effectiveness of IQAC is still below expectations due to weak financial solvency (Nahar et al., 2018), lack of coordination between the administrative and academic bodies, and excessive teaching responsibilities and the exclusion of students' voices in ensuring quality (Rahnuma, 2020a). On the other hand, the self-assessment method has limitations that need to be addressed to ensure internal quality (Rahnuma, 2020b). Analyzing various aspects of the quality assurance project from multiple perspectives and the literature, such as the code of practice and the quality assurance improvement cycle, she (Rahnuma, 2020b) has recommended administering teachers' self-assessment.

In summary, the limited effectiveness of institutional quality monitoring and professional development initiatives continues to affect the teaching quality in the Bangladeshi tertiary context. Despite the establishment of IQAC in line with global trends (Ministry of Education, 2015), the quality of teaching at Bangladeshi universities has remained questionable. Though institutional monitoring is central to CPD, Bangladeshi university systems are failing to create opportunities for PD and CPD. In consequence, the present study investigated Bangladeshi EFL teachers' self-directed extrinsic motivation, which enables them to exercise autonomy in PD activities.

2.7 The Innovation-Diffusion Theory

The adapted KAP model under Rogers' (2003) innovation-diffusion theory provides the theoretical foundation for the current study. Figure 2.4 illustrates the adapted KAP model (Rogers, 2003; Roelens et al., 2006; Podder et al., 2020; Jessiman-Perreault et al., 2020).

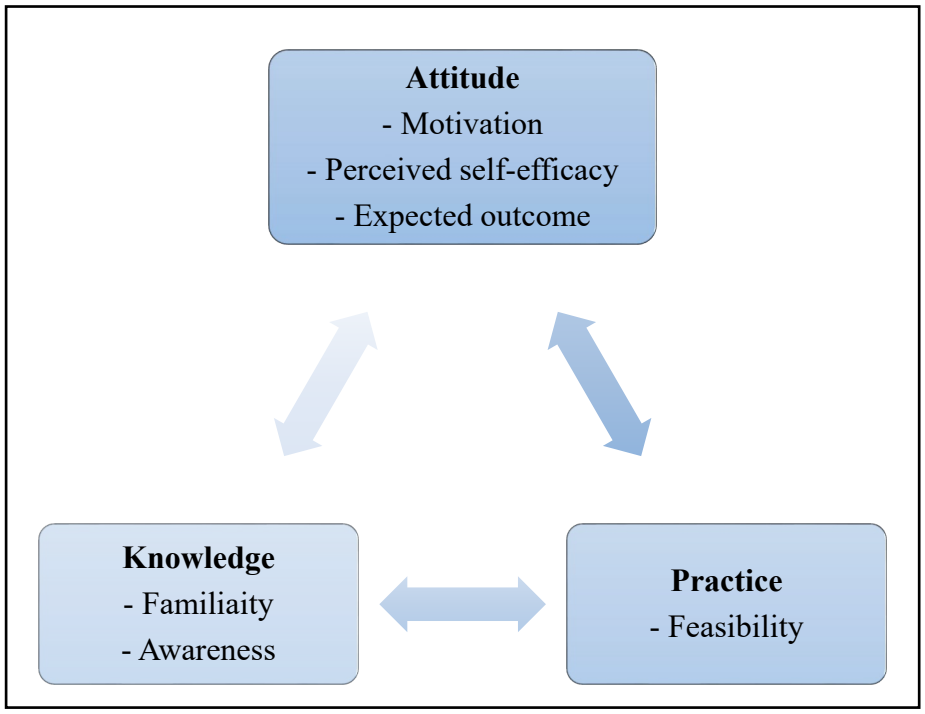

Figure 2.3 The Framework of the Knowledge, Attitude, and Practice (KAP) Model

Figure 2.3 displays the constructs of the KAP model originally introduced in Rogers's (2003) diffusion of innovation theory. Knowledge is a person's familiarity and understanding of a particular idea or piece of information (Rogers, 2003; Shulman, 1986). The individual either accepts or rejects the novel idea based on their attitude toward it, then determines the next course of action. In this connection, studies show that exposure to unique, functional, and surprising knowledge intensifies motivation (Ditta et al., 2020; Kwon, 2021). After that, depending on feasibility, the person either continues with the decisions made or repeats the cycle (Rogers, 2003). However, a person's knowledge and attitudes are strongly influenced by their social and immediate circumstances (Ahmed et al., 2023; Mtapuri et al., 2021).

Despite the growing application of the KAP model in science and medical teaching research, there remains a significant gap in tertiary EFL teaching in general, particularly in Bangladesh. Studies of teachers' knowledge, attitudes, and practices are commonly conducted in science subjects (Asempapa, 2022; Chen et al., 2021a; Ehizele et al., 2010; Habib et al., 2023; Melese, 2019). Particularly, Kap studies in Bangladesh are also conducted in the medical field (Habib et al., 2023; Islam et al., 2025; Khatun et al, 2025). However, evidence on KAP studies among Bangladeshi EFL educators is scarce.

The correlation among these variables has also been established through empirical studies in the EFL field. A positive correlation was found among EFL teachers' knowledge, beliefs, and practices of writing assessment in Chinese universities (Weng, 2023). However, empirical studies on the correlation among tertiary EFL teachers' critical thinking knowledge, motivation, and practices have yet to be conducted, and this gap inspired the pledge in the discussion. Moreover, this theory serves as the overarching theoretical model of this study as shown in Figure 2.5.

2.8 Information and Communication Technology (ICT) and Critical Thinking

The changing demands of the present world have heightened the importance of critical thinking as a key competency. The vast and ever-increasing online information (Halpern, 2014) during the 4th industrial revolution necessitates the promotion of critical thinking. Contemporary employers increasingly seek 'knowledge workers' who can efficiently receive new information and adapt to constant changes with flexibility and lifelong learning practices (Halpern, 2014; Holford, 2018; Pachayappan et al., 2022). Simultaneously, the newer challenges in the workplace cannot be solved with traditional approaches and require critical thinking, making it an essential qualification for prospective employees.

In this regard, the integration of ICT is widely viewed as a highly potential tool to promote learners' critical thinking. ICT-integrated classes help teach critical thinking as students learn through peer discussions and collaborations, reflective activities, peer reviews, discussion forums, and digital storytelling activities (Mansbach, 2015; Ng'ambi & Johnston, 2006; Rumpagaporn & Darmawan, 2007) using Wikis, websites and social media (Subran, 2013). Similarly, ICT facilitates the teaching of critical thinking by enabling interactive learning activities, presenting different models of a

concept, supporting self-regulated learning, scaffolding practice, and applying knowledge in the real world (Marczak, 2019). In addition, learners' ICT implementation and critical thinking skills are strongly correlated (Kimani, 2019; León-Pérez et al., 2020). In particular, scholars (Abdel-Hack et al., 2014; Azmi, 2017; Muthmainnah et al., 2022; Pang, 2022) advocate integrating ICT into EFL classes to foster learners' critical thinking. In this connection, Boumediene et al. (2018) submit that internet-based communication tools can enhance EFL learners' critical thinking, overcoming the limitations of traditional educational approaches. In sum, the literature reflects the importance of ICT-supported learning environments in fostering learners' critical thinking required for modern educational and professional developments. This also underscores the growing need for ICT integration into EFL classrooms to prepare the learners for the challenges of the present world.

2.8.1 Information and Communication Technology in Bangladesh

In line with the era's demand, the Bangladeshi government has taken various initiatives to promote digitalization in higher education. Bangladesh has been declared 'Digital Bangladesh by 2021' (Prime Minister's Office, 2009). Under the ICT Master Plan, the government introduced the Higher Education Quality Enhancement Project (HEQEP), which supports the establishment of ICT facilities across all public and private universities (University Grants Commission of Bangladesh, 2018). Accordingly, the University Grants Commission (UGC) supports the development of an ICT-skilled workforce while universities provide free internet connections for teachers and students (Prime Minister's Office, 2011).

The ongoing disparity between national ICT aspirations and classroom realities reflects deeper challenges in fostering technology-supported critical thinking in higher educational institutions. Currently, 188.64 million and 131.94 million Bangladeshi people use mobile phones and internet services, respectively (Bangladesh Telecommunication Regulatory Commission, 2023) which revolutionized the education system during COVID-19 as most public and private universities continued their educational activities online. Alarmingly, issues such as the high cost of gadgets and internet access, weak connectivity, rural-urban disparities, insufficient resources, and teachers' and learners' technological inexperience hindered the smooth continuation of online education (Khan et al., 2020). Similarly, these conditions can

hinder ICT integration in class to nurture critical thinking (Hogle, 2021). However, a survey conducted among stakeholders during the construction of the ICT Master Plan found that universities failed to integrate the latest technologies into their curricula (ICT Division) due to inadequate technological and infrastructural advancements and teachers' deficiencies in advanced technological knowledge (Chowdhury, 2019).

Consecutively, the government announced the 'Smart Bangladesh: ICT Master Plan 2041' (ICT Division) in 2022. The principal goals of the plan are to encourage research and innovation in higher education, in collaboration with international educational institutions, to propel an innovation-based economy that can cope with the rapid changes brought by the 4th industrial revolution. Nevertheless, initiatives remain at the basic level. Particularly, teachers' knowledge and skills for teaching critical thinking embedded with technological skill enrichment are obscured. Inevitably, the current project aims to explore Bangladeshi tertiary EFL teachers' critical thinking practices facilitated by ICT.

2.9 English as the Language of Employment

English proficiency is one of the most crucial employment skills in modern times, especially in multinational companies where English facilitates communication with foreign colleagues and clients. Likewise, migrant workers view English proficiency as a weapon for their financial and social welfare, as there is a high demand for English-proficient employees in the market (Erling, 2015; Doan & Hamid, 2019). Additionally, English-speaking countries benefit economically from investing in English-language development as an industry (Doan & Hamid, 2019). Thus, critical literacy, accompanied by language proficiency, enhances today's workers' communication effectiveness through cultural awareness, tolerance, and flexibility (Fitzpatrick & O'Dowd, 2012).

Therefore, science and business subjects are taught in English to expand the pool of skilled human resources to address job-market pressures. In the process, students learn the language, applied skills, and knowledge necessary for a particular field of work. Courses such as 'Business English' and 'English for Question functions' were introduced due to the increasing use of complex, specialized communication in workplaces (Fitzpatrick & O'Dowd, 2012). Consequently, Xamaní (2013) emphasizes integrating constructivist teaching and learning into English non-major undergraduate

programs (Tourism) to equip future employees with language and critical reflection skills to enhance job opportunities. Accordingly, Pakistani university students and teachers view English as a key employment skill in this globalized world (Abbas et al., 2021).

However, despite the wide recognition of English as an employability skill, there remains a substantial gap between the expected and actual language proficiency of Bangladeshi graduate job seekers. While English proficiency is acknowledged as a crucial skill for Bangladeshi employees (Hassan, 2021; Khan & Chaudhury, 2012; Khatun et al., 2022; Mumu et al., 2022; Rahman, 2022), contradictory reports are available regarding their English proficiency. Ahmed and Azim (2016) observe that Bangladeshi employers believe the employees' English skills are satisfactory. Conversely, most graduate job seekers' English language proficiency falls short of employers' expectations in Bangladesh (Ansarey, 2017; Hassan, 2021; Khan & Chaudhury, 2012; Khatun et al., 2022). Fundamentally, an inappropriate language policy is the root of employees' poor English skills (Rahman, 2022), which is currently the leading cause of unemployment among Bangladeshi youths (Khatun et al., 2022). Hence, Bangladeshi policymakers and educators must come forward to disperse English education to enhance learners' critical communication skills. Specifically, education should equip the learners to communicate in an increasingly multicultural context.

2.10 Learning and Teaching English in the 21st-Century

The changing global communication landscape necessitates a fundamental rethinking of English pedagogy toward fostering critical, functional and adaptive communicative competence. Thus, with the radical transformation of the global communication and economic systems, the concept of teaching is undergoing concurrent and remarkable changes (Warschauer, 2000). Since English is the language of the increasingly interconnected international society, the English communication pattern is getting more complex (Pardede, 2012). Hence, effective and meaningful English communication is necessary for both domestic employability and membership in the international society (Paschal & Gougou, 2022; Pardede, 2012). Respectively, teaching English must be aligned with these changes, aiming to enhance critical thinking, collaboration, communication, and employability rather than rote learning

(Halvorsen, 2018; Norris, 2019). In practice, a language classroom is ideal for nurturing critical thinking skills, as it aligns with the sophisticated communication patterns of the contemporary world (Harizaj & Hajrulla, 2017; Tsourapa, 2018; Halvorsen, 2018). As a result, teaching structures and functions alone is insufficient, as learners must be able to make critical interpretations, analyze information, engage in complex negotiations, and write convincingly (Warschauer, 2000).

Conspiciously, the current structure of the EFL education in Bangladeshi universities reflects a disparity between pedagogical practices and learners' communication needs. The EFL courses offered to Bangladeshi university learners mostly fail to meet learners' communication needs (Haque, 2022; Sudha, 2017). Lack of specific language courses, inadequate instructions on enhancing speaking and listening skills, lack of ICT integration in class (Haque, 2022), and lack of teacher training on choosing materials (Saleheen, 2014) hinder the improvement of language learners' proficiencies (Haque, 2022). Furthermore, the Grammar-Translation Method (GTM)-oriented teaching-learning content, teacher-centered classes where students feel too shy to communicate (Rubel, 2019), and teachers' criticism and rigid attitudes toward students (Saha, 2017) lead to insufficient improvement in learners' language proficiency and critical literacy. GTM is an approach to language learning that first attempts to teach and learn the language by thoroughly reviewing grammar rules. After that, the understanding of the rules is applied to translate sentences to and from the selected language (Richards & Rodgers, 2014).

Contrarily, Bangladeshi EFL teachers are aware of incorporating multicultural contents in EFL classes in the globalization context (Shahed, 2013), which, along with technological awareness, helps to foster the necessary skills (Norris, 2019; Pardede, 2012; Paschal & Gougou, 2022; Tsourapa, 2018) as the technological revolution is regarded as the impetus to the educational changes. In this respect, Bangladeshi tertiary EFL teachers must select materials and use technologies to enhance learners' critical thinking.

2.11 Communicative Language Teaching and English Education Policy in Bangladesh

Communicative Language Teaching (CLT) in Bangladesh demonstrates that achieving meaningful pedagogical reforms is challenged by persistent contextual and

systemic constraints. CLT was integrated into the Bangladeshi primary to tertiary EFL curriculum to improve the quality of education through nurturing innovation, critical thinking, and endless learning (National Curriculum, 2012, cited in Arafat & Mehnaaz, 2020). Crucially, since the introduction of CLT, it has failed to achieve its ultimate purpose – communicative competence (Ansarey, 2012; Farhad, 2013; Sima & Hoque, 2019)- due to the absence of coordination among policy, planning, and execution (Chowdhury & Kabir, 2014; Saha, 2020). Being dominantly impeded by large class sizes, dearth of teachers' professional training, inadequacy of proper materials, inefficiency of the learners, and limitation of time (Islam, 2021; Rahmantuzzaman, 2018), CLT in secondary education in Bangladesh is struggling (Islam, 2021; Rahman, 2015; Rahmantuzzaman, 2018). Eventually, students enter universities with limited language experience and poor English skills, rendering the shift from GTM to CLT ineffective (Rana & Chowdhury, 2020). Paradoxically, many researchers are doubting whether CLT is a suitable English Language Teaching (ELT) method for Bangladesh (Amin, 2016; Arafat & Mehnaaz, 2020) and considering whether GTM is more effective (Rahman, 2012; Alam, 2015; Arafat & Mehnaaz, 2020).

2.11.1 ELT in Higher Education of Bangladesh

English medium education in Bangladeshi universities reveals a wide gap between institutional linguistic demands and students' preparedness. English is the medium of instruction in Bangladeshi universities (Akter & Mitul, 2020; Alam, 2022; Islam, 2013; Sultana, 2014), necessitating English proficiency to sustain academic and job competition (Shaila & Trudell, 2010). Prospective undergraduate students enter universities with inadequate English communication skills; especially, they completely lack speaking and listening skills (Aktar, 2020; Islam et al., 2022; Islam & Stapa, 2021; Mridha & Moniruzzaman, 2020) because these skills are not taught at all in the secondary and higher secondary levels (Aktar, 2020; Akter & Mitul, 2020; Bhuiyan & Huda, 2020; Patwary & Rumman, 2019). To support them in coping with the English medium instructions, Bangladeshi public and private universities offer mandatory EFL courses, such as 'Academic English I' and'English II' (University of Liberal Arts Bangladesh, 2023a), 'English Reading Skills and Public Speaking', and 'Business Communication'(American International University-Bangladesh, 2019), 'Basic Functional English and English Spoken', and 'Writing and Comprehension' (Daffodil

International University, 2023), ‘Introduction to Composition’, ‘Intermediate Composition’, and ‘Public Speaking’(North South University, 2023a), ‘English Fundamentals’, and ‘Composition’ (Stamford University Bangladesh, 2023). The 9th and 11th policies of the NEP 2010 clearly outline English-language teaching policies in universities.

> Policy-9: English will be taught as a compulsory subject at the degree level of all colleges and universities. It will carry 100 marks/3 credits.
>
> Policy-11: Curricula and syllabi of higher education will be updated to meet international standards. To expand tertiary-level education, it is essential to translate standard books of modern knowledge and science into Bangla. Recognizing the national importance of such a program, urgent steps will be taken. English will remain as a medium of instruction in higher education along with Bangla. (Ministry of Education, 2010, p. 32).

These EFL courses are usually offered in several trimesters. The initial courses stress strengthening basic speaking, listening, reading, writing, and grammar skills. In the advanced courses, students are taught to write CVs, essays, reports, emails, selected vocabulary, academic readings and advanced speaking and listening skills. Usually, the textbooks for these courses are designed and produced by the faculty members who are supposed to teach these courses.

Unfortunately, ineffective instructional practices and policy inconsistencies together restrict the development of critical thinking and language competencies among Bangladeshi undergraduate EFL learners. EFL students do not benefit sufficiently from these courses, both in public (Sudha, 2017) and private (Basak, 2014; Riya & Kabir, 2019) universities. In practice, teacher-centered classes are inappropriate for reinforcing learners' critical thinking and citizenship skills, such as democratic values, as learners remain passive in such classes (Cristillo, 2010; Serin, 2018). Contrastingly, learner-centered classes significantly improve learners' critical thinking and collaborative learning (Leonard, 2018). In this connection, teachers' lack of motivation and inability to contextualize course content (Basak, 2014) and the contradictory language policy (Chowdhury & Kabir, 2014; Rahman et al., 2019) are the main impediments to realizing the goals of CLT in the Bangladeshi tertiary education.

Briefly, integrating critical thinking in EFL classrooms is a pressing issue in present-day Bangladesh. The successful integration of critical thinking into EFL curricula will help overcome the shortcomings of the CLT approach. This will enable Bangladeshi EFL learners to better grasp English, promoting their national and international growth.

2.12 Teachers' Professional Development

Teacher Professional Development (PD) is an ongoing aspect of professional practice in education. It includes updating the subject knowledge (Cirocki & Farrel, 2019; Driel & Berry, 2012; Hashweh, 2013) and adjusting teaching practices. Teachers' Continuous Professional Development (CPD) involves continuously updating knowledge and skills as they keep teaching (Cirocki & Farrel, 2019; Mwila et al., 2022). Shulman (1987) strongly argues that an educator must continually deepen their knowledge of the topic to implement an inquiry-based classroom.

Typically, there are many approaches to teacher knowledge development. Primarily, institutionally organized training programs significantly enhance teaching practices (Dilshad et al., 2019). Hence, training must be organized to facilitate teachers' PD regarding digital literacy, classroom management, and learner autonomy (Alzahrani et al., 2022). However, a holistic approach to the PD of critical thinking requires the observations of administrative support for critical thinking, revising institutional goals, arranging regular training programs on teaching critical thinking, and revisiting the faculty's role not only as a learner but also as a teacher who will evaluate students, colleagues and the institute's critical thinking abilities and trends as a whole (Elder, 2019). Contrarily, participating in PD activities like attending seminars, conferences, and workshops (Maciejowska et al., 2015) is often thwarted by many external issues like managing time outside institutional responsibilities, limited budget, family responsibilities (Artman et al., 2020; Hoang, 2020), inappropriate contents, inefficient teacher trainers (Eroğlu & Kaya, 2021; Yüner, 2022), and absence of positive attitudes to in-service PD activities (Eroğlu & Kaya, 2021; Hoang, 2020).

The evolving characteristic of teacher PD indicates that teacher learing is a complex and ongoing process shaped by multiple formal and informal learning experiences. Due to the limitations of PD and the spread of globalization (Hayes, 2019; Kirkwood & Christie, 2006), teachers are inclined to Self-Directed Professional

Development (SDL) activities (Artman et al., 2020; Kirkwood & Christie, 2006; Maciejowska et al., 2015). Particularly, language teachers' PD is a lifelong process beyond formal training and involves teachers' perceptions, self-awareness, and reflectivity (Vadivel et al., 2021). Therefore, teachers' CPD encompasses informal activities such as discussions with colleagues, student feedback, and formal activities such as taking courses, attending conferences, conducting personal research, networking, and consulting experts (Dilshad et al., 2019; Holmes, 2013; Lyle, 2003) which significantly influence learning outcomes.

The effectiveness of teacher PD depends on a balance between their autonomous learning practices and the structural support provided by the universities. Despite the stance of self-learning or SDL in recent years, problems like teachers' lack of organization and inability to grasp a topic completely from CPD activities (Artman et al., 2020) and deficiency in institutional support and technological smoothness and skills often diminish teachers' autonomous desire to grow professionally (Bristi, 2014; Khan et al., 2021; Shohel et al., 2022; Shrestha et al., 2021). Therefore, a combination of formal PD and SDL should be established (Makhmetova et al., 2025) to prepare teachers for 21st-century education.

2.12.1 Tertiary EFL Teachers' Professional Development to Teach Critical Thinking

The changing knowledge society is redefining teaching as a broader and continuously evolving professional role. With the advent of the knowledge society and the transformation of learning into meaning-making, teachers' responsibilities are changing (Collinson et al., 2009), obliging them to continually learn to support adult learners in developing 21st-century skills (Longworth, 2005). In this context, "learning and innovation skills, digital literacy skills, and life skills" (p. 564) are incumbent competencies that teachers must successfully exercise in 21st-century EFL classes. Learning and innovation skills encompass critical thinking, communication, creativity, and innovation. Moreover, career and life skills entail self-direction, collaboration, and global networking. Similarly, the ability to utilize technology for learning and media literacy is a constituent of digital literacy (Alzahrani et al., 2022).

However, institutional and contextual barriers continue to hinder the development of critical thinking in Bangladeshi tertiary EFL classrooms. Tertiary EFL

teachers face various challenges, including exam-centered teaching, students' unwillingness, and a lack of professional development opportunities that thwart their efforts to teach critical thinking effectively (Essia & Khallaf, 2024). Moreover, in an online teaching and learning context, lack of instant feedback, social interactions and cognitive overload may reduce the impact of instructional practices on learners' critical thinking development (Bachtiar, 2024).

Therefore, the effective integration of critical thinking into tertiary EFL classrooms depends on the comprehensive and ongoing PD that supports teachers' evolving pedagogical competencies and practices. Teachers must continually update their knowledge, skills, and practices to better teach the subject's evolving features (Heredia-Arboleda et al., 2021; Karakaş & Yücedağ, 2020). Specifically, the 21st-century tertiary EFL teachers need PD support to effectively integrate critical thinking pedagogy in their classes (Hassoun, 2019). Specifically, PD is required to transform their dysfunctional practices through resolving their conflicts with the curriculum and assessment requirements (Leibovitch et al., 2024). Likewise, tertiary EFL teachers need PD regarding their instructional methodologies, strategies and materials to promote critical thinking (Liu & Puteh, 2025; Marin & Pava, 2017). Particularly, in countries like Indonesia, where the tertiary EFL testing system expects either a correct or incorrect answer, teachers need to develop a clear and strong understanding of the conceptions of critical thinking (Defianty & Wilson, 2024). Furthermore, they need to develop technological knowledge and skills to leverage in teaching critical thinking (Bachtiar, 2024). Furthermore, they need professional assistance to develop their flexible attitudes and self-efficacy required to promote learners' critical thinking (Orakcı & Khalili, 2024).

2.13 Critical Thinking in the Bangladeshi EFL Context

Critical thinking in the Bangladeshi EFL context is a nascent concept, with a limited body of studies. The lack of critical thinking at the secondary and higher secondary levels makes it difficult for students to adjust to critical thinking practices in universities (Rupa, 2013). Tertiary EFL classes do not foster critical thinking (Zahra, 2012). Moreover, cultural barriers hinder undergraduate students' critical thinking practices inside the classroom (Akhter, 2019). Despite deliberately designed EFL courses and activities that focus on critical thinking, the reality is that students still find

these activities difficult (Sultana, 2018; Tasnim, 2020).

In this connection, Bangladeshi undergraduate EFL learners' previous experiences of critical thinking determine their critical thinking performances at the university level. Evidence reveals that despite the introduction of the innovative curriculum in secondary school-level education (Roshid & Haider, 2024), several challenges undermine the development of critical thinking in secondary school students. Through group work, like Inquiry-Based Learning, has proved to enhance 21st-century skills among Bangladeshi secondary school students (Nahar & Machado, 2025). However, though collaborative assignments are an effective way of developing critical thinking, the unequal contributions of the students often limit the opportunities to enhance their critical thinking (Arpa & Alam, 2025). Moreover, secondary school EFL teachers' inclination to teacher-centered and traditional instructional approaches, time constraints, large class and lack of coordination between instructional practices and learners' limited participation often restrict the development of critical thinking among the learners (Ahmed et al., 2023; Hasan et al., 2022). Particularly, teachers' ignorance about critical thinking skills limits the development of Bangladeshi rural school students' critical thinking (Roshid & Haider, 2024). Consequently, Bangladeshi secondary school students' critical thinking is either poor or very poor (Uddin et al., 2020).

Likewise, in the higher secondary college level education in Bangladesh, the teaching of critical thinking is thwarted by a range of instructional and systematic barriers. The dominance of exam-centered education, teacher supremacy in classroom dynamics, students' passiveness in the classroom, teachers' limited training on developing critical thinking and their specific disciplines, and rigid language of textbooks restrict the development of critical thinking in Higher Secondary College (HSC) level EFL learners (Ferdoush & Jahan, 2024b). Particularly, HSC-level EFL teachers' limited and fragmented understanding of the concept of critical thinking often hinders the integration of critical thinking into their instructional practices (Ferdoush & Jahan, 2024a). Thus, the limited exposure and experiences of critical thinking in the pre-university levels leave Bangladeshi undergraduate EFL learners unprepared to engage in critical thinking in university EFL classes.

In addition, Bangladeshi undergraduate EFL learners' poor language proficiency further intensifies the difficulties of teaching critical thinking in tertiary EFL classes. Bangladeshi secondary school EFL learners often perform poorly in

English (Anwar, 2017). Due to strong Bangla medium instruction, low language exposure and socioeconomic disparities, Bangladeshi secondary school students fail to perform well in English (Islam & Jannat, 2025). Moreover, secondary EFL teachers find it difficult to promote learners' language proficiency due to mixed-ability classes and their lack of knowledge and skills resulting from limited teacher training opportunities (Islam, 2023). Similarly, EFL learners at the HSC level have limited language proficiency due to multifactorial teacher and student-related and systemic issues (Rahman et al., 2023; Rahman et al., 2025). As a result of the persistent weaknesses in English, Bangladeshi university first-year students struggle to cope with the English medium of education in the universities. Furthermore, pre-existing social, institutional and instructional issues make language teaching even more difficult (Hassan & Haque, 2023; Islam et al., 2022; Jamil, 2026; Rani, 2020). Thus, the deep-rooted and ongoing language difficulties of Bangladeshi tertiary EFL learners make the context far more complex for the EFL teachers to highlight critical thinking in their instructions. Teaching critical thinking, therefore, poses a dilemma, while tertiary EFL teachers strive to equip the low proficiency learners with linguistic support. Since the learners need stronger attention to language proficiency to cope with the English medium instructions and exam-centered education system, critical thinking development in the EFL context becomes a less focused goal of teaching and learning. Collectively, the inadequate cultivation of critical thinking and English proficiency in the secondary and higher secondary levels affects the instructional practices of tertiary EFL teachers.

Apart from this, critical thinking has remained a less emphasized educational goal in various higher educational disciplines. Although critical pedagogy is implemented in business discipline instructions (Kabir & Islam, 2023), a content analysis of 308 business discipline test papers from different Bangladeshi public and private universities revealed that only 12% included HOT-related questions, whereas 88% of the questions were related to LOTs (Hossain, 2026). In a like manner, Bangladeshi undergraduate engineering learners possess a fragmented understanding of Problem-Based Learning that limits the development of their critical thinking, requiring the teachers to communicate a clearer concept of the term (Hasan et al., 2024). These disciplinary patterns reflect a broader institutional inclination that strongly influences the critical thinking experiences of tertiary EFL learners. Thus, critical thinking in the tertiary EFL context does not operate in isolation but rather is shaped by

the overall educational culture, constraining EFL teachers' motivation and practices of it.

Apparently, critical thinking is associated with improved EFL proficiency as it enhances learners' depth of understanding and communicative competence. Incorporating critical thinking activities substantially improves learners' foreign language skills. Learning a language involves understanding linguistic components and content cognition (Zhang et al., 2020). Foreign language users fathom deeper meanings in communication, increasing its effectiveness. Therefore, critical thinking skills enable EFL learners to communicate more effectively by observing things from various dimensions (Zhang et al., 2020; Tatsumi, 2018). In fact, EFL learners with critical thinking abilities are better language performers (Elyas & Zahrani, 2019; Gandimathi & Zarei, 2018; Irawati, 2014; Malmir & Shoorcheh, 2012). Moreover, a positive correlation exists between learners' critical thinking and language skills (Golpour, 2014; Grosser & Nel, 2013; Marzban & Barati, 2016).

Hence, there is a compelling need for educational policymakers to systematically incorporate critical thinking frameworks into the Bangladeshi EFL curriculum. Although the CLT approach inspires creativity, 'creativity in itself is not enough to equip students to deal with issues of distinctiveness and to look at their world 'differently' (Amin, 2016, p. 147). Therefore, teachers and learners should value both native and foreign cultures through critical literacy, making CLT a means for Bangladeshi citizens to become globally more acceptable (Amin, 2016).

Thus, there is a need to mass-groom Bangladeshi tertiary EFL teachers to develop creative solutions to the challenges of teaching critical thinking. Along with teacher enrichment, curriculum developers are required to value critical thinking as a principal goal of the EFL courses. Otherwise, this negligence to critical thinking in the EFL curriculum will adversely affect the country's educational and socio-economic improvements.

2.14 Teaching Critical Thinking

The teaching of critical thinking is a contested issue due to its ongoing conceptual and practical evolutions. Scholars have long debated the teachability of critical thinking due to concerns over the lack of measurable standards, inadequate teacher expertise, students' weak aptitude, limited investment in developing countries,

disciplinary disparities in conceptualization and the risk of losing educational focus through critical thinking-integrated curriculum integration (Black, 2006; Erikson & Erikson, 2019; Liyanage et al., 2021; Li, 2019; Malik, 2018; Middendorf et al., 2018; Pasquinelli et al., 2020; Shaw et al., 2019; Wang & Zheng, 2016). Nevertheless, research increasingly acknowledges the teachability of critical thinking in education (Alsaleh, 2020; Bean & Melzer, 2021; Bezanilla et al., 2019; Ennis, 2016; Paul & Elder, 2019; Cargas et al., 2017; Thonney & Montgomery, 2019; Zandvakili et al., 2019) and suggests that, despite the challenges in teaching critical thinking, it can be developed through progressively structured activities (Pasquinelli et al., 2020). Likewise, Schafersmen (1991) argues that critical thinking is neither innate nor naturally developed and cannot be fostered by parents or fellow learners, but only through skilled educators delivering integrated instructions.

Consequently, critical thinking is increasingly established as a valid and attainable educational goal. This is reflected in teaching strategies, tools and critical thinking integrated curricula across diverse educational contexts, including EFL teaching in Singapore, Japan, Indonesia, Finland, Saudi Arabia and Vietnam (Akib & Muhsin, 2020; Alghamdi, 2017; Ansari et al., 2021; Arifin, 2020; Elfatihi, 2017; Haga, 2018; Husna, 2019; Kieu & Vo, 2017; Kumar et al., 2023; Mielikäinen et al., 2023; Ouhiba, 2022; Lam et al., 2013; Li, 2019; Tosuncuoglu, 2018; Wale & Bishaw, 2020;; Wilson, 2019; Wahyuni et al., 2020; Yaiche, 2021). Therefore, the instruction to foster critical thinking in EFL classes relies on an integrated approach that combines learner-centered pedagogy, purposeful instructional design, varied learning activities, and sustained teacher PD. Collectively, these interconnected entities create a learning environment that systematically supports the development of learners' critical thinking.

2.14.1 Critical Thinking Teaching Instructions

The development of critical thinking can be ensured through the teacher's facilitative role in a learner-centered classroom. Teachers enhance critical thinking by establishing a learner-centered classroom environment that encourages learners' responsibility, interaction and critical thinking engagement, while teachers maintain openness to diversity and questions and confidence in learners' thinking abilities (Masduqi, 2011; Portelli, 1994; Snyder & Snyder, 2008). In this context, teachers facilitate critical thinking through intentional instructional designs and diverse

classroom practices. Along with instructional behaviors, carefully selected learning materials, such as problem-based activities, increase active learning through self-control, learning needs, group work, insightful inquiry, peer-influenced learning, assimilation, and accommodation of diverse information (Gürses et al., 2007; Portelli, 1994). Accordingly, researchers have explored various instructional activities to promote EFL learners' critical thinking, including literature, online writing, role-playing, debate, talking aloud, questioning, and blogging (Facione & Facione, 2013; Foo & Quek, 2019; Mutmainna, 2016; Pardede, 2019; Snyder & Snyder, 2008). Thus, learners' critical thinking in EFL classes can be developed through the interconnected combination of teacher practices, purposeful instructions and classroom activities that consistently engage learners in independent and meaningful thinking. This highlights the importance of creating supportive and interactive learning environments that encourage learners to question, analyze, evaluate and create ideas actively.

2.14.1.1 Teaching Critical Thinking in EFL Classrooms

Research on Bangladeshi tertiary EFL education shows gradual development in critical thinking practices while curricular and pedagogical limitations continue to persist. Although attention to teaching critical thinking in the Bangladeshi EFL context remains limited, studies show that digital technologies, cultural and controversial topics, opinion sharing, and critical thinking-integrated language programs can effectively promote EFL learners' critical thinking (Arju, 2010; Islam, 2020; Mehrin, 2020; Shaila & Trudell, 2010; Sudha, 2018), yet its development remains constrained due to students' reliance on memorization and the absence of critical thinking-integrated EFL curricula (Ullah et al., 2022; Zahra, 2012)

In addition, critical thinking in tertiary EFL classes can be developed through a variety of instructional approaches and learning materials developed to engage learners in increasingly complex thinking. The approaches to teaching critical thinking in EFL classes include the general, infusion, and mixed approaches, with the general approach considered the most effective due to its flexibility in employing diverse activities, while the infusion integrates critical thinking implicitly and the mixed-method approach does so explicitly (Nainggolan & Wirza, 2020). Additionally, critical thinking can be integrated into class through graded activities in EFL textbooks, arranged according to Bloom's hierarchical levels of thinking, from simpler to more complex (Nainggolan &

Wirza, 2020), an approach widely acknowledged by researchers (Talebinezhad & Matou, 2012; Sobkowiak, 2016; Gandimathi & Zarei, 2018; Yuliana & Tungka, 2018; Elfatihi, 2019). Therefore, most EFL researchers prefer developing critical-thinking-integrated EFL textbooks rather than developing teaching qualities. Though this may provide immediate support for the recent inevitability, in the long run, training teachers for a social learning environment in a post-globalized, neoliberal world is essential for sustainable socio-economic advancement.

2.14.1.2 Challenges of Integrating Critical Thinking in EFL Class

Several teaching, curriculum and classroom issues often hinder the opportunities to incorporate critical thinking into EFL instructions, making it difficult for the teachers to foster the learners' critical thinking. Despite the growing emphasis on developing 21st-century skills, including critical thinking, problem-solving, creativity, and metacognition, EFL and English as a Second Language (ESL) classes remain highly traditional and teachers often lack the professional expertise needed to adapt content, methods and approaches to learners' various needs, leading to learners' poor expectations from the courses (Albahlal, 2019; Alzahrani et al., 2022; Kim et al., 2019; Norris, 2019; Septiyanti & Fajriah, 2021). Likewise, Bangladeshi tertiary EFL teachers face hindrances, including limited knowledge and skills, insufficient focus on critical thinking in the curriculum, and tenuous motivation in teachers and students (Adhikari & Ali, 2020; Ullah et al., 2022) and the absence of the culture of critical questioning in classrooms despite its intended presence in the pedagogy (Adhikari & Ali, 2020; Akhter, 2019; Laskar, 2021). Thus, these challenges indicate that integrating critical thinking into Bangladeshi tertiary EFL instructions requires coordinated improvements in teaching quality, curriculum support and classroom practices. Addressing these areas is crucial to bridge the gap between the expected learning goals and actual learning outcomes.

2.15 Teacher Motivation

Teacher motivation refers to their internal and external drives to pursue teaching, shaped by personal inclinations, values, contextual factors, interest in teaching and interpersonal engagement with the learners (Han & Yin, 2016; Hiver et

al., 2018; IGI Global, 2023; Machumu, 2021; Reeve & Su, 2014). It is crucial to quality teaching (Alhassan, 2020; Christopher, 2012; Ofoegbu, 2004), as a motivated teacher behaves in ways that ensure learning outcomes (Ofoegbu, 2004) and the overall success of an institution (Kotherja & Kotherja, 2012; Schellenbach-Zell & Gräsel, 2010). Since teaching is a knowledge profession, teachers' CK and PCK do not directly warrant learning outcomes unless they are self-motivated to take the necessary actions to collaborate effectively with learners (Lauermann, 2017).

However, Bangladeshi university teachers' motivation is studied under the term 'job satisfaction,' which refers to the accumulation of feelings and attitudes toward colleagues, boss, subordinates, and working conditions (George et al., 2008). Job satisfaction is influenced by rewards, including salary, promotion, recognition, opportunities, self-efficacy and autonomy which significantly contribute to their professional engagement and well-being (Jerrim et al., 2023; Johari et al., 2018; Kalkan, 2020; Kasalak & Dağyar, 2020; Mokhtar et al., 2021; Peng et al., 2022; Sahito & Vaisanen, 2019, Worth & Brande, 2020). Imperatively, teachers' job satisfaction and motivation are interdependent variables (Baroudi et al., 2020; Parveen & Bano, 2019; Sahito & Vaisanen, 2019; Shah et al., 2012; Skaalvik & Skaalvik, 2021; Slemp et al., 2020; Worth & Brande, 2020).

Generally, Bangladeshi university teachers' job satisfaction is shaped by several professional, institutional and interpersonal factors that both support and hinder their work experience and enjoyment. Bangladeshi private and public university teachers' job satisfaction are influenced by factors, including internal and external interest in the teaching profession, research and higher education opportunities and interpersonal relationships (Ali & Akhter, 2009; Hossen, 2018; Rahman & Parveen, 2008; Saha & Awal, 2021; Zaman et al., 2014) while dissatisfaction arises from limited recognition of performance and lack of promotions (Ali & Akhter, 2009; Rahman & Parveen, 2008; Hossen, 2018; Saha & Awal, 2021; Zaman et al., 2014). Moreover, while private university teachers are happy with the freedom of work, self-efficacy, and job enjoyment (Ali & Akhter, 2009; Rahman & Parveen, 2008; Zaman et al., 2014), these qualities are absent in public universities. Nevertheless, findings remain mixed, with contradictory evidence on autonomy, salary and promotion experiences in both public and private universities (Hossen, 2018; Rahman & Parveen, 2008; Saha & Awal, 2021), highlighting varying patterns of job satisfaction in Bangladeshi universities. Accordingly, the level of motivation among Bangladeshi university teachers remains

undetermined. Furthermore, limited evidence is available on Bangladeshi tertiary EFL teachers' motivation to integrate critical thinking, as only Ullah et al. (2022) found that EFL teachers in both public and private universities lack this motivation, which limits the development of critical thinking in the Bangladeshi tertiary EFL context. In essence, Bangladeshi public and private university educators' overall limited job satisfaction, and the scanty evidence on Bangladeshi tertiary EFL teachers' motivation to teach critical thinking prompted the researcher to undertake the present project.

2.16 Theoretical Framework

A theoretical framework is essential to ensure coherence between a study's variables, methods and interpretation. It is an integral part of the conceptual framework (Kivunja, 2018; Crawford, 2020). It works as a checklist for the collected data type, the relationships among the findings, and the interpretation of data (Grant & Oslanoo, 2014; Kivunja, 2018). Moreover, "the theoretical framework provides a grounding base, or an anchor, for the literature review, and most importantly, the methods and analyses" (Grant & Osanloo, 2014, p. 12). Relevantly, developing a theoretical framework is one of the most elemental tasks in any doctoral thesis (Grant & Osanloo, 2014; Kivunja, 2018). Specifically, if a conceptual framework represents the house, a theoretical framework represents the individual rooms (Kivunja, 2018). A researcher needs to choose theories for both the overall research concept and individual variables of the study (Grant & Osanloo, 2014). Consequently, the study selected four theories to support its variables. The study's theoretical framework is depicted in Figure 2.4.

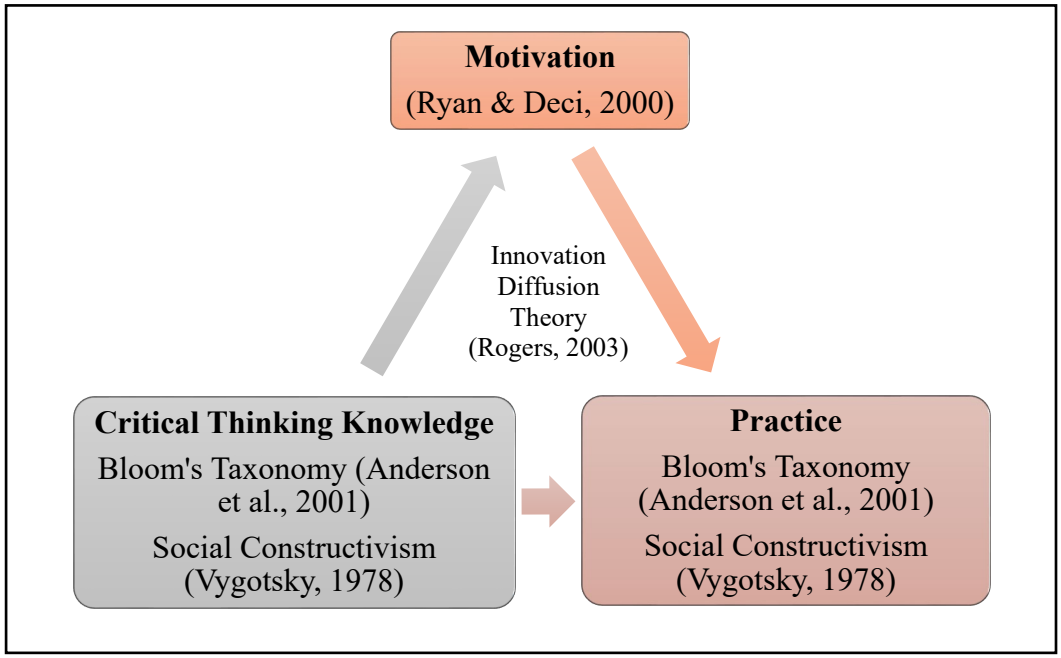

Figure 2.4 Theoretical Framework of the Study

Figure 2.4 illustrates the study's overarching theoretical framework, comprising variables, e.g., knowledge, motivation, and practices of critical thinking, were derived from the innovation-diffusion theory (Rogers, 2003). Then, Bloom's taxonomy (Anderson et al., 2001) and social constructivism (Vygotsky, 1978) were selected to define the study's knowledge and practice variables. Finally, the self-determination theory (Ryan & Deci, 2000) explained the nature of teacher motivation that the study intends to investigate.

This framework also helps explain the relationships among the study's independent variables, knowledge, motivation and the dependent variable, practices of critical thinking based on the KAP model in the innovation-diffusion theory (Rogers, 2003). Figure 2.4 shows that EFL teachers' knowledge of critical thinking influences both their motivation to teach critical thinking and their instructional practices. Additionally, their motivation to teach critical thinking influences their instructional practices.

2.16.1 Rationale for Choosing Theories

Firstly, the Knowledge, Attitude and Practice (KAP) model in the innovation diffusion theory (Rogers, 2003) is used in this study to explain the relationship among

the study's independent variables, knowledge and motivation and the dependent variable, practices of critical thinking. This theory views teaching as a knowledge profession where the teacher's knowledge is transmitted to the learners, being influenced by their affective factors (Guerriero, 2017; OECD iLibrary, 2023). This concept is reinforced by the innovation-diffusion theory, which holds that educators' familiarity with new concepts/practices leads to effective practices when they develop a certain attitude toward that knowledge (Rogers, 2003). In fact, Rogers (2003) indicates that teachers encounter novel ideas constantly that they must adopt or adapt in their classes.

Since the teaching of critical thinking is a concern in 21st-century education, educators' affective factors will determine how much they incorporate it into their teaching. Teachers' higher motivation enhances learners' critical thinking performance (Arce-Saavedra & Blumen, 2022; Kanwal et al., 2023). Therefore, the KAP model allows viewing critical thinking practices as the outcome of the interconnection between teachers' critical thinking knowledge and their motivation. Moreover, it enables a comprehensive analysis of the gaps that influence critical thinking teaching practices. Besides, this theoretical lens provides a nuanced understanding of how knowledge is transformed into practice, enabling an evidence-based, targeted intervention to support tertiary EFL teachers' professional development in critical thinking.

Secondly, the study chose Bloom's taxonomy of educational objectives to examine its independent variable, knowledge and dependent variable, practices of critical thinking. This theory addresses the types of activities and materials that should be used to teach critical thinking (Krathwohl, 2002). The theory helps explain tertiary EFL teachers' conceptual and procedural knowledge of critical thinking (Anderson et al., 2001). Particularly, it works as a checklist to identify tertiary EFL teachers' understanding of HOT questioning for promoting critical thinking. Moreover, the hierarchical thinking levels allow determining the levels of tertiary EFL teachers' questions in the classes.

Thirdly, Vygotsky's (1978) social constructivist theory was used to examine the study's independent variable, knowledge and dependent variable, practices of critical thinking. This theory promotes the principles of critical thinking and active learning (Almulla, 2023; Ranjana, 2022; Topolovčan & Matijević, 2017). The theory provides a guideline to observe tertiary EFL teachers' behaviors that promote critical thinking.

Moreover, tertiary EFL teachers' critical thinking PCK and classroom strategies, including questioning, collaborative activities, feedback styles, and student-centered approaches, were explored against the backdrop of this theory.

Finally, to examine the motivational factors underlying tertiary EFL teachers' practices of critical thinking, the study utilized the Self-Determination Theory (SDT) (Ryan & Deci, 2000). This is the most acceptable and widely investigated (Ahmad et al., 2023; Banerjee & Halder, 2021; Basikin, 2020; Brenner, 2022; Chiu et al., 2021; Figueiredo et al., 2023; Maryam et al., 2021; Power & Goodnough, 2019; Teixeira et al., 2020; Vermote et al., 2020; White et al., 2021) theory of teacher motivation. This theory provides the ground to investigate tertiary EFL teachers' extrinsic motivation that emerges from various institutional conditions, like institutional expectations and monitoring for teaching critical thinking and intrinsic motivational factors, like their interest in teaching critical thinking. Specifically, based on SDT, the study explores Bangladeshi tertiary teachers' feelings of relatedness, autonomy, and competence that connect their external and internal motivation. Accordingly, the theory comprehensively captures the motivational factors that influence the implementation of their critical thinking CK and PCK in classrooms.

2.17 Conceptual Framework

The study develops a conceptual framework that connects its independent and dependent variables, knowledge, motivation and practices of critical thinking. A conceptual framework is the complete and logical connections among every idea, plan, and practice, and performance that are the parts of the research design (Grant & Oslando, 2014; Kivunja, 2018; Crawford, 2019). The study's conceptual framework involves three variables: knowledge, motivation, and practice. Knowledge refers to tertiary EFL teachers' understanding of the concept of critical thinking and of the styles and strategies for teaching it. Motivation indicates their interest in teaching critical thinking, which emerges from external conditions and the internal acknowledgement of its value. Practice refers to whether tertiary EFL teachers behave in ways that create a safe classroom environment conducive to critical thinking. In addition, practice includes the teaching materials, styles, and strategies used by tertiary EFL teachers. The study's conceptual framework is shown in Figure 2.5.

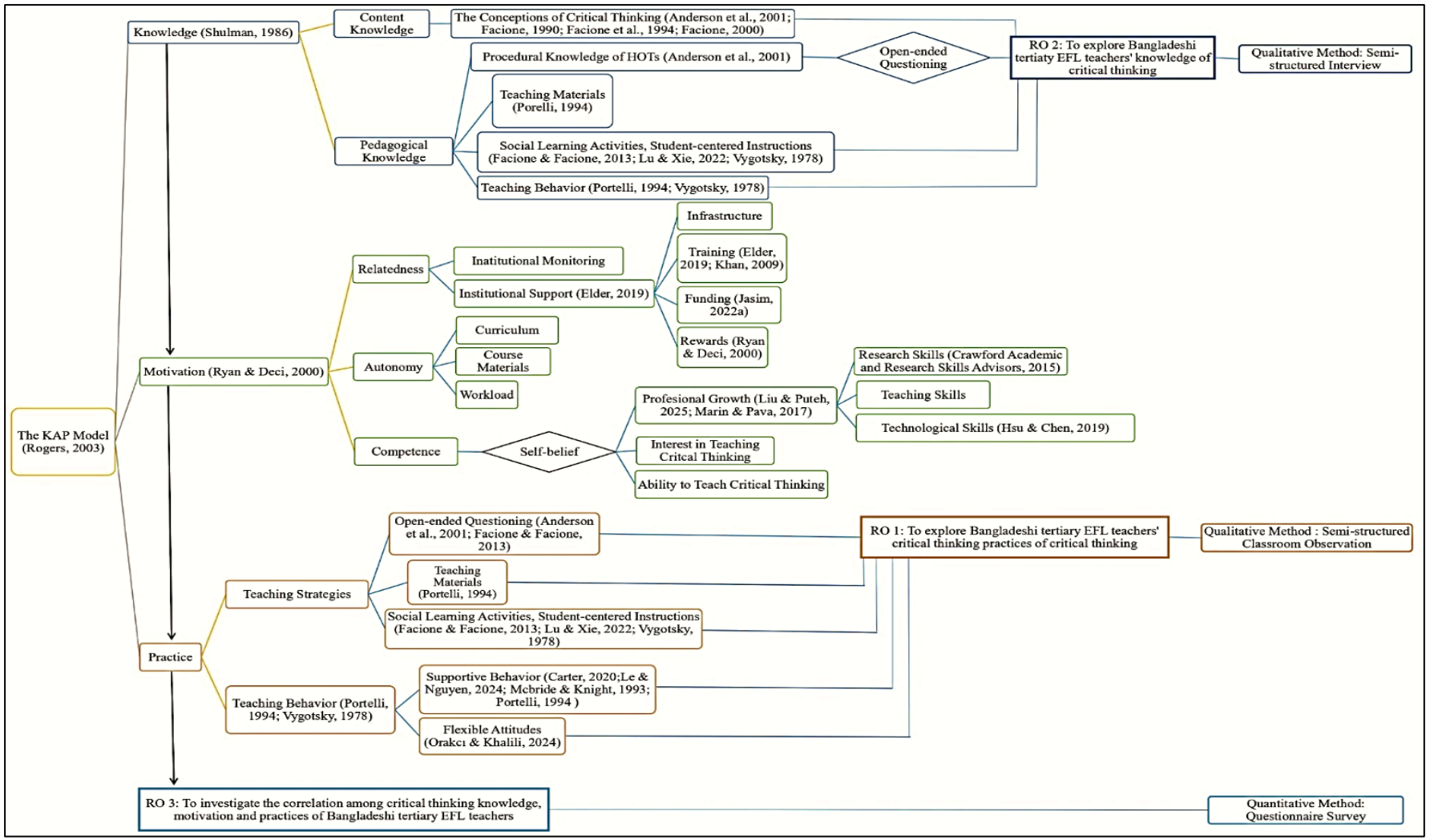

Figure 2.5 Conceptual Framework of the Study

Figure 2.5 encapsulates the connections among the study's central concept, the three variables (knowledge, motivation, and practice) based on the KAP model (Rogers, 2003), and their underlying building blocks, leading to the research design. According to this figure, tertiary EFL teachers' knowledge of critical thinking motivates conducive classroom practices for critical thinking. This sequence of variables clarifies RO 3 and associated RQ 3, which explore the correlation among these three variables using a quantitative method and a survey questionnaire.

Firstly, knowledge (Shulman, 1986) encompasses two dimensions: tertiary EFL teachers' content knowledge and their pedagogical content knowledge of critical thinking. Tertiary EFL teachers' content knowledge includes the theoretical conception of critical thinking (Anderson et al., 2001; Facione, 1990, 1994, 2000). However, their pedagogical content knowledge includes their practical understanding of HOTs (Anderson et al., 2001), including the use of open-ended questioning, teaching materials (Portelli, 1994), social learning activities, and student-centered instruction (Facione & Facione, 2013; Lu & Xie, 2022; Vygotsky, 1978). Both content knowledge and pedagogical content components inform RO 2 and associated RQ 2, which investigate tertiary EFL teachers' critical thinking knowledge using a qualitative approach and semi-structured interviews.

Secondly, motivation, as conceptualized by SDT (Ryan & Deci, 2000), involves tertiary EFL teachers' senses of relatedness, autonomy and competence. Relatedness encompasses institutional monitoring and institutional supports (Elder, 2019), including infrastructure, training (Elder, 2019; Khan, 2009), funding (Jasim, 2022b) and reward (Ryan & Deci, 2000). Autonomy includes curriculum, course materials and workload. Competence refers to tertiary EFL teachers' self-beliefs that encompass their interest in teaching critical thinking, belief in their ability to teach it, and desire for professional development (Liu & Puteh, 2025; Marin & Pava, 2017) to teach it. Professional development includes research skills (Crawford Academic and Research Skills Advisors, 2015), teaching skills and technological skills (Hsu & Chen, 2019). These motivational components are parts of the KAP model that provide the basis for RO 2 and associated RQ 2.

Thirdly, analyzing practice requires breaking it down into two distinct dimensions, each playing a vital role in behavior change. Open-ended questions (Anderson et al., 2001; Facione & Facione, 2013), teaching materials (Portelli, 1994), social learning activities, and student-centered instruction (Facione, 2013; Lu & Xie,

2022; Vygotsky, 1978) are parts of teaching strategies. In addition, supportive behaviors (Carter, 2020; Le & Nguyen, 2024; McBride & Knight, 1993; Portelli, 1994) and flexible attitudes (Orakcı & Khalili, 2024) are components of teaching behaviors (Portelli, 1994; Vygotsky, 1978). All these components of teaching strategies and teaching behaviors inform RO 1 and associated RQ 1, which explore tertiary EFL teachers' practices of critical thinking using a qualitative approach and semi-structured classroom observation.

This conceptual framework corresponds to the endeavour to explore Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation and practices. Bangladeshi tertiary EFL teachers lack a proper understanding of critical thinking and its teaching (Islam et al., 2021). Moreover, they are insufficiently motivated to teach critical thinking (Ullah et al., 2022) and their pedagogical practices primarily incline towards traditional teacher-centered education (Chowdhury, 2016; Raqib, 2019). An exploratory sequential research design was chosen to investigate these issues.

This conceptual framework provides an extensive view of tertiary EFL teachers' critical thinking CK and PCK, encompassing a range of components. Particularly, the inclusion of broad theoretical and practical aspects of critical thinking CK and PCK will provide an in-depth understanding of how tertiary EFL teachers' knowledge of critical thinking is shaped. A qualitative approach was implemented to investigate their knowledge as knowledge covers a wide range of information, including the details in this conceptual framework and beyond.

Moreover, the conceptual framework highlights autonomy, relatedness, and competence as parts of teacher motivation, based on the SDT (Ryan & Deci, 2000), which allows for understanding the factors that influence their motivation to teach critical thinking. Specifically, pinpointing the components of autonomy, relatedness and competence will provide a nuanced view of how extrinsic and intrinsic motivational factors interact to accelerate or hinder their critical thinking practices.

Regarding practice, the conceptual framework highlights tertiary EFL teachers' pedagogical practices against the backdrop of Bloom's taxonomy (Anderson et al., 2001) and constructivism (Vygotsky, 1978), thereby enabling a systematic understanding of classroom performance across different pedagogical dimensions, including teaching strategies and behaviors. In particular, the framework underscores specific strategies and behaviors, including open-ended questioning, social learning

activities, student-centered instruction, and teaching materials, which will provide a thorough picture of their classroom practices, allowing identification of specific gaps and subsequent measures to address them. A qualitative approach was implemented to investigate their practices, as this would capture both predetermined and unexpected events in the classroom.

Finally, viewing tertiary EFL teachers' critical thinking practices as the result of the combination of their critical thinking knowledge and motivation through the lens of the KAP model (Rogers, 2003) helps identify the major influencing factors in their practices. A quantitative approach was chosen to identify correlations among these variables and provide a structured view of their interactions. Overall, the conceptual framework of the study clarifies how knowledge and motivation influence teaching practices. Moreover, drawing on an extensive literature, it highlights the founding principles behind examining Bangladeshi tertiary EFL teachers' knowledge, motivation and practices. Thus, the conceptual framework provides the foundation for understanding Bangladeshi tertiary EFL teachers' knowledge, motivation and practices of critical thinking.

2.18 Chapter Summary

The chapter enunciates the significance of English in the globalized job market and the place of critical thinking in English teaching and learning settings. In addition, it captures Bangladeshi EFL teaching perspectives at the university level. In this regard, a range of theories has been utilized to determine the study's variables. Overall, the chapter establishes a logical foundation for conducting this research by identifying knowledge and theoretical gaps through an exhaustive exploration of the existing literature, both in general and within the theoretical framework.

CHAPTER 3
RESEARCH METHODOLOGY

3.1 Introduction

Chapter 3 embodies the details of the research method. This chapter provides a comprehensive understanding of the research activities and the rationales behind the choices made. Additionally, this encompasses research paradigms, methodologies, design, and ethics. Fundamentally, the following research questions will guide this study:

RQ1: How do Bangladeshi tertiary EFL teachers incorporate critical thinking into their classroom practices?

RQ2: What is the level of knowledge of critical thinking among Bangladeshi tertiary EFL teachers?

RQ 3: To what extent do critical thinking knowledge, motivation and practices of Bangladeshi tertiary EFL teachers correlate?

The three research hypotheses generated based on RQ 3 correspond to the methodological approaches related to this research question. The hypotheses are the following:

Hypothesis 1:

H0: There is no relationship between critical thinking knowledge and the motivation of Bangladeshi tertiary EFL teachers.

Hypothesis 2:

H0: There is no relationship between critical thinking motivation and practices of Bangladeshi tertiary EFL teachers.

Hypothesis 3:

H0: There is no relationship between critical thinking knowledge and practices of Bangladeshi tertiary EFL teachers.

These research questions and hypotheses are expanded in the findings and discussions in chapters 4 and 5. The main goal of this study is to provide insights into the current situations of Bangladeshi tertiary EFL teachers' knowledge, motivation, and critical thinking practices.

3.2 The Research Paradigm, Ontology and Axiology

The present study adopts a pragmatic worldview, aiming to find a solution to a problem or "what works" (Creswell, 2014, p. 39; Lodico et al., 2006, p. 9; Cohen et al., 2018, p. 9). Specifically, as a teacher, she became familiar with the terms 'critical thinking' and 'knowledge economy' while teaching creative thinking and was confounded by their complexity. Through self-reflection and peer discussions, she realized that the problem lies in teachers' knowledge, motivation, and practices of critical thinking, compelling her to systematically identify the issues and address them.

Moreover, pragmatism is suitable for researching "culture, human institutions and subjective thoughts (Johnson & Christensen, 2014, p.649) which are evident focuses of this study. Furthermore, pragmatism allows for a diverse epistemological stance, viewing reality through an individual's lived and cultural lens (Bhatt, 2022; Feilzer, 2009; Maarouf, 2019; Molina-Azorin & Fetters, 2019; Morgan, 2014; Parvaiz et al., 2016). Therefore, the researcher's intention to solve teaching problems falls within a pragmatic worldview, which allows a multimethod design.

3.3 Research Design

The study is an Exploratory Sequential Mixed Methods Design that combines qualitative and quantitative methods in new ways (Fishman, 2013), providing flexibility, comprehensive findings, and validity (Crowe et al., 2011; Gray, 2014; Harrison et al., 2017). In addition, case studies are becoming more common in EFL instructional research (Adem & Berkessa, 2022; Roell, 2019; Wu & Miller, 2019). A case can be an individual, a problem, an incident, or even an inconsistency in the social context (Ridder, 2017). Hence, the qualitative phase of the present study is a multiple-

case study involving two or more complete single cases that allow depth and breadth (Adams et al., 2022). Since this study aims to gain an in-depth understanding of Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation and practices, this approach facilitates the goal by providing diverse and in-depth data. However, the quantitative phase utilizes a broader survey design to generalize those findings (Creswell & Clark, 2018).

3.3.1 Exploratory Sequential Design

An exploratory sequential design is a variant of mixed-method research design where the quantitative data is collected based on and followed by the qualitative data (Creswell, 2014; Creswell & Clark, 2018; Lodico et al., 2006) because it fits the researcher's need (Cohen et al., 2018) which is to understand the teaching contexts of critical thinking both in terms of teachers' psychological and practical orientations. Accordingly, Figure 3.1 describes the overall convergent mixed method design:

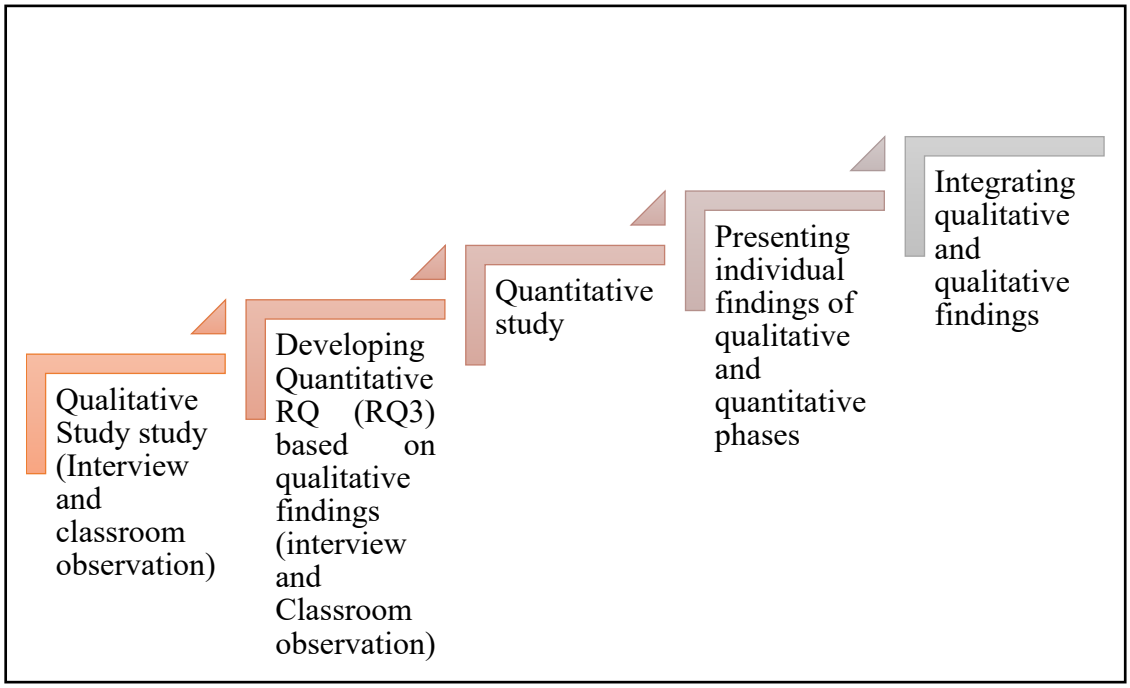

Figure 3.1: Exploratory Sequential Mixed Method Design

Figure 3.1 presents the overall exploratory sequential, mixed-methods research plan. Phase One consists of the qualitative study. In Phase Two, based on the findings of interviews and semi-structured classroom observations, the quantitative research

question and instrument were developed. After conducting the quantitative study in Phase Four, the individual findings of each phase were presented in Phase Five, followed by the integrated findings in Phase Six.

3.3.2 Rationale for Choosing the Design

Several considerations led the researcher to choose the exploratory sequential design for the current study. Firstly, the researcher intended to address critical thinking teaching issues in Bangladeshi tertiary EFL contexts through an in-depth investigation. Therefore, the study employed qualitative interviews and classroom observations, respectively and a quantitative survey to gain a comprehensive understanding of the teachers' perspectives, motivation and practices of critical thinking. Moreover, triangulation helps establish research validity (Creswell, 2014; Creswell & Clark, 2018; Cohen et al., 2018; Johnson & Christensen, 2014), especially in English as a Second Language (ESL) scenarios (Wiśniewska, 2011).

Furthermore, evidence on the implementation of this method in Ph.D. projects (Gao, 2018; Mehring, 2014; Samad, 2014; West, 2011) and empirical studies (Nurbuat et al., 2022; Ha et al., 2021; Nowruzi, 2021; Liao & Li, 2020) in the EFL field corroborates its suitability for long-term doctoral projects. Besides, Bhatt's (2022) doctoral project on the perceptions and practices of critical thinking among London school teachers inspired the current study due to its multidisciplinary participant selection and the lack of correlations.

3.3.3 Challenges of the Design

The exploratory sequential design has several challenging features, including time consumption, the development of a questionnaire based on qualitative findings, and the necessity for early Institutional Review Board (IRB) approval **(**Creswell & Clark, 2018). Moreover, problems such as failure to follow up on qualitative results with quantitative results, limiting interpretations to demographics, overlooking deeper explanations, and differing and insufficient sample sizes may undermine the value of individual phases and threaten the study's validity (Creswell, 2012). Keeping all the above points in mind, the researcher took several steps to ensure the validity of the research design and findings, which are discussed in section 3.8.1 of this chapter.

3.4 The Qualitative Pilot Study

The qualitative pilot study is a small-scale evaluation of research design aspects like data collection tools, variables, and sample size, assessing the effectiveness of data collection and analytical process (Arain et al., 2010; Doody & Doody, 2015). This phase determines the reliability and validity of research instruments and identifies and solves problems in the research process (Arain et al., 2010; Kim, 2011; Secomb & Smith, 2011).

3.4.1 Data Collection Sites

The participants in the qualitative pilot study were selected from two Quacquarelli Symonds (QS)-ranked private universities using purposive sampling, as explained in section 3.5.2. The research sites include Stamford University Bangladesh and the International University of Business, Agriculture and Technology.

3.4.2 Participants

The number of participants in the qualitative pilot study was 3, representing 25% of the main study sample size of 12. Existing practices evince the use of 25% of the main study sample size (Ismail et al., 2017). Moreover, previous studies (Dikko, 2016; Majid et al., 2017) included fewer than 3 people in their pilot study. These justify the sample size for the qualitative pilot study. Purposeful sampling was used to ensure information-rich participants who were willing to participate (Creswell & Clark, 2018).

3.4.3 Data Collection

During the qualitative pilot study, three interviews and two classroom observations were conducted. Appointments with participants were arranged, and informed consent from both teachers and learners was obtained before data collection. The researcher silently took field notes from the back of the class while a mobile camera recorded the sessions (Cohen et al., 2018; Creswell & Poth, 2018). While two participants' interviews were conducted at their workplaces, the other one was conducted via Zoom. While offline interviews were recorded with a mobile phone

application, the online interviews were recorded on the Zoom website (Cohen et al., 2018; Creswell & Poth, 2018).

3.4.4 Data Analysis

The data on trustworthiness, credibility, and peer debriefing were analyzed by comparing the researcher's and reviewer's closed-ended and open-ended observation notes (Ahmed, 2024; Janesick, 2007). The comparisons were made to identify similarities and differences and the underlying researcher bias and the necessity to enhance focus on certain types of data (Janesick, 2007). Finally, self-reflection data were analyzed with thematic analysis following existing practices (Alabidi et al., 2022; Knichel et al., 2025).

3.4.5 Findings

The pilot study aimed to determine the validity and reliability of the qualitative design, which is a main aim of a qualitative pilot study (Gani et al., 2020; Muasya & Mulwa, 2023). Therefore, the related findings are included in the process of establishing qualitative research validity (section – 3.8.1.1), trustworthiness (section – 3.8.1.2), face validity (section – 3.8.1.6), inter-rater reliability (3.8.2.2), and the findings of the self-reflexivity sections (section – 3.8.2.1).

3.5 The Qualitative Main Study

The Qualitative Main Study comprises obtaining permissions from institutions and participants, conducting interviews and observations, and implementing the semi-structured interview and observation protocols. This phase deals with RQ 1 and RQ 2.

3.5.1 Research Sites

While collecting data for the classroom observation and interviews, sites were selected purposefully (Creswell, 2014; Creswell & Clark, 2018; Lodico et al., 2006), which refers to the researcher's deliberate selection of those sites and participants with acquaintances with the study's primary focus (Creswell & Clark, 2018) to help in-depth

understanding of the problem (Creswell, 2014). The researcher purposefully selected participants from three private and two public universities that qualified for the QS World University Rankings 2024 (QS Top Universities, 2023). These universities were United International University, International University of Agriculture, Business and Technology, Stamford University Bangladesh, Dhaka University and Jahangirnagar University. Since research reputation is crucial for QS ranking (QS Top Universities, 2021) and research and critical thinking are closely connected (Carey, 2015; Crawford Academic and Research Skills Advisors, 2015; Nuraini et al., 2021), the faculty members of those universities are likely involved in research activities and understand critical thinking and its teaching. Additionally, collecting data from these nearby sites saved the researcher's time and money (Marshall, 1996).

3.5.2 Participants

The study involves 12 tertiary EFL teachers. The criteria for participating in the study were that they were teaching at the tertiary level and teaching language courses to first-year students in English non-major departments at their respective universities. Purposeful sampling (Creswell & Clark, 2018) was employed because these individuals can "best understand the research problem and the research questions" (Creswell, 2014, p. 239) and are information-rich, able to share their experiences vividly and reflectively (Palinkas et al., 2013). Table 3.1 shows the demographics of the 12 qualitative research participants (classroom observation and interview).

Table 3.1

Demography of the Qualitative Research Participants

Pseudonyms	Gender	Age	Experience	Highest Degree	Affiliated Universities
Munalisa	F	23 - 35 years	3 – 7 years	Master's	Public
Progga	F	36 – 45 years	8 -12 years	Master's	Private
Farhan	M	36 – 45 years	13 – 20 years	Master's	Private
Clent Moss	M	23 - 35 years	0 – 2 years	Master's	Public
Sumaiya	F	36 – 45 years	13 – 20 years	Master's	Private
Raihan	M	23 - 35 years	0 – 2 years	Master's	Private
Sony	M	23 - 35 years	3 – 7 years	Master's	Public

Rochester	M	36 – 45 years	13 – 20 years	PhD	Private
Borsha	F	23 - 35 years	0 – 2 years	Master's	Private
Zonoon	M	36 – 45 years	13 – 20 years	Master's	Private
Tahmina	F	23 - 35 years	0 -2 years	Master's	Private
Rahin	M	23 - 35 years	3 – 7 years	Master's	Public

Table 3.1 presents the participants' demographic data, including gender, age, teaching experience, and educational achievement. The qualitative participants include 58.33% (n = 7) males and 41.66% females (n = 5), with 58.33% aged ranging from 23 – 35 years and 41.66% aged ranging from 36 -45 years. Among them, 33.33% have 0-2 years of teaching experience, 25% have 3-7 years of experience, 8.33% have 8-12 years of experience, and 33.33% have 13- 20 years of teaching experience. While 91.66% of them hold Master's degrees, only 8.33% are PhD degree holders. Likewise, while 66.66% are affiliated with private universities, 33.33% are affiliated with public universities.

Munalisa, a female participant aged 23-35 years. Her teaching experience ranged from 3 to 7 years. She teaches at the Department of English in a public university. Her highest educational degree is a Master's.

Progga, a female participant aged 36–45, teaches in the English department of a private university. Her teaching experience ranged from 8 to 12 years. Her highest educational qualification is a Master's degree.

Farhan, a male participant aged 36–45 years, teaches in the English department of a private university. His teaching experience ranged from 13 to 20 years. His highest educational qualification is a Master's degree.

Clent Moss, a male participant aged 0–2 years, teaches in the English department of a public university. He had 3-7 years of teaching experience and a Master's degree as his highest educational qualification.

Sumaiya, a female participant aged between 36 and 45 years, teaches in the English department of a private university. She had 13-20 years of teaching experience and a Master's degree as her highest educational qualification.

Raihan was a male participant aged between 23 and 35 years. His teaching experience ranged from 0 to 2 years at the English department of a private university. He had a Master's degree as his highest educational qualification.

Sony was a male participant aged between 36 and 45 years. His teaching experience ranged from 3 to 7 years at the English department of a public university. He obtained a Master's degree as his highest educational qualification.

Rochester, a male participant aged between 36 and 45 years, was teaching in the English department of a private university. His experience ranged between 13 and 20 years. He achieved a PhD as his highest educational qualification.

Borsha, a female participant, aged between 23 and 35 years, was teaching in the English department of a private university. Her experience ranged between 0 and 2 years. She obtained a Master's degree as her highest educational qualification.

Zonoon, a male participant aged between 36 and 45 years, had teaching experience of 13-20 years. He was affiliated with the English department of a private university. His highest educational qualification was a Master's degree.

Tahmina, a female participant aged between 23 and 35 years, had teaching experience of 0-2 years. She was affiliated with the English department of a private university. Her highest educational qualification was a Master's degree.

Rahin, a male participant aged between 23 and 35 years, was teaching in the English department of a public university. Her teaching experience ranged from 3 to 7 years. He had a Master’s degree as his highest educational qualification.

3.5.3 Sample Size and Selection

12 tertiary EFL teachers were selected for interviews, as data saturation is reached with this number (Creswell & Clark, 2018; Guest et al., 2006; Guest et al., 2020). The participants were selected using purposeful sampling (Creswell & Clark, 2018). Particularly, six of the twelve interviewees were selected for classroom observations based on their willingness, showing observation data adequacy with five participants or even three participants (Dworkin, 2012; Hennink & Kaiser, 2022; Shih, 2013).

3.5.4 Semi-structured Interview

Semi-structured interviews were used to address RQ 2, as this allows in-depth information that is impossible with a questionnaire (Adams, 2015; Kallio et al., 2016; Cohen et al., 2018).

3.5.4.1 Semi-structured Interview Protocol

An interview protocol is a researcher-developed, semi-structured interview data collection tool (Creswell, 2013) containing predetermined (Creswell, 2014), open-ended (Cohen et al., 2018), and theory-based (Adams, 2015; Galletta, 2013) questions to explore participants' experiences and knowledge (Galletta, 2013). Questions related to RQ2 focused on the conceptions of critical thinking and its teaching, as indicated in Chapter 2 (Sections 2.4, 2.5, 2.8 & 2.14). The protocol (Appendix 1), adapted from sample protocols (Creswell, 2012; Creswell, 2014; Nassery & Langren, 2018; Rodrigues-de-Souza et al., 2016), utilizes probing questions (Adams, 2015; Johnson & Christensen, 2014) to extract richer responses from the open-ended questions (Adams, 2015).

The questions in the protocol are categorized into two parts: CK and PCK, while the latter category involves knowledge of teaching materials (5 items), questioning (8 items), social learning activities (4 items), ICT integration (3 items), teaching instructions (5 items) and challenges (5 items). The protocol was developed through an initial literature review, followed by revisions made based on the pilot study and reviewers' comments.

The number of questions under the sub-categories varies with teachers' involvement, which is consistent with previous studies (Kallio et al., 2018; Lv et al., 2018; Muhtarom et al., 2019; Zanini et al., 2019) that developed semi-structured interview protocols with varying item counts across categories. Thus, the number of questions in the interview protocol may not impede the researcher from gaining important and adequate data on the topic.

3.5.4.2 Semi-structured Interview Data Collection

Four interviews were conducted via Zoom, while eight were conducted at the participants' workplaces, with both the participants' and the researcher's convenience considered. Studies show that the use of online and offline interviews does not make a significant difference in data quality (Jenner & Myers, 2018), indicating that the two modes do not adversely affect validity and reliability. The average interview length was 62 minutes, aligning with the 30-60 minutes proposed by Cohen et al. (2018). Pseudonyms were used to preserve their privacy. With the participants' consent, offline

interviews were recorded through mobile applications. However, the researcher relied entirely on recordings for interview data collection to avoid distractions during note-taking and session navigation. After finishing the interviews, the researcher wrote self-reflections as writing self-reflections after qualitative data collection is practiced (Nadin & Cassell, 2006; Watson et al., 2023).

3.5.4.3 Validity and Reliability of the Interview

Several validity measures, including establishing trustworthiness and construct and face validity, were ensured. Likewise, some reliability measures, involving the researcher's self-reflections and inter-rater reliability, were established. Further elaboration is explained in section 3.8.

3.5.5 Classroom Observation

Using semi-structured classroom observations, the study explored the critical thinking classroom practices of Bangladeshi tertiary EFL teachers to determine the use of the strategies and behaviors that promote learners' critical thinking (RQ1). Several studies (Kolajo, 2020; Jamil & Rizvi, 2025; Tam & Tien, 2024) used classroom observations to explore critical thinking practices, which indicate that the approach is appropriate.

3.5.5.1 Semi-structured Classroom Observation Protocol

Observation protocols help capture unpredictable behaviors and conversations in an organized way (Lodico et al., 2006) while a semi-structured observation protocol permits recording both predetermined and unexpected yet important classroom practices (Gillham, 2008). Hence, the researcher developed a semi-structured observational protocol (Appendix 2) (Creswell, 2016; Cohen et al., 2018; Lodico et al., 2006). The checklist contains predetermined questions on teaching behaviors, strategies, and materials based on critical thinking instruction, critical thinking skills, and critical thinking in the EFL context, using Bloom's taxonomy and social constructivism.

3.5.5.2 Observation Validity and Reliability

Several reliability measures, involving the researcher's self-reflections and inter-rater reliability, were established. Further elaboration is explained in section 3.8.

3.5.5.3 Classroom Observation Data Collection

A total of 6 EFL classes were observed. However, the researcher observed random EFL classes across skills, focusing on "good teaching" (p.3) practices, like a stable feedback style (Cohen & Golhaber, 2016), using a valid and well-defined observation tool (RTI International, 2016). The criteria for selecting classes included two considerations: **1)** the students were in the first year and belonged to English non-major departments, and **2)** involved language skills development. Since these 6 classes met the above criteria, they were observed. The procedure for classroom observation data collection is illustrated in Figure 3.2:

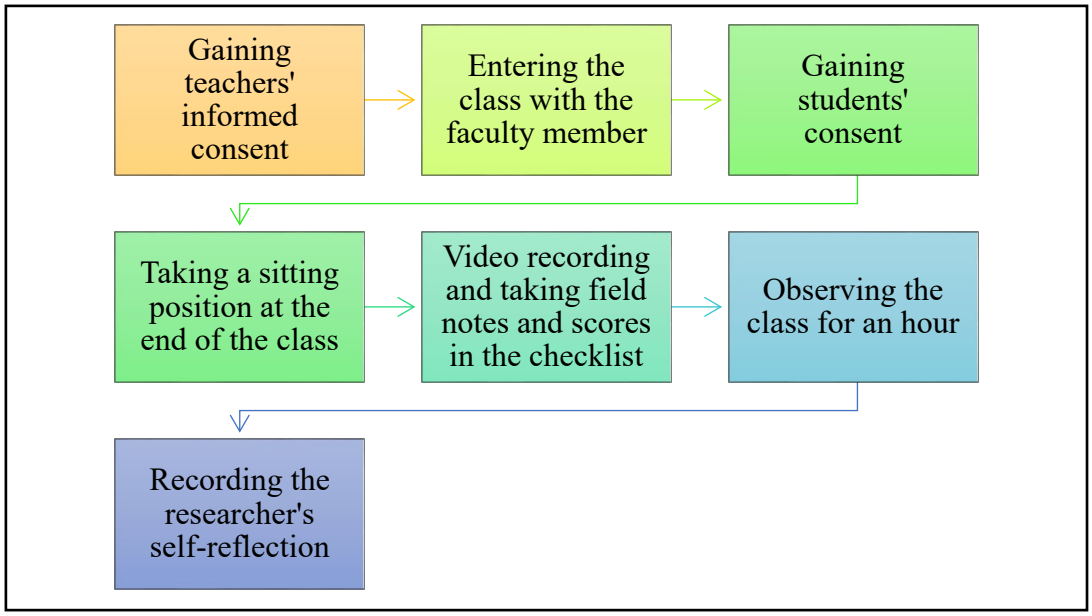

Figure 3.2 The Procedure for Classroom Observation Data Collection

According to Figure 3.2, the process began with obtaining the teachers' and the students' informed consent. Setting up the camera and sitting at the back of the classroom, the researcher observed classes for an average of 55 minutes (Tsai &

Denton, 1993; Dockrell et al., 2012) as a non-participant observer (Cohen et al., 2018; Creswell, 2016; Johnson & Christensen, 2014) and then wrote self-reflections.

The researcher began data collection through field notes, checklist scores, and video recordings, capturing both verbal and non-verbal behaviors. However, unstructured field notes were taken due to challenges in matching real-time notes to the checklist. Despite this, the semi-structured nature of the data was maintained by aligning observation notes with the checklist items during the data preparation phase (Section – 3.5.6.1). Next, field notes captured the classroom physical layouts and sensory details, e.g., sight, hearing, touch, and smell (Creswell, 2016, p. 250) to deepen understanding of the core phenomenon (Dockrell et al., 2012).

The study collected unstructured field notes on the classroom environment, considering the unpredictability of classroom setups and sensory details (Cohen et al., 2018), using video recordings and the researcher's self-reflections. Classroom images were taken from behind to maintain students' privacy (Cohen et al., 2018) as they were present when she entered the classrooms. Thus, unstructured, semi-structured and visual data were collected to capture the complexities of the classroom incidents.

In addition, field notes on classroom sensory and overall environment included both descriptive observations (lights on, car horns, 24° Celsius) and interpretive judgements (Large, spacious, limited). The real-time interpretive judgements during the non-participant observation were informed by the researcher's 12 years of teaching experience. In this regard, observation data refers to the data collected through the observer's senses, such as sound and visibility (Smit & Onwuegbuzie, 2018), and the researcher is the primary data collection instrument in qualitative research (Patton, 2014). Moreover, judgements and impressions in the fieldnotes are considered legitimate data, as fieldnotes in observational research can essentially include the observer's 'lived sense' (Emerson et al., 2011, p. 82). Hence, observation data can be a combination of both descriptive data and interpretive data (Emerson et al., 2011). However, the accuracy of the interpretive judgement has been verified based on the established standards of classroom size, temperature, and lighting conditions, and noise conditions.

3.5.6 Qualitative Data Analysis

This section discusses the data preparation process, the choices and the procedures of qualitative data analysis. It presents how the data were prepared for analysis. Moreover, it includes discussions of semi-structured interviews and the analysis of classroom observation data.

3.5.6.1 Data Preparation

Before analysis, interview and classroom observation records were transcribed using the TurboScribe website, and irrelevant and redundant parts were removed and grammatical errors corrected to enhance readability (Gibson & Brown, 2009; Poland, 2002). However, grammatical errors that reflected the participants' authentic language relevant to data interpretation were retained to preserve originality and integrity of the findings (Oliver et al., 2005). Wherever such errors appeared in verbatim quotations presented in classroom observation of dynamics and interview findings, the notation *sic erat scriptum* [sic] was used to indicate that the wording was reproduced as spoken by the participants (Corden & Sainsbury, 2006; Leedham et al., 2025; Stead et al., 2022; Strayhorn, 2023). After transcribing, observation reports were prepared by combining the transcripts and the field notes, excluding biased notes. After that, the unstructured notes were repeatedly reviewed to align with checklist items and images, with identifiable faces blurred to ensure participants' privacy (Cohen et al., 2018), and were incorporated into the reports. Following the participants' verifications of the intended meaning of the transcripts, necessary revisions were made. The ATLAS.ti software and MS Excel were used to analyze interview transcripts and observation notes and descriptions.

3.5.6.2 Semi-structured Interview Data Analysis

The semi-structured interview data were analyzed using a hybrid thematic analysis, combining inductive (data-driven) and deductive (theory-driven) (Proudfoot, 2022; Fereday & Muir-Cochrane, 2006; Swain, 2018) coding for greater rigor (Bingham, 2023; Fereday & Muir-Cochrane, 2006; Proudfoot, 2022), extracting dormant meanings of the data (Akhtar et al., 2024; Xu & Zammit, 2020) and

investigating complex research questions (Proudfoot, 2022). The present study aimed to explore Bangladeshi tertiary EFL teachers' knowledge of critical thinking, including the use of questioning and ICT to develop it. Most importantly, this approach aligns with the pragmatic worldview under which the present project is conducted (Fereday & Muir-Cochrane, 2006; Roberts et al., 2019). The adapted (Braun & Clarke, 2006; Fereday and Muir-Cochrane, 2006; Swain, 2018) hybrid analysis process is demonstrated in Figure 3.3.

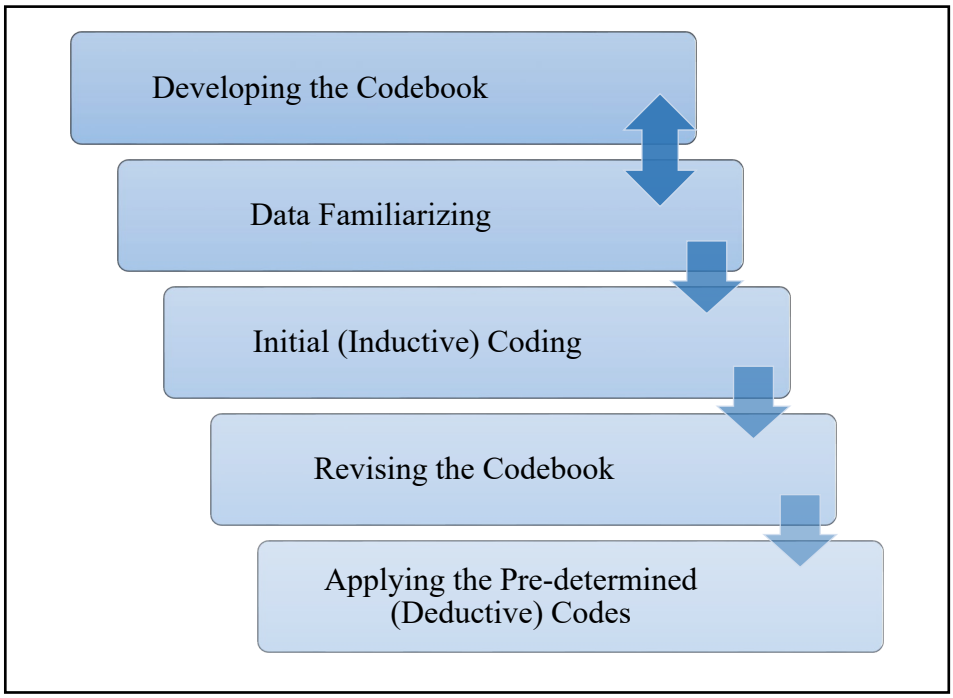

Figure 3.3 Hybrid Thematic Analysis of Interview Data

According to Figure 3.3, the initial codebook, developed based on literature review, research questions and interview protocol (Bingham, 2023; DeCuir-Gunby et al., 2011; Demir, 2024; Swain, 2020), was revised based on the raw data and pilot experimentation (Saldana, 2016) and reviewers' comments. Next, initial coding was done inductively to reduce bias and capture the authentic meaning of participants' thoughts (Braun & Clarke, 2006; Patton, 2014). After that, the codebook was applied to the raw data. Then, a code matrix was developed to categorize the themes, and they were discussed with peers to verify the coding and assumptions. The inductive and deductive codes were merged to develop hybrid codes (Saldana, 2016). Finally, the remaining independent inductive codes and the hybrid codes were reviewed to identify connections and patterns among the codes and to generate themes. The analysis was

reported following established guidelines (Braun & Clarke, 2006; Fereday & Muir-Cochrane, 2006; Saldana, 2016). The findings were synthesized with the findings of RQ 3 in the discussion section (Creswell & Clark, 2018).

3.5.6.3 Classroom Observation Data Analysis

At first, the unstructured classroom environment data were analyzed inductively (Braun & Clarke, 2006). While analyzing classroom environmental descriptions, the 6-phase approach to thematic data analysis (Braun, 2012) was followed, as shown in Figure 3.4.

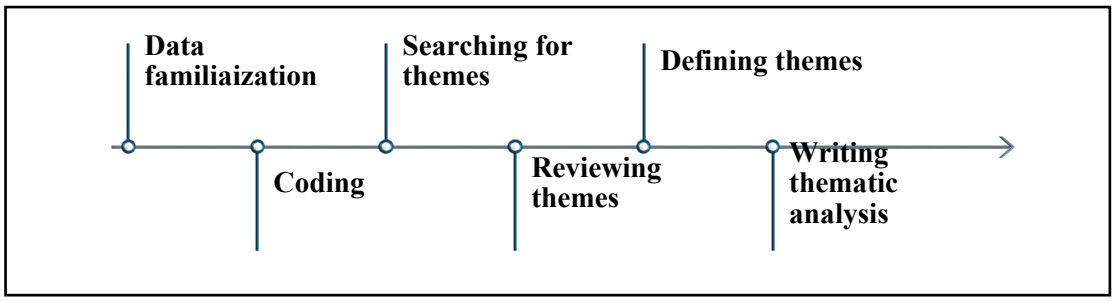

Figure 3.4 Classroom Environment Data Analysis

Figure 3.4 demonstrates that the analysis began with data familiarization through repeated reading, followed by inductive coding. After that, themes were identified by analyzing code patterns, followed by reviewing the themes. Next, the themes were defined, and the thematic analysis was written using a narrative approach. Finally, photos were used to address the gaps in physical descriptions.

In contrast, classroom dynamics-related data were analyzed using mixed methods: percentages and qualitative reports (Maxwell, 2010). Firstly, the qualitative data were analyzed using a hybrid approach, as shown in Figure 3.5.

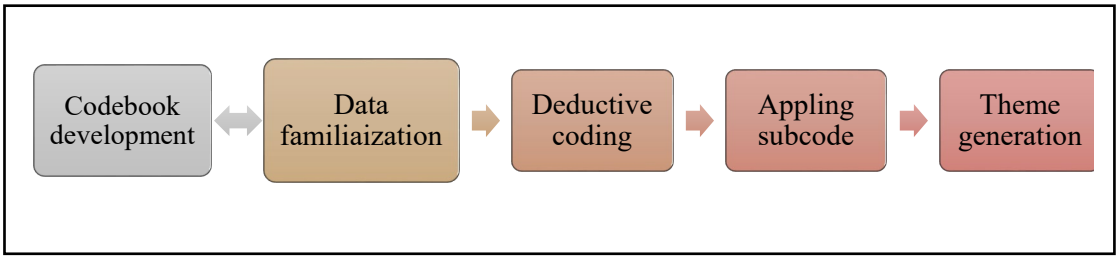

Figure 3.5 Classroom Dynamics-related Data Analysis

According to Figure 3.5, the analysis began with the generation of a literature-informed codebook, followed by data familiarization. Then, based on the available data, the codebook was revised and implemented. After that, the subcodes (Saldana, 2016) were applied to identify the distinctions and patterns within the deductive codes. Next, themes were generated by grouping and categorizing the subcodes.

Quantitatively, the Yes/No items in the checklist were analyzed using percentages and merged with the qualitative themes to achieve a comprehensive and triangulated understanding of the teaching practices (Sandelowski, 2003).

3.5.6.4 Data Saturation for Qualitative Data

Data saturation refers to data adequacy, indicating the research has explored all the possible aspects of the findings (Sims & Cilliers, 2025). Both inductive thematic and deductive code saturation were analyzed to capture the comprehensiveness of the findings (Naeem et al., 2024; Saunders et al., 2017). Inductive thematic saturation was analyzed by maintaining a thematic matrix (Alamrani et al., 2024; Eton et al, 2015; Frunză & Sandu, 2017; Fusch & Ness, 2015), while deductive code saturation was analyzed by counting code frequency across transcripts (Hennink et al., 2017).

For inductive thematic saturation, the 12 interviews were coded sequentially, and inductively emerging sub-themes were recorded. Similarly, the classroom observation themes were systematically tracked. The check marks (√) indicate the presence of a sub-theme in an interview. However, the results of deductive code saturation were presented in a summarized form of the code matrix (Hennink et al., 2017).

Interview data saturation was analyzed with respect to both inductive themes and deductive codes. The findings of inductive thematic saturation are shown in Table 3.2.

Table 3.2

Inductive Thematic Saturation Matrix for Interview Data

Themes	**Theme 1: Content Knowledge of Critical Thinking**			**Theme 2: Pedagogical Content Knowledge of Teaching Critical Thinking**					
Sub-themes	**1**	**2**	**3**	**1**	**2**	**3**	**4**	**5**	**6**
Interviews									
1	√	√	√	√	√	√	√	√	√
2	√	√	√	√	√	√	√	√	√
3	√	√	√	√	√	√	√	√	√
4	√	√	√	√	√	√	√	√	√
5	√	√	√	√	√	√	√	√	√
6	√	√	√	√	√	√	√	√	√
7	√	√	√	√	√	√	√	√	√
8	√	√	√	√	√	√	√	√	√
9	√	√	√	√	√	√	√	√	√
10	√	√	√	√	√	√	√	√	√
11	√	√	√	√	√	√	√	√	√
12	√	√	√	√	√	√	√	√	√

Table 3.2 demonstrates that all the sub-themes belonging to Themes 1 and 2 emerged during the initial interviews and were consistently represented in all subsequent interviews, with no new sub-themes emerging later, confirming inductive thematic saturation.

The summary of the code matrix of deductive codes for interviews is provided in Table 3.3.

Table 3.3

Deductive Code Saturation Summary for Interview Data

Interview Deductive Codes (IDC)	**Number of codes**	**Number of interviews the codes appeared in**
IDC13, IDC15, IDC20, IDC30, IDC36	5	12
IDC11, IDC18, IDC33	3	11
IDC8, IDC10, IDC21, IDC37, IDC40, IDC41, IDC53, IDC54, IDC55	9	10
IDC17, IDC28, IDC34, IDC35, IDC38, IDC51, DC52	7	9

IDC1, IDC4, IDC25, IDC42, IDC46, IDC49	6	8
IDC6, IDC12, IDC23, IDC32, IDC43, IDC45, IDC48, IDC57	8	7
IDC7, IDC14, IDC26, IDC39, IDC47	5	6
IDC5, IDC9, IDC19, IDC22, IDC24	5	5
IDC2, IDC16, IDC31, IDC44, IDC56	5	4
IDC27, IDC29, IDC50	3	3
IDC3	1	1

Table 3.3 shows that 5 of the total 57 deductive codes appeared across all 12 interviews, while 3 codes appeared in 11 interviews and 9 codes appeared in 10 interviews, indicating broad coverage. Moreover, 7 codes appeared in 9 interviews, with decreasing frequency for the remaining codes. These frequencies reflect a strong representation of most deductive codes, confirming the accuracy of the coding framework and code saturation.

Inductive thematic saturation was analyzed for classroom observation data. Table 3.4 presents the saturation matrix.

Table 3.4

Inductive Thematic Saturation Matrix for Classroom Observation Data

Themes	**Theme 1: Classroom environment that fosters critical thinking**		**Theme 2: Tertiary EFL teachers' teaching practices that promote critical thinking**						
Sub-themes	**1**	**2**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Observations									
1	√	√	√	√	√	√	√	√	√
2	√	√	√	√	√	√	√	√	√
3	√	√	√	√	√	√	√	√	√
4	√	√	√	√	√	√	√	√	√
5	√	√	√	√	√	√	√	√	√
6	√	√	√	√	√	√	√	√	√

Table 3.4 shows that all the inductively developed sub-themes under Themes 1 and 2 emerged early and were consistently represented across all 6 observations, indicating thematic saturation.

Likewise, a deductive code saturation matrix was developed to identify the coverage of the predetermined codes across the observations, as summarized in Table 3.5.

Table 3.5

Deductive Code Saturation Summary for Classroom Observation Data

Observation Deductive Codes (ODC)	Number of Codes	The number of classroom observations the code appeared in
ODC3, ODC4, ODC5, ODC7, ODC11, ODC15, ODC16, ODC18, ODC19, ODC21, ODC26, ODC27, ODC29, ODC37, ODC39, ODC45	16	6
ODC1, ODC13, ODC14, ODC17, ODC23, ODC31, ODC42, ODC43	8	5
ODC24, ODC25, ODC34, ODC35, ODC38, ODC46	6	4
ODC6, ODC8, ODC20, ODC22, ODC32, ODC36	6	3
ODC10, ODC33, ODC40, ODC44	4	2
ODC41	1	1
ODC2, ODC12, ODC28, ODC30	4	0

Table 3.5 indicates that 16 of the total 46 pre-determined codes appeared in all 6 observations, with an increasingly smaller number of codes appearing in fewer observation reports. One code appeared once, while four (ODC2, ODC12, ODC28, and ODC30) did not appear at all, as they have positive counterparts, indicating high representation rather than a gap in the framework. Overall, the analysis reveals that deductive code saturation was achieved.

3.5.6.5 Developing RQ 3 Based on the Findings of RQ1 and RQ2

RQ3 was developed based on the findings of RQ1 and RQ2 (Berman, 2017; Creswell & Clark, 2018) in the second phase of the study (Figure 3.1). The semi-structured classroom observation findings for RQ1 revealed partial implementation of critical thinking instructions. Likewise, the interview findings for RQ2 revealed fragmented CK and PCK among the tertiary EFL learners, shedding light on their limited motivational orientations. The findings regarding fragmented knowledge, constrained motivation, and partial classroom practices raised concerns about the strength of the relationships among tertiary EFL teachers' critical thinking knowledge,

motivation and practices. Though RQ1 and RQ2 provided in-depth insights into the 'how' and 'why' of tertiary EFL teachers' knowledge, motivation and practices, they did not highlight the extent to which their knowledge and motivation correlate to their instructional practices of critical thinking.

Therefore, RQ3 was formulated to quantitatively investigate the relationships among tertiary EFL teachers' critical thinking knowledge, motivation, and practices. Finding of RQ3 provided a statistical understanding of the existence and extent of the relationship among tertiary EFL teachers' knowledge, motivation and practice of critical thinking. The findings complemented the qualitative findings by validating the themes, identifying the strengths of their relationships and facilitating the generalization of qualitative insights among broader samples. Thus, RQ3 worked as an integrative research question, enabling the completion of the intended exploratory sequential research design.

3.6 The Quantitative Pilot Study

In phase three (Figure 3.1), the Quantitative Pilot Study employed the questionnaire initially developed among 30 tertiary EFL teachers, using simple random sampling (Johanson & Brooks, 2010; Totton et al., 2023). Data were collected from EFL teachers in the English departments of Dhaka International University, Presidency University, University of Scholars, and Queens University. Data were collected by distributing hard copies of the questionnaire and analyzed using Cronbach's Alpha.

3.7 The Quantitative Main Study

The Quantitative Main Study was conducted to validate the qualitative findings (Figure 3.1). According to Creswell and Clark (2018), in an exploratory sequential research design, quantitative data are used to triangulate and validate qualitative findings. This phase examines the correlation among the study's three variables.

3.7.1 Research Sites

The data were purposefully collected from 10 Southern Asian QS-ranked Bangladeshi public and private universities in Dhaka (QS Top Universities, 2024),

while qualitative research sites were excluded to prevent repetition of answers (Creswell, 2012; Creswell & Clark, 2018). These universities were East West University, North South University, Independent University Bangladesh, Daffodil International University, University of Liberal Arts Bangladesh, Ahsanullah University of Science and Technology, University of Asia Pacific, Green University of Bangladesh, American International University of Bangladesh and Bangladesh University of Science and Technology. Since these universities ranked highly in the QS ranking for research reputation, this indicates the faculty members' critical thinking practices (QS Top Universities, 2025).

3.7.2 Sample Size and Selection

The intended sample was selected based on the simple random sampling method (Creswell, 2013; Lodico et al., 2006). The details of the simple random sampling is shown in Figure 3.6.

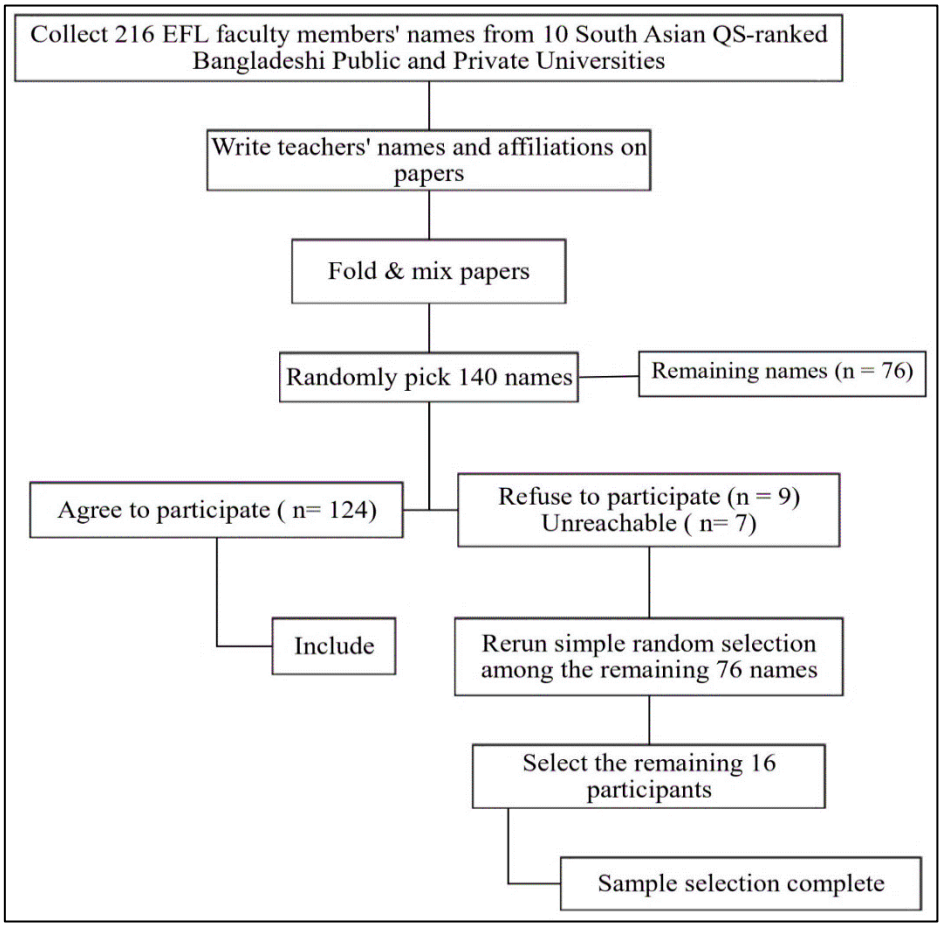

Figure 3.6 Simple Random Sampling Flowchart

Figure 3.6 indicates that the total population from 10 South Asian QS-ranked Bangladeshi public and private universities in Dhaka is 216 EFL teachers. So the target sample size for this population is 140 with a confidence level of .05 (Krejcie and Morgan, 1970). After identifying the population, all 216 teachers' names and affiliations were written on small pieces of paper. Then, the papers were folded and mixed so that no specific name could be identified. Next, 140 names were randomly picked by the researcher. Following this, 140 teachers were contacted face-to-face. While 124 teachers agreed to complete the survey, 9 of them refused to participate and 7 were unreachable. Hence, the simple random selection was rerun among the remaining 76 names. Now, the remaining 16 participants were selected and they participated. Thus, the sample selection was completed. Accordingly, the demography of the survey participants is presented in Figure 3.7.

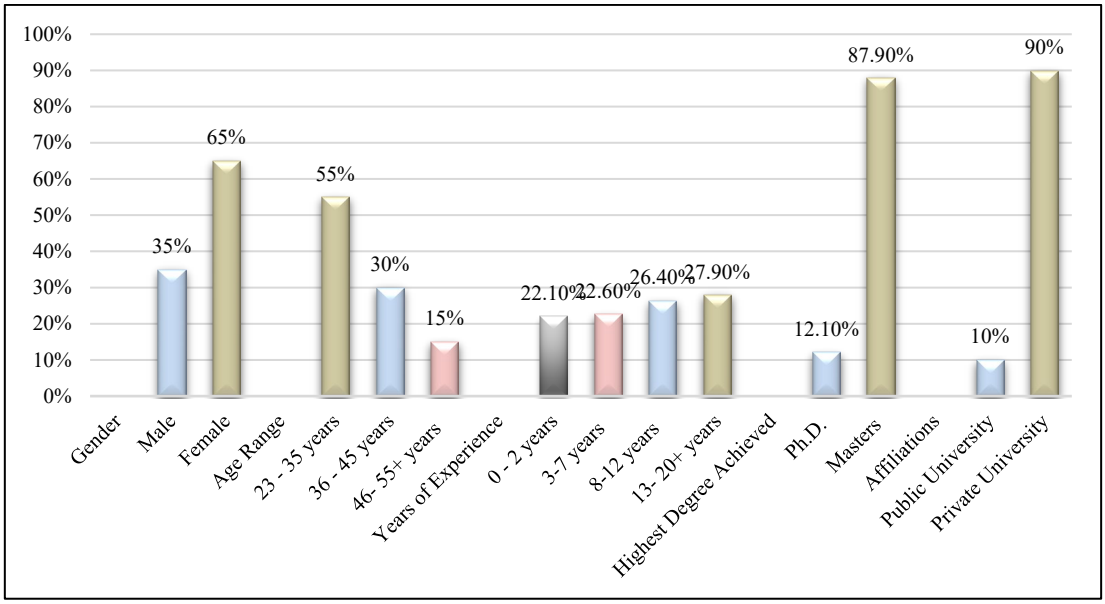

Figure 3.7 Demography of the Quantitative Research Participants

Figure 3.7 shows that 65% of participants are female, while 35% are male. Moreover, 55% of them fall within the age range 23 – 35 years, while 30% and 15% fall within the age ranges 36 -45 and 46 – 55+, respectively. In addition, 22.1% and 22.6% of them, respectively, had 0 – 2 years and 3 – 7 years of teaching experience, whereas 26.4% and 27.9 respectively, had 8-12 and 13 – 20+ years of teaching experience. Furthermore, while only 12.1% had PhD degrees, 87.9% had Master's

degrees. Finally, 10% were affiliated with public universities, while 90% were affiliated with private universities.

3.7.3 Questionnaire Development

The development of the questionnaire included several steps, as shown in Figure 3.8

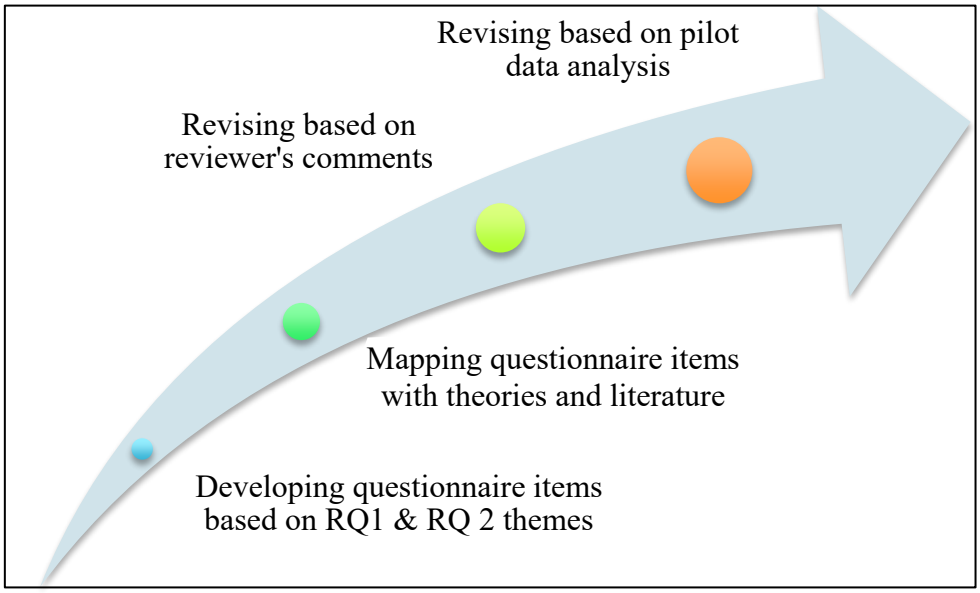

Figure 3.8 Steps of Questionnaire Development

Figure 3.8 shows that the questionnaire items were systematically designed based on themes from interviews (RQ 2) and classroom observations (RQ 1) (Boateng et al., 2018; Younas & Porr, 2018; Creswell & Clark, 2018). After that, the items were mapped with the theories and literature used in this study. Particularly, the items related to tertiary EFL teachers' critical thinking knowledge, motivation, and practice complied with the conception of critical thinking, self-determination theory, teacher CPD, Bloom's taxonomy, and social constructivism. A final version of the Likert scale questionnaire was developed after revising the items based on reviewers' comments and pilot study experiences. The values of Likert scale questionnaire items range from Strongly Agree (7) to Strongly Disagree (1) (Appendix 3). The questionnaire development process involved validation through alignment with theories and qualitative findings, piloting and implementing expert reviews.

The varying numbers of items across questionnaire sections align with those of previously developed, valid and reliable questionnaires (Bailey, 2018; Koo et al., 2016; Lopez-Diaz et al., 2018; Mallah et al., 2021; Wahono & Chang, 2019), indicating the unwavering validity and reliability of the current instrument. Parts B and D have more items reflecting the evolving nature of the teacher knowledge and strategies (Abahussain, et al., 2022; Liang, 2023; Susilo et al., 2021; Yaiche, 2021), whereas the conceptions of critical thinking and teaching behaviors are relatively static (Ennis, 1985; Facione, 1990; Halpern, 2014; Paul & Elder, 2014; Portelli, 1994; Vygotsky, 1978). Moreover, Part C explores tertiary EFL teachers' motivational aspects, like autonomy, competence and relatedness, aligning with the contextual factors, such as training (Elder, 2019), funding (Bangladesh Sangbad Sangstha, 2022; Jasim, 2022b) and rewards (Sahito & Vaisanen, 2019). Likewise, the autonomy section focuses on teachers' autonomy regarding materials (Reinders & Lewis, 2008), workload (Johari et al., 2018; Rahnuma, 2020a) and curriculum (Costello, 2012; Hughes & Lewis, 2020) while the competence section highlights intrinsic motivational factors, like teaching interest (Han & Yin, 2016; Stirling, 2014) and professional growth, e.g., developing teaching and research skills (Carey, 2015; Crawford Academic and Research Skills Advisors, 2015; Nuraini et al., 2021; Ryan & Deci, 2000).

3.7.3.1 Reliability and Validity of Questionnaire

Establishing reliability aims to reduce the by-chance of errors and increase the instrument's stability, acknowledging that absolute stability is impossible (Cohen et al., 2018). Tables 3.2 and 3.3 present the validity and reliability measures used in this study.

3.7.4 Survey Data Collection

Data collection involved both hard copies and Google Forms shared by the researcher via email and social media, allowing participants ample time to conveniently respond.

3.7.5 Survey Data Analysis

To address RQ3, the Pearson correlation coefficient test was used (Kremelberg, 2011). For H1, H2, and H3, associated with RQ 3, a Pearson correlation was used to analyze the relationships between two variables (Field, 2024) using SPSS 27, as many recent studies (Beckmann et al., 2025; Singh & Jain, 2024) used this version of SPSS to analyze data. Particularly, many recent complex statistical analyses, like regression and chi-square (Masudi et al., 2025; Zhang et al., 2025), including Pearson correlation (Kalsoom et al., 2025; Miskan et al., 2024) were done using this version. Therefore, the use of the 27th version of SPSS did not affect the quality of data analysis and validity.

3.7.6 Data Triangulation

Data triangulation is the process of combining data from multiple sources. This is a key part of validity in exploratory sequential design research. In an exploratory sequential design, the quantitative findings are cross-checked against earlier qualitative findings (Crewell & Clark, 2018; El-Khouly et al., 2026; Vinevala et al., 2024). In this study, the findings of RQ 2 were triangulated with the findings of RQ 3.

Triangulation of classroom observation findings was conducted through several steps in the fifth phase of the study (Figure 3.1). Firstly, classroom observation themes were integrated with quantitative evidence on the extent of teaching practices, presented as frequencies and percentages. Secondly, the qualitative evidence was purposefully selected that directly informed the quantitative themes on teachers' behaviors, strategies, instructional practices and teacher-student interaction (Creswell & Clark, 2018).

Thirdly, qualitative data that go in the same direction as the quantitative themes were identified as an approach to confirm the findings' validity (Creswell & Clark, 2018). The convergent data were identified when qualitative evidence showed behavior similar to that in the quantitative report, for example, tertiary EFL teachers' gestures. Moreover, qualitative evidence that contradicted the quantitative themes was selected to develop a nuanced insight into the teaching practices reported in the quantitative findings (Fetters et al., 2013). Whether the qualitative evidence was contradictory was determined by examining whether they reported a contrasting practice. This approach also enhances the findings' validity by showing that there can be exceptions in real-life

from the positive expectations of the study (Creswell & Clark, 2018). Similarly, qualitative data that explained the quantitative themes were integrated to gain a strong understanding of the quantitative scores (Creswell & Clark, 2018). The explanatory nature of the qualitative evidence was determined by examining whether they provided context and underlying factors for the quantitatively reported practices (Creswell & Clark, 2018; Rana & Chimoriya, 2025).

Similarly, some steps were followed to triangulate the quantitative findings from RQ 3. These findings were triangulated with interview data. Firstly, since RQ 3 has three hypotheses examining the correlations among tertiary EFL teachers' critical-thinking knowledge, motivation, and practice, three quantitative themes were generated based on these hypotheses. Secondly, qualitative data that directly informed the relationship between these two variables, for example, knowledge and motivation, were purposefully selected. For example, qualitative evidence showing fragmented knowledge and weak motivation was merged into a narrative aligning with the weak correlation between tertiary EFL teachers' critical thinking knowledge and motivation. After that, qualitative evidence that provided context for the relationship was identified as expansion (Rana & Chimoriya, 2025). These types of data integration ensured the validity of the findings (Creswell & Clark, 2018).

Finally, their integration was completed by drawing combined conclusions from both sources (Creswell & Clark, 2018; Fetters et al., 2013). Following this, the integrations were presented in joint display tables (Buchholtz, 2019; Xiong et al., 2023; Younas & Durante, 2022; Younas et al., 2023). The triangulated findings are reported in the 'Integrated Findings' section in Chapter 4.

3.7.6.1 Developing the 'Framework for EFL Teacher Development in Critical Thinking Instructions'

The framework was constructed using a three-stage synthesis process. First, raw data from the semi-structured interviews, semi-structured classroom observation and survey were categorized into high-level themes. Second, these themes were mapped against existing literature to identify unique contributions of this study. Finally, these refined themes were translated into the structural components of the '**Framework for EFL Teacher Development in Critical Thinking Instructions**'. This ensures that

every node and relationship represented in Figure 5.1 is an abstraction of the evidence gathered during the fieldwork phase.

3.8 Validity and Reliability

Validity in research signifies quality, which must be ensured to make the research meaningful (Creswell & Clark, 2018). The study's validity was ensured by developing quantitative variables from qualitative findings, piloting instruments and excluding qualitative participants from the quantitative sample (Creswell & Clark, 2018). On the other hand, reliability indicates that the participants' responses will remain consistent if the research is repeated (Noble & Smith, 2015; Segal, 2018). In the qualitative study, reliability refers to the consistency between the research process and the researcher's standpoint, ensured through bias acknowledgement, transparency, detailed documentation, participants' feedback, peer involvement and data triangulation (Noble & Smith, 2015). The present study employs a wide range of validity and reliability measures as discussed in the following sections.

3.8.1 Measures to Establish Validity of Research

Extensive measures were implemented to ensure the validity of the present study. Table 3.6 presents an overview of all the study's validity measures.

Table 3.6
Overview of the Validity Measures

Research Features	Validity Measures	Chapter Sections	Execution Phases	Related RQ
Classroom Observation and Interview	Trustworthiness – credibility - Peer Debriefing	3.8.1.1	Qualitative Pilot Study	RQ 1 & RQ 2
	Qualitative Research Validity	3.8.1.2	Literature Review & Qualitative Main Study	RQ 1 & RQ 2
	External Validity	3.8.1.3	Quantitative Main Study	
	Construct Validity	3.8.1.4	Literature review	RQ 1, RQ 2 & RQ 3

Other Validity Measures	Concurrent Validity	3.8.1.5	Qualitative & Quantitative Main Study	RQ 1 & RQ 2
	Face Validity	3.8.1.6	Qualitative & Quantitative Pilot & Main Study	RQ 1, RQ 2 & RQ 3

Table 3.6 summarizes all validity measures taken at different levels of the study. Following Figure 3.1, this table provides information on when all the mentioned validity measures were performed. Moreover, this table aligns the validity measures with the research questions. The measures are explained and justified in the following sections.

3.8.1.1 Qualitative Research Validity

Rich and extensively detailed descriptions strengthened the internal validity (Creswell & Miller, 2000), while participant verification of the field notes, transcripts and observation reports (Creswell & Miller, 2000; Johnson, 1997; Rowlands, 2021) ensured the interpretive validity (Johnson, 1997; Hayashi et al., 2019).

3.8.1.2 Trustworthiness – Credibility - Peer Debriefing

Several measures were taken to establish the trustworthiness of the qualitative study. Observer bias, which invalidates research, occurs when the observer's background, expectations, and subjective perceptions influence the observation. To avoid observer bias, an experienced researcher observed the phenomena once to ensure validity through peer debriefing (Creswell & Miller, 2000; Lodico et al., 2006). The peer researcher received detailed guidance and the same protocol as the main researcher used. The comparison identified some biases that the researcher planned to avoid during the main data collection. Firstly, the researcher only noted the teacher's verbal and non-verbal activities, whereas the co-observer noted the teacher and learners' involvement in a balanced way and the affective environment of the class. Balanced recording of teacher-learner engagements and noting students' affective behaviors assists in evaluating a classroom's suitability for teaching critical thinking. Hence, the researcher addressed the issues more carefully during the main data collection.

In addition, member checking was used to enhance the trustworthiness of the classroom observation and interview data by allowing tertiary EFL teachers to review the transcribed interviews and classroom observation reports. They confirmed the preservation of their intended meanings in the transcripts with minimal suggestions which were addressed accordingly (Creswell & Poth, 2018). Furthermore, the researcher's self-reflections enhanced the trustworthiness of data and findings (Ahmed, 2024). Finally, the researcher treated the participants as individuals with personal choices and opinions, respectfully accepting their ideas. However, despite maintaining objectivity, the researcher acknowledges that the general EFL teaching and learning conditions may have influenced the interview questions at times (Dicicco-Bloom & Crabtree, 2006; Kraft et al., 2021).

3.8.1.3 External Validity

External validity refers to the applicability of findings to a broader population (Findley et al., 2021). The study enhanced generalizability by including participants with diverse demographic profiles, confirming sample "representativeness" (Ferguson, 2004, p. 17). Moreover, the random sampling method reinforced the generalizability (Ferguson, 2004). However, qualitative data lacks generalizability because it does not aim to be generalized (Lowhorn, 2007).

3.8.1.4 Construct Validity

To ensure construct validity, this study's main variables, which are tertiary EFL teachers' critical thinking knowledge, motivation, and practices were rigorously mapped to established theoretical constructs. For example, the self-determination theory (Deci & Ryan, 1985, 2000) was chosen over Gardner and Lambert's (1972) motivation because the former aligns better with self-driven professional development. Self-determination theory applies to organizational behaviors (Deci et al., 2017; Gagné & Deci, 2005) and has been widely applied in organizational motivation studies (Kausar et al., 2025; Siahaan et al., 2024; Quansah et al., 2026). On the other hand, Gardner and Lambert's socio-educational theory aligns with learning motivation (Gardner & Lambert, 1972) and is widely used for learning motivation research (Alabedi et al., 2024; Sun et al., 2025; Wisnuwardhani, 2022). Based on these comparative

observations, the researcher selected theories and literature that best suited the study's objectives and RQs. Moreover, the questionnaire items were validated through expert peer review to ensure the items truly measured motivation and knowledge.

3.8.1.5 Concurrent Validity

In this study, to achieve concurrent validity, methodological integration was confirmed by developing RQ3 and the quantitative instrument based on interview and observation findings. Moreover, qualitative and quantitative findings were integrated to extract combined conclusions and generate final interpretations (Creswell & Clark, 2018). Therefore, concurrent validity was substantially confirmed.

3.8.1.6 Face Validity

Face validity denotes whether the instruments measure what they are intended to measure (Cohen et al., 2018; Lodico et al., 2006), ensuring their appearance is valid and evokes participants' appropriate emotional responses (Nevo, 1985). Therefore, the two PhD-holding tertiary EFL teachers reviewed the interview and classroom observation protocols and the survey instrument following existing practices (Imran et al., 2024; Philip, 2024).

During the pilot study feedback process, the interview protocol was revised, converting some yes/no questions to Wh questions and correcting grammar and delivery. During the second-phase review, the question arrangements and the relevance of the interview protocol were revised based on Reviewer Two's comments. Similarly, before the main study, Reviewer Two suggested some vocabulary modifications, which were not accepted because the researcher considered that the changes would make the items somewhat confusing. However, the reviewers did not suggest any changes to the classroom observation protocol before either the pilot or the main study.

3.8.2 Measures to Ensure Reliability

Several measures have been taken to ensure the study's reliability. An overview of all the reliability measures is displayed in Table 3.7.

Table 3.7

Overview of the Reliability Measures

Research Features	Reliability Measures	Chapter Sections	Execution Phases	Related RQs
Classroom Observation & Interview	Self-reflection	3.8.2.1	Qualitative Pilot & Main Study	RQ 2
Observation Protocol & Questionnaire	Inter-Rater Reliability	3.8.2.2	Qualitative & Quantitative Main Study	RQ 2 & RQ 3
Questionnaire	Scale Reliability	3.8.2.3	Quantitative Pilot Study	RQ 3

Table 3.7 illustrates that the researcher ensured the reliability of interviews, observations, and questionnaires, including the phases in which these reliabilities were achieved. This table also aligns the research questions with the reliability measures. The measures are explained and justified in the following sections.

3.8.2.1 Researcher Reflexivity

The researcher's self-reflection in a qualitative study reduces researcher bias by identifying how the researcher's responses and experiences, and attitudes influence interviews, which enhances research credibility and data quality through the researcher's reduced authority and increased empathy (McNair et al., 2008; Olmos-Vega et al., 2023; Patnaik, 2013). In this study, the researcher was a complete observer.

In this study, the researcher employed introspective reflexivity (Koopman et al., 2020) to reflect on her thoughts, attitudes, and behaviors throughout the interview and classroom observation processes (Patnaik, 2013; Schön, 1983; Xue & Desmet, 2019), implementing an adapted semi-structured self-reflection form (Appendix 4) (University of Wolverhampton, 2018; James Cook University), which included sections, like description of the event, analysis and interpretation, and outcome.

Immediately after each interview and classroom observation, the researcher utilized the form to reflect on herself and wrote down as much detail as possible. The data were analyzed using deductive thematic analysis. The deductive codes were developed in alignment with the interview questions and observation checklist.

The researcher's self-reflections on the interviews reflect her emotional and professional growth from a confused and nervous interviewer to a more confident and

reflexive one. This growth shaped her data analysis and interpretation, increasingly developing her sensitivity to time, responses, and questions, and her role management, ensuring data authenticity and fostering an unbiased, critical attitude toward data interpretation. Moreover, the continuous self-reflection enhanced her analytical empathy and attentiveness. Her sensitivity to participants' freedom, comfort, and meanings, and her maintenance of relational dynamics alongside her role as a navigator, contributed to well-managed interviews that yielded unbiased and relevant data. Accordingly, she could manage symmetrical code distributions and bring out the accurate meanings underlying each piece of information. In addition, her growing knowledge and skills in conducting interviews, informed by her ongoing interview experience, training in qualitative data collection, and understanding of Grice's (1975) four maxims, substantially contributed to the data quality and adequacy. Thus, her analysis was free from personal influence and provided a true understanding of the context.

Classroom observation self-reflections reflect the researcher's evolution from nervousness to confidence and competence in data collection. This allowed her to ensure accurate observation data collection and credible analysis. In addition, through her self-reflections during the pilot study and her understanding of the literature, she mastered the ability to observe objectively and manage issues, ensuring data credibility. Her awareness of data quality and objectivity strengthened her ability to assess challenges and respond accordingly. These growths significantly forged her data analysis and interpretations. Her growing confidence, methodological consciousness and competence enhanced her sensitivity and ethical neutrality in data analysis. Specifically, continuous reflections on her roles, actions, and emotional involvements, informed by Schön's (1983) theory of reflective practice, helped her control personal biases, leading to more credible interpretations of the data. Thus, her data quality and growing observation competence together contributed to authentic evidence and insights. Therefore, classroom observations presented truthful classroom incidents and showed her continuous growth in critically and unbiasedly interpreting data.

3.8.2.2 Inter-rater Reliability for Observation Checklist and Questionnaire

The inter-rater reliability of the observation checklist (Cohen et al., 2018; Lodico et al., 2006) was established by asking two EFL faculty members to observe the

video-recorded class twice by rating the checklist items using the classroom observation checklist evaluation form (Appendix 11) and the questionnaire evaluation form (Appendix 12). Cohen's Kappa scores on the classroom observation checklist were k = .839, SE = 109, p < .001 and the questionnaire was k = .808, SE = .074, p <.001, indicating their nearly perfect agreement (McHugh, 2012).

3.8.2.3 Scale Reliability of the Questionnaire

Cronbach's α was used to assess the questionnaire's reliability (Cohen et al., 2018; Segal & Fredrick, 2018). Table 3.8 shows the score of each group of questionnaire items.

Table 3.8

Cronbach's Coefficient α Scores of the Groups of Questionnaire Items

Variable names	Number of items	α Coefficient Scores
Knowledge	24	.860
Motivation	18	.880
Perceived practices	23	.880

Table 3.8 presents the Cronbach's scores for EFL teachers' knowledge items, scoring .860 and both motivation and perceived practices, scoring .880, indicating good reliability (Segal & Fredrick, 2018). After running the reliability test, a few items with item-total correlations below .30 were removed due to their weak contributions to the scales (Field, 2024), while some were retained for their theoretical relevance to the constructs (DeVellis & Thorpe, 2022).

3.9 Ethical Considerations

Research ethics means obtaining the necessary permissions from participating organizations and personnel (Creswell & Clark, 2018; Creswell, 2012). These permissions protect participants from any discomfort or harm that may arise from their involvement in the study.

3.9.1 Institutional Review Board (IRB) Approval

The Institutional Review Board (IRB) is a committee of faculty members that reviews and approves research to protect the rights of research participants. The researcher gained approval from the IRBs of Universiti Teknologi MARA in Malaysia (Appendix 17) and the United International University in Bangladesh (Appendix 18), with respective ethical approval reference numbers REC/08/2024 (PG/MR/412) and IREB-2025-005.

3.9.2 Informed Consent

"An informed consent form is a statement that participants sign before they participate in research" (Creswell, 2012, p. 149). In this study, all participants' informed consent was obtained using an adapted consent form (Creswell, 2012) (Appendix – E) that declared the benefits of participation and the intention to share the findings with them. In addition, participants were allowed to withdraw from the study at any time. Finally, the researcher provided a brief explanation of the research process during interviews and classroom observation to facilitate participants' informed decision-making.

3.10 Chapter Summary

To put it succinctly, Chapter Three delineates a detailed research procedure grounded in a pragmatic worldview, emphasizing problem-solving through an exploratory-sequential research design. This chapter detailed every step, including sampling, instrument development, data collection, and data analysis and validity and reliability measures. Table 3.9 encapsulates the connection between research questions and designs.

Table 3.9

Alignment among the Research Questions/Hypotheses, the Instruments, the Data Analysis Methods and the Software

Research Questions/Hypotheses	Research Questions/Hypotheses	Instruments	Data Analysis Method	Data Analysis Software
RQ1: How do Bangladeshi tertiary EFL teachers incorporate critical thinking into their classroom practices?	——	Semi-structured classroom observation protocol	Hybrid Thematic Analysis	Atlas. ti and MS Excel
RQ2: What is the level of knowledge of critical thinking among Bangladeshi tertiary EFL teachers?	——	Semi-structured Interview Protocol	Hybrid Thematic Analysis	Atlas. ti and MS Excel
RQ3: To what extent do critical thinking knowledge, motivation, and practices of Bangladeshi tertiary EFL teachers correlate?	**Hypothesis 1:** H0: There is no relationship between teachers' critical thinking knowledge and practices of Bangladeshi tertiary EFL teachers.	A 7-point Likert scale questionnaire	Pearson Correlation	SPSS 27
	Hypothesis 2: H0: There is no relationship between critical thinking motivation and practices of Bangladeshi tertiary EFL teachers.	A 7-point Likert scale questionnaire	Pearson Correlation	SPSS 27
	Hypothesis 3: H0: There is no relationship between critical thinking knowledge and the motivation of Bangladeshi tertiary EFL teachers.	A 7-point Likert scale questionnaire	Pearson Correlation	SPSS 27

Table 3.9 shows that RQ 1 aims to explore Bangladeshi tertiary EFL learners' critical thinking practices by observing their classes using a semi-structured classroom observation protocol. Then, RQ 2 studied Bangladeshi tertiary EFL teachers' knowledge of critical thinking and its pedagogy through semi-structured interviews. Finally, the data for the three hypotheses under RQ3 were collected using a 7-point Likert-scale questionnaire and analyzed using the Pearson correlation test in SPSS 27. The chapter closes with an elaboration of the validity and reliability measures and

ethical considerations. Overall, this chapter presents a rigorous, systematic methodological framework to address the research questions.

CHAPTER 4
FINDINGS AND DISCUSSION

4.1 Overview of the Chapter

Chapter 4 presents the key findings from both qualitative and quantitative data. Additionally, this chapter informs the integrated inferences derived from the combination of qualitative and quantitative datasets. In this connection, the chapter contextualizes the findings by connecting them to the existing literature.

4.2 Findings of RQ 1: How Do Bangladeshi Tertiary EFL Teachers Incorporate Critical Thinking into Their Classroom Practices?

This section presents the findings related to RQ 1: *How do Bangladeshi tertiary EFL teachers incorporate critical thinking into their classroom practices?* Six EFL classrooms with 6 Bangladeshi tertiary EFL teachers and 149 undergraduate EFL learners were observed for this objective. Therefore, the findings highlight the classroom practices of critical thinking among Bangladeshi tertiary EFL teachers. The findings include both qualitative and quantitative themes emerged from classroom observations. The qualitative themes are mapped in Figure 4.1.

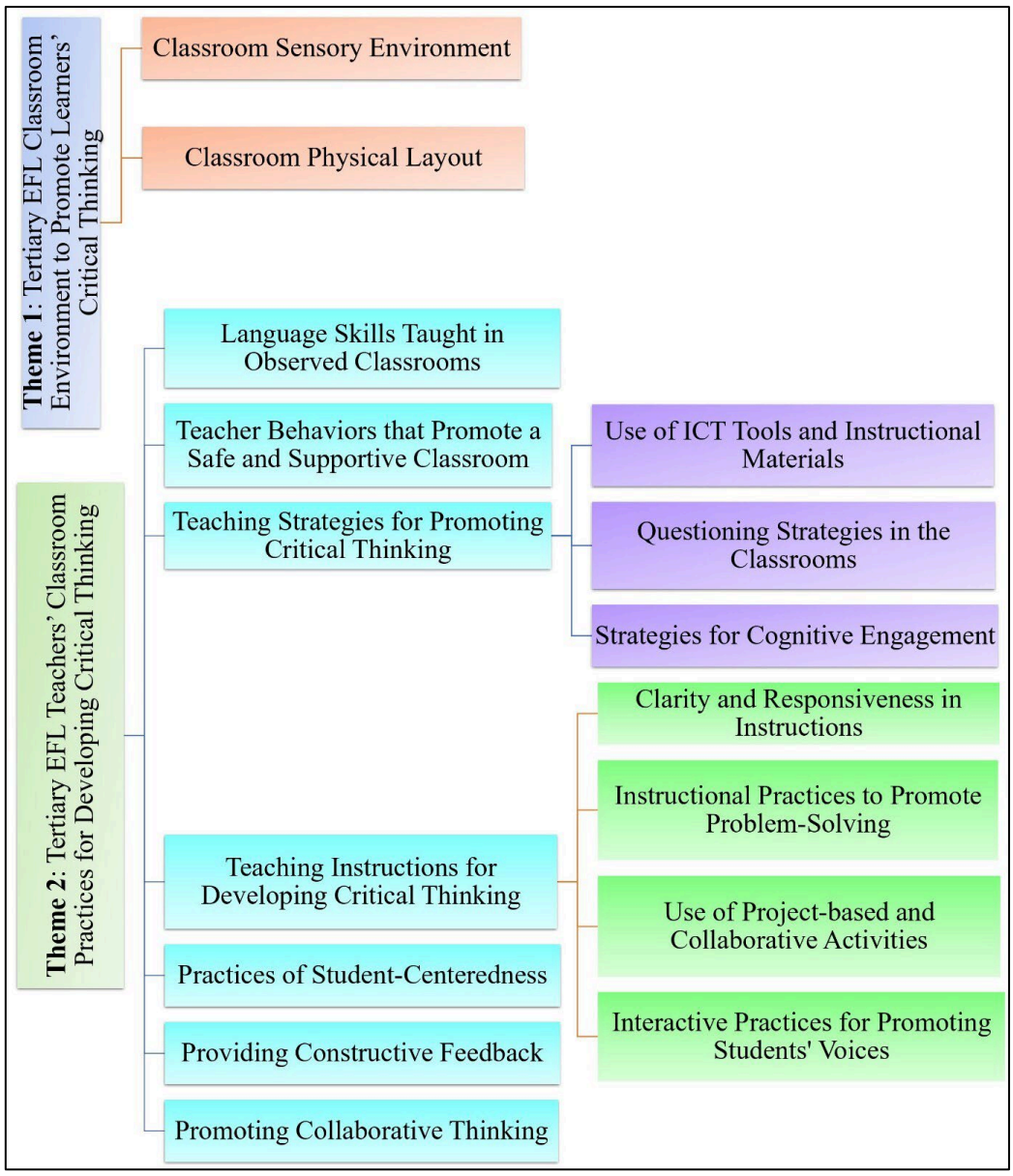

Figure 4.1 Thematic Map of Bangladeshi Tertiary EFL Teachers' Classroom Practices for Teaching Critical Thinking

According to Figure 4.1, the findings encompass two major themes: the tertiary EFL classroom environment that promotes critical thinking and teachers' classroom practices for developing critical thinking. Theme 1 has two sub-themes and subsequent sub-sub-themes, while Theme 2 has seven sub-themes and their sub-sub-themes.

4.2.1 Theme 1: Tertiary EFL Classroom Environment to Promote Learners' Critical Thinking

The theme highlights tertiary EFL classroom features that substantially influence learners' development of critical thinking. The tertiary EFL classroom environment for developing critical thinking comprises the physical and sensory features that shape and support the teaching and learning of critical thinking. Theme 1 has two sub-themes: the classroom sensory environment and the classroom physical layout.

4.2.1.1 Classroom Sensory Environment

The study's investigation into the classroom sensory environment serves as the first sub-theme of Theme 1 of classroom observation findings. To provide a comprehensive analysis, this sub-theme involves lighting conditions, sound conditions, and temperature conditions. The study found that the observed classrooms had diverse lighting features, including various qualities and sources of light. Most classes had adequate electric lighting, as indicated in Tahmina's classroom observation notes: "The room was well lit as the electric lights were on." A similar condition was found in Zonoon's classroom: "The electric lights were on." However, while a few classes had access to daylight, most of them had limited or no access to daylight. The lack of daylight is evident in Sony's classroom: "There was a window at the back of the room, which was covered with a heavy curtain, so there was no natural light coming into the class." In contrast, the adequacy of natural light was identified in Rahin's classroom: "Since there was no curtain, there was adequate natural light."

Additionally, a few classes ensured that the lighting was comfortable for student visibility. This was found in Sony's classroom: "The lights at the back of the room were turned off, and at the front were turned on. The students could see the things written on the board without facing any light reflection." In contrast, some classrooms with closed windows restricted natural light, as shown in Plate 4.1.



Plate 4.1 Closed Windows Are Preventing Daylight

Plate 4.1 shows that the windows on the right are closed and covered with heavy blue curtains. The room is lit with electric lights.

Moreover, the study identified the varying sound conditions of the observed classrooms. While the majority of the classrooms were free from outside noises, one classroom had outside noise, like car horns. Borsha's class was noise-free: "The room was free from outside noise." Likewise, Sony's class did not have access to outside noise: "As the window was closed, no outside sound entered the class." On the other hand, outside noises were audible in Rochester's class: "Car horns could be heard. The finding is supported by Plate 4.2.



Plate 4.2 Closed Windows to Prevent Outside Noise

Plate 4.2 shows that the windows were closed, which prevented outside noise from entering the class.

In addition, the study revealed identical climate conditions in the observed classrooms. All the classes were air-conditioned, as the outside climate was uncomfortably hot, with the normal temperature during March usually ranging between 30 °C and 33 °C. For example, Rahin's classroom was air-conditioned: "As the AC was running, the room temperature was comfortable." A similar condition was observed in Zonoon's classroom: "The AC was running, and the room temperature was lower than the outside temperature." Likewise, the same was the climatic condition of Sony's classroom: "Since the weather was hot, the AC was running at 24 °Celsius."

Overall, sub-theme 1 demonstrates that Bangladeshi tertiary EFL classes are partially supportive of learners' critical thinking development as the lighting, noise and temperature conditions were mixed and provided both enabling and constraining features for learning. While temperature control and reduced external noise facilitate alertness, emotional well-being and cognitive engagement, limited natural light and special inflexibility pose subtle barriers to concentration, comfort and reflective thinking. Therefore, though the general classroom environment provides basic support for learning, further improvements are required to optimize critical thinking learning outcomes.

4.2.1.2 Classroom Physical Layout

Sub-theme 2 explores the classroom physical layout, which observations reveal to be multifaceted, involving classroom organization, accessibility and facilities. The study revealed that all six classrooms had nearly identical orders of the teachers' and students' seating and table arrangements. The findings revealed a classic layout, with teachers' furniture and teaching infrastructure, such as whiteboards and computers, positioned beside the entrances, and students' seats facing the teacher in most classes. This is evident in Borsha's classroom: "After the entrance, there is a table for the teacher and then there is the computer table. Behind the tables, there is a whiteboard and a projection screen. An identical organization was found in Rahin's classroom: "Beside the entrance is a wooden stage. On the stage is the teacher's table. Behind the table are the whiteboard and the projection screen. On the other side of the stage is the dais." Plate 4.3 reinforces these classroom physical features in public universities.



Plate 4.3 Classroom Organization in a Public University

Plate 4.3 demonstrates that the classroom is well-organized with a traditional alignment where the teacher's place was just beside the entrance, followed by wooden benches in two columns for the learners. Similarly, a private tertiary EFL classroom followed a traditional classroom layout as shown in Plate 4.4.



Plate 4.4 Classroom Organization in a Private University

Plate 4.4 shows that the classroom materials are organized in a traditional style. In this style, the teaching materials are placed first, and then the students' chairs are arranged in columns. In contrast, in one classroom, students' chairs were rearranged to facilitate group discussions. For instance, in Borsha's classroom, students' seats were rearranged as shown in Plate 4.5.



Initial row-and-column (traditional) seating arrangement



Rearranged seating for collaboration

Plate 4.5 Modified Seating Arrangement for Students

Plate 4.5 shows that the students' seats were rearranged in a circular position. This enabled the students to sit closer to one another and have better conversations.

In addition to material arrangements, four in six classes ensured cleanliness by putting dustbins in the class. This was found in Rochester's classroom: "There was a dustbin to ensure the cleanliness of the class." Likewise, the same thing was found in Tahmina's classroom: "There was a dustbin near the teacher's table."

Moreover, the study discovered varied accessibility of the observed classes, ranging from narrow to spacious. Five of the observed classes had greater accessibility due to greater accessibility. High accessibility was noticed in Zonoon's classroom: "The class is spacious." However, due to the classroom arrangement, Rahin's class had limited mobility opportunities, as the researcher noted, "Between the stage and the students' benches was a narrow space just enough to access the seats." On the other hand, Sony's classroom was a "medium-sized one."

Additionally, the study found various classroom facilities, ranging from basic to advanced equipment. All the classes had basic physical facilities, like a whiteboard.

For example, in Sony's class, it was observed: "The room was equipped with a whiteboard." Similarly, other things were observed in Tahmina's classroom: "It is equipped with… fans and lights, and an analogue clock." Moreover, most of the classrooms were equipped with ICT infrastructure. This was noticed in Borsha's classroom: "It has a computer, power connection, overhead projector, projection screen and wall-mount speakers." Additionally, many classrooms had internet connectivity, as noted about Zonoon's classroom: "It is equipped with … internet connection." Likewise, Rahin's class was equipped for ICT use: "The classroom had a computer power connection, an overhead projector, a projection screen, a mic, and wall-mount speakers." Most importantly, many classrooms in private universities had Attendance Management Systems (AMS) installed, as found in Rochester's classroom: "The classroom is equipped with …an attendance-taking machine."

Furthermore, the analysis uncovered evidence of nearly similar class sizes across all tertiary EFL teachers. Table 4.1 verifies the findings.

Table 4.1

Class Sizes across Observed Classes

Observed tertiary EFL teachers	**Class size**
Borsha	14 students
Sony	24 students
Zonoon	25 students
Rochester	17 students
Rahin	25 students
Tahmina	44 students
Total	**149 students**

Table 4.1 shows that five observed classes had small sizes, with student numbers ranging from 14 to 25, and one class with 44 students.

On the whole, sub-theme 2 indicates that the physical layouts of Bangladeshi tertiary EFL classrooms appeared to facilitate learners' critical thinking development. On the other hand, traditional row-and-column seating arrangements and teacher-centered organization facilitate instructional structure and focused learning, which can pose hindrances to promoting flexibility for developing critical thinking. In addition, classroom cleanliness suggests facilitation of concentration on the one hand; on the

other hand, it may suggest emphasizing rigidity that may limit open thinking. Thus, the combined impression suggested that the classes are potentially conducive to fostering critical thinking, provided that teachers strategically adapt the layout to use the structures as opportunities to encourage higher-order engagement.

4.2.2 Theme 2: Tertiary EFL Teachers' Classroom Practices for Developing Critical Thinking

The study uncovered multiple aspects of Bangladeshi tertiary EFL teachers' classroom practices. Theme 2 concerns Bangladeshi tertiary EFL teachers' instructional practices and behaviors that influence learners' development of critical thinking. The theme includes six sub-themes: language skills taught in observed classrooms, teacher behaviors that promote a safe and supportive classroom, teacher strategies for promoting critical thinking, teacher instructions for developing critical thinking, practices of student-centeredness, and providing constructivist feedback.

4.2.2.1 Language Skills Taught in Observed Classrooms

Sub-theme 1 shows that varied language skills were taught in the observed classrooms. The details of the skills taught and the departments are presented in Table 4.2.

Table 4.2
Language Skills Taught in Observed Classrooms and Their Departments

Pseudonyms	Skills Taught	Departments
Sony	Reading & speaking	Journalism and Media Studies
Rahin	Speaking	International Relations
Rochester	Reading	Computer Science and Engineering
Borsha	Writing	Computer Science and Engineering
Zonoon	Reading & listening	Computer Science and Engineering
Tahmina	Listening	Computer Science and Engineering

Table 4.2 indicates that among the observed classes, three tertiary EFL teachers (Rochester, Sony and Zonoon) were teaching reading while only one tertiary EFL

teacher (Borsha) was teaching writing. In addition, two tertiary EFL teachers (Rahin and Sony) were teaching speaking, while two (Tahmina and Zonoon) were teaching listening. Moreover, the classes were from English non-major departments, such as one from the Journalism and Media Studies department (Sony), one from the International Relations department (Rahin), and the rest were from the Computer Science and Engineering department (Borsha, Rochester, Tahmina, and Zonoon).

Thus, the findings showed that the observed classes incorporated the four skills for EFL students from both science and social science disciplines. The findings suggest that the varied language skills taught in Bangladeshi tertiary EFL classes offer potential to promote critical thinking among undergraduate EFL learners.

4.2.2.2 Teacher Behaviors that Promote a Safe and Supportive Classroom

Sub-theme 2 uncovered various aspects of teachers' behavior related to promoting a safe and supportive classroom environment that fosters critical thinking among learners. These cover the teachers' entry-time gestures, instructional gestures, feedback gestures, their respect and empathy for students, and encouragement for risk-taking and growth.

The data revealed that all the teachers displayed a friendly gesture upon entering the class. For example, this was observed in Sony's class: "The teacher started the class by greeting the students with a smiling face, standing behind the dais." A similar thing was observed in Zonoon's class as he said, "As-Salaam-Alaikum and good morning, everyone. I hope you are doing good." On the contrary, no teacher was observed to have an indifferent gesture while entering class.

The observations also discovered various forms of supportive instructional gestures. These involve different types of tones, such as friendly tone, frank tone, satiric tone, eloquent and relaxing tone, supportive tone, lively tone, light tone, pretended sad tone, confusing tone, firm and patriotic tone (relevant to content), heavy tone (relevant to content), expressive tones, neutral tone, and informal and dialectical tone. Moreover, facial expressions, such as smiling, posture and proximity, like casual posture, sitting on the table and standing near the students were involved. Furthermore, teachers' classroom movements, such as agile and light movement and supportive classroom movement, along with their gestures, including hand gestures, illustrative gestures, gentle classroom management gestures, and hand gestures for visual emphasis on

content, were supportive of learning. Most importantly, their inclusive eye contact with all students and their use of realia helped establish a supportive classroom environment.

On the other hand, there were different forms of unfavorable instructional gestures. The most common one was making biased eye contact, mostly on the right or on the left side of the class. Moreover, these included flat tone, discarding tone, surprising tone and frustrating tone. In addition, there were unfavorable postures, like folded hands and standing behind the table. Furthermore, some of them moved unfavorably as they aimlessly moved in front of the class, causing distractions and went to a particular group more frequently during the class.

The analysis revealed varied forms of supportive and unfavorable feedback gestures. Supportive feedback gestures included facial expressions, like smiling and laughing, and making eye contact with all students. Moreover, enthusiastic tone, approving voice, appreciating tone, happy tone, light tone, praising tone, and finishing tone were observed. Apart from these, hand gestures, illustrative gestures, nodding, and standing near the students were identified as supportive feedback gestures. Contrarily, the discouraging feedback gestures involved making eye contact on the right side and standing behind the desk. Moreover, they displayed a funny tone (somewhat like mocking), a worrying tone, and a flat tone.

Though the analysis found that all the tertiary EFL teachers in this study showed respect and empathy, some showed disrespect and insensitivity toward students. Some teachers showed respect and empathy by maintaining faith in students, including latecomers in groups, handling inclusion gently, carefully addressing students' procedural concerns, and appreciating students' contributions and partially correct responses. For example, the following excerpt from Zonoon's class:

> **Zonoon**: Very quickly, another female volunteer. Who will read? Willingly. You read (indicating GIRL4)
>
> • ***Girl - 4*** *is shaking her head, meaning she does not want to read.*
>
> **Zonoon**: Why? Do you have a sore throat? (with a surprising tone)
>
> **Girl - 4**: No, sir.
>
> **Zonoon**: Then what?
>
> **Girl - 4**: Pronunciation is not good [*sic*].
>
> **Zonoon**: I want you to read because your pronunciation is not good. I want to help you. No problem. We are not judging anybody. (friendly tone and gestures)

(Class observation – Zonoon)

In contrast, the tertiary EFL teachers in this study showed mixed performance in encouraging students to take risks and grow intellectually. The observation report found that all of them encouraged risk-taking. However, a few of them showed behavior that discouraged risk-taking.

Similarly, the study's tertiary EFL teachers' behavioral forms of risk-taking encouragement were sundry. They encouraged students' risk-taking by promoting student autonomy and persistence, encouraging critical dialogue, and supporting learner risk-taking. For example, the following excerpt from Borsha's class:

> **Girl - 4** (Group 1): Ma'am, will you form the group?
> **Borsha**: No, you will form the groups. You have freedom.
> **Girl - 3**: Ma'am, how many members [*sic*]?
> **Borsha**: Group of four. If I form the groups, there will be complaints or regrets that I could not do it with my friends. My choices match him/her. That's why I am giving you the freedom to form groups of four. (Classroom observation – Borsha)

On the contrary, some tertiary EFL teachers in this study discouraged risk-taking by discouraging divergence, limiting exploration and restricting choice. For example, the following excerpt from Rahin's class:

> **Girl - 3**: Both? Sir, you decide the topics.
> **Rahin**: Just talk about a part of the broad topic. But make sure that the two groups are not doing presentations on the same topic. For example, if one group is working on haptics, another group should not take this topic. (Classroom observation – Rahin)

Altogether, sub-theme 2 reflects a classroom culture in which Bangladeshi tertiary EFL teachers who participated in this study recognize the value of a safe and supportive classroom environment, which is crucial for developing critical thinking. Positive behaviors, such as welcoming gestures, inclusive instructional practices, empathetic feedback, and encouragement of risk-taking, indicate student-centered

instructional practices intended to promote critical thinking by building trust, confidence, and open-mindedness. However, negative behaviors, such as occasional unfavorable gestures and irregular risk-taking support, suggest that, though they generally intend to promote critical thinking, their instructional practices require improvement to effectively develop Bangladeshi undergraduate EFL learners' critical thinking.

4.2.2.3 Teaching Strategies for Promoting Critical Thinking

Classroom observations revealed diverse strategies used by Bangladeshi tertiary EFL teachers in this study to engage students in collaborative learning. These include the use of ICT tools and instructional materials, questioning strategies and strategies for cognitive engagement.

a. Use of ICT Tools and Instructional Materials

The data found that Bangladeshi tertiary EFL teachers used various technological and teaching materials in their classrooms. The analysis found that they used different types of ICT. At first, the observation revealed that they used various online communication platforms to communicate with students, facilitate group work, and share classroom activities. For instance, Rochester said, "I'll inform you through the WhatsApp group." Moreover, many of them used and encouraged the use of mobile devices, like personal laptops and mobile phones. Zonoon said, "Bring out your camera, mobile phone camera, and take a zoomed photo of these four (questions shown on the screen)." Likewise, Sony articulated:

> This is a very sensitive thing. One misarticulation or mispronunciation might create a very negative impact on you. Try to be focused on articulation or pronunciation. This particular thing is very easy to solve right now. With the very advancement of technology, you have mobile phones. Just search it and tap the speaker icon so that you just get the actual pronunciation. (Classroom observation – Sony)

In addition, they used and encouraged students to use video tutorials and digital files, like email attachments. For example, “The teacher (Zonoon) plays the audio from the email to check if it works.” Similarly, Sony said, “I recommend you search for two types of tutorials from YouTube, so that you can benefit from them. So, I'm assigning you the task today -preparing a self-introduction based on studying YouTube tutorials and seeing some other tutorials based on the norms and attitudes.

Most importantly, tertiary EFL teachers used visual display tools to share textbooks and teach content. For instance, “The teacher (Tahmina) opened the questions on the screen.” Likewise, “(Zonoon) opened the textbook *Intensive English I* on the screen.” However, no class was observed in which technology was not incorporated, either directly or indirectly.

Moreover, the findings indicate that although all of them used different types of interesting materials, four included unattractive materials. They used a variety of interesting materials, such as contextually relevant, affective, culturally integrated, and personal-narrative materials. Contextually relevant materials are related to learners’ speaking development, academic interviews, and academic PowerPoint presentations. In addition, affective learning materials included content related to students’ emotional and personal development, for example, reading about human brain science to explain emotions, emotional coping mechanisms, and healing trauma, and explaining academic presentation skills by integrating students’ everyday experiences. Moreover, culture-integrated content is tied to Bangladesh's national identity and cultural context. Finally, personal narratives include personal stories and personal travel narratives. For example, Sony uttered:

> So, these are the very patterns we usually find in different sorts of interviews. So, we are talking about different patterns of interviews, I mean different types of interviews in terms of pattern or in terms of style. Number one is structured interviews, number two is stress interviews and number three is depth interviews. Interestingly, these very three patterns work in our academia. In our academic interviews, teachers or interviewers blendedly select these three patterns at a time. (Classroom observation – Sony)

However, four tertiary EFL teachers used unattractive materials such as outdated and rigid procedural content, including repetitive instructional materials,

mechanical explanations of content, factual historical descriptions and mechanical listing of content. For example, Borsha uttered, “Let me give you the answer script and the question first.” Similarly, Zonoon said:

> It can be a horse cart, it can be a carriage and elephants. They have been informed about the movements of the fleeing sepoys. And finally organizing local volunteer core. What is a volunteer core? It is a group that helps to resist the sepoys. Do you understand? This is the work of the aristocratic people. Both the rebellions, the battle of Palashi and the 1857 sepoy movement, these two rebellions provide us with some messages. (Classroom observation – Zonoon)

Predominantly, sub-sub theme 1 suggests that Bangladeshi tertiary EFL teachers are increasingly recognizing the value of technology and engaging materials in the classroom for developing critical thinking. Their efforts to integrate ICT, contextually relevant content and affective materials indicate the transition from traditional teacher-centered instructional practices to student-centered, resource-driven approaches conducive to promoting critical thinking. Nonetheless, the infrequent use of backdated and unattractive materials points to a partial pedagogical shift.

b. Questioning Strategies in the Classrooms

Classroom observations revealed that Bangladeshi tertiary EFL teachers in this study used varied questioning strategies to achieve diverse teaching-learning goals. Classroom observations revealed that all of them used both open-ended and closed-ended questions. It also revealed that the tertiary EFL teachers in this study used open-ended questions with two broad purposes: promoting critical thinking and fostering engagement in Lower-Order Thinking (LOT). Promoting critical thinking involves fostering cognitive processes and engagement and metacognitive thinking, while promoting Lower-Order Thinking (LOT) involves information processing, learning verification, encouraging student participation, facilitating the learning process and assessment for providing support.

Tertiary EFL teachers in this study employed open-ended questions to stimulate and support cognitive processes, including problem-solving, higher-order thinking, and inferencing. The questions targeted specific functions, such as prompting solutions,

decision-making, reasoning, comparative reflection, inference, sequencing, and transfer. These findings suggest that the teachers deliberately used open-ended questions to promote learners' critical thinking. For instance,

> How can we imply that in an outline format? (Classroom observation – Borsha)
> What do you think this audio is about? (Classroom observation – Tahmina)

Moreover, five tertiary EFL teachers in this study used open-ended questions to foster students' cognitive engagement. Three tertiary EFL teachers in this study used open-ended questions to encourage learners' cognitive engagement, including the extraction of basic knowledge and the development of higher-order understanding. Basic knowledge extraction included concept clarification, vocabulary meaning, identification, procedural knowledge and overall comprehension. Some of their open-ended questions (Borsha, Sony, Tahmina, Zonoon) elicited Higher-Order Thinking (HOT), involving justification, evaluative thinking, knowledge of contextual resources, role understanding, and symbolic interpretation.

> What else is there in English for 'Bidroho'? (Classroom observation – Zonoon)
> What do you think is important for an interviewer? (Classroom observation – Sony)

Additionally, three tertiary EFL teachers (Rochester, Tahmina and Zonoon) in this study asked open-ended questions to motivate metacognitive thinking, such as metacognitive awareness and strategies, purpose and genre awareness and self-assessment among learners. Besides, it includes modeling strategic thinking, extracting practice preferences, deepening discussion and discussing ethics. For instance,

> What's the structure of a good presentation? (Classroom observation – Tahmina)
> What are some of the challenges in programming moral decisions into artificial intelligence? (Classroom observation – Rochester)

On the contrary, five of them used open-ended questions to engage students in some LOT. Some open-ended questions involved information processing, such as

extracting information and cognitive activation. Information extraction included recalling data and details, summarization, explanation and text comprehension. On the other hand, cognitive activation included activating schemata, referring to prior content, applying moral reasoning, considering outcomes, and identifying strategies (Borsha, Rahin, Rochester, Sony and Zonoon).

> How can we summarize a particular text, a written discourse? (Classroom observation – Sony)
> How does a springboard look? (Classroom observation – Zonoon)

Likewise, three tertiary EFL teachers in this study used open-ended questions to assess whether learning had occurred. Some open-ended questions were employed to verify learning, encompassing checking understanding, procedures and observations. Checking understanding covered delineating content, meaning, references, comprehension and validating information. Also, the procedure included clarifying the task, confirming the topic and methods, and checking factual knowledge.

> What are the people engaged in conversation called? (Classroom observation – Rahin)
> How many classes do we have? (Classroom observation – Rochester)

Similarly, five tertiary EFL teachers (Sony, Rahin, Rochester, Tahmina, and Zonoon) in this study prompted learners' participation by encouraging interaction and open expression through open-ended questions. Many open-ended questions invited students' interaction by inviting explanation, additions, questions, prompting continuation and participation. Along with encouraging student interaction, some tertiary EFL teachers fostered open expression by eliciting opinions and student feedback, and by prompting emotional reasoning and association.

> Anything else to add? (Classroom observation – Sony)
> How was the listening activity? (Classroom observation – Tahmina)

Similarly, three tertiary EFL teachers (Sony, Rahin, and Rochester) in this study asked open-ended questions that facilitated students' learning processes, covering task

guidance and using them as instructional strategies. Task guidance through open-ended questions included defining tasks, concepts and limits, introducing the topic, exploring the procedure, explaining purposes and providing context. Besides, four tertiary EFL teachers in this study used open-ended questions as instructional strategies, for example, to prompt action and method and to guide interpretation.

What are the boundaries? (Classroom observation – Rahin)
How are you going to find it? (Classroom observation – Rochester)

Even three tertiary EFL teachers (Rahin, Tahmina and Zonoon) in this study utilized open-ended questions as an assessment approach to provide learning support. For example, they assessed communication and learning barriers. Regarding communication assessment, they encouraged students to understand discourse, compare communication styles, analyze communication, and challenge stereotypes. Besides, one tertiary EFL teacher in this study used open-ended questions to identify learning barriers, such as listening difficulties and cognitive lapses.

Why did they say that Arabs are lazy? (Classroom observation – Rahin)
Why don't you remember? (Classroom observation – Zonoon)

In addition, tertiary EFL teachers in this study primarily used closed-ended questions for two reasons: to develop critical thinking and to exercise operational control. Most tertiary EFL teachers (Sony, Rahin, Rochester, Tahmina, and Zonoon) in this study asked closed-ended questions to promote learners' critical thinking by ensuring cognitive engagement, reflective thinking and upholding students' voices. While cognitive engagement comprises activating schemata, evoking memories, encouraging inference, elaboration, and evaluation, promoting reflective thinking involves stimulating metacognition and perspective-taking, exploring processes, and modeling teacher reflection. Moreover, their intention to uphold student voices includes inviting opinions, questions, and comparisons, and encouraging collaboration and ambition.

Have you faced it before? (Classroom observation – Sony)
Do I do anything scary in my class? (Classroom observation – Tahmina)

In contrast, operational control reasons include promoting active participation, maintaining classroom regulation, managing tasks, and extracting specific information. The details are presented in the following discussions. Four tertiary EFL teachers (Rochester, Sony, Tahmina, Zonoon) in this study implemented closed-ended questions to motivate students to participate in classroom discussions by demanding their responses, inquiring about their learning achievements and encouraging engagement. Response stimulation involves getting answers, enquiring about identity, and expressing expectations. In addition, learning inquiry comprises examining reading behavior, and strategy, and verifying communication. Finally, encouragement for student engagement includes motivation for participation.

> Is there anyone from the traditional religion? (Classroom observation – Rahin)
> Can you read? (Classroom observation – Zonoon)

Similarly, tertiary EFL teachers in this study utilized closed-ended questions to facilitate learning by assessing students' knowledge and providing comprehension support. Knowledge assessment includes verifying recall, specific knowledge, key concepts, understanding of context, and general understanding, and evaluating comprehension issues and perceptions of safety. Additionally, rendering comprehension support includes explaining meaning and information, identifying confusion, validating understanding and content, verifying information and developing vocabulary.

> Do you remember what we studied in the last class? (Classroom observation – Borsha)
> Is there anything which is related to why in the passage? (Classroom observation – Sony)

Moreover, four tertiary EFL teachers (Borsha, Rahin, Rochester, Tahmina) in this study used closed-ended questions as a tool for classroom regulation, which involves general management, procedural prompting, group monitoring, and ensuring classroom engagement. General management encompasses classroom administration, providing instruction, verifying attendance and presence, and familiarizing students with activities. In addition, procedural prompting involves bringing out processes and

lists, while group monitoring involves examining group dynamics and progress, and identifying conflicts regarding group formation and participation choices. Furthermore, confirming classroom engagement includes encouraging students' observation and confirming students' listening engagement.

> Can you have a look at it? (Classroom observation – Rochester)
> Don't you think that you have the opportunity to see? (Classroom observation – Tahmina)

Likewise, four tertiary EFL teachers in this study used closed-ended questions to manage tasks, such as monitoring and evaluating them. Task monitoring includes assessing task completion and sharing tasks using technology. Moreover, task evaluation includes exploring students' assessment preferences, evaluating the practicality of activities and considering examination issues.

> Mannat (Pseudonym), are you done? (Classroom observation – Rochester)
> Have you sent it to WhatsApp? (Classroom observation – Zonoon)

Additionally, they used closed-ended questions to gather information on students' personal details, preferences, and skill development. Personal information encompasses students' comfort levels, marital status, health status, and personal connections. Moreover, verifying preferences involves asking students for validation, assessing their inclination to be interviewed, and validating students' responses. Moreover, extracting information about skill development includes promoting technology for learning and confirming online participation and technological skills.

> Are you comfortable with this sort of communication or with this particular form of communication? (Classroom observation – Sony)
> Do we agree with the answer? (Classroom observation – Rochester)

Overall, sub-sub theme 2 shows that Bangladeshi tertiary EFL teachers in this study employed varied questioning strategies with mixed pedagogical intentions. Their open- and closed-ended questioning strategies demonstrate potential to promote critical thinking, while their overall questioning strategies are largely inclined to Lower-Order

Thinking (LOT) development, procedural guidance and encouraging participation. Collectively, these practices indicate that their questioning strategies are partially and rather weakly aligned with critical thinking teaching-learning goals.

c. Strategies for Cognitive Engagement

The data found that, though most of them (Borsha, Rahin, Rochester, and Zonoon) sometimes sought justification, all of them often accepted responses without questioning. Two of them sought justification through prompting interpretive reflections that included questioning inconsistencies and understanding and prompting preferences. For example,

> **Sony**: So, the question arises, what do you think is important for an interviewer? Weeding out the weakest or finding out the best?
> **Girl - 1**: Finding out the best.
> **Sony**: Finding out the best or weeding out the week?
> **Boy - 1**: Both
> **Boy - 3**: Both
> **Sony**: Would you select a particular one? (Classroom observation – Sony)

In addition, two of them sought justification through critical inquiry, for example, requesting explanation and probing reasons. As Tahmina's interaction with students:

> **Tahmina**: Does anybody have the big American dream? Nobody wants to go (Smiling)? That's really good.
> • ***Boy - 5*** *says that he wants to go (shy)*
> **Tahmina**: Oh, you want to go? Why do you want to go?
> **Boy - 5**: Lifestyle
> **Tahmina**: Why do you think the lifestyle there is different from here? In what sense?
> **Boy - 5**: Ma'am, lifestyle

Tahmina: Lifestyle is a generalized term. How do you think the lifestyle is different there? You want to answer, Nadeem (pseudonym)? Don't get scared, Rimon (Pseudonym). (Classroom observation – Tahmina)

In contrast, all the tertiary EFL teachers in this study regularly accepted students' responses without seeking justification. They either passively accepted the responses or affirmed the responses with minimal elaboration or without deep probing. Their passive acceptance involved accepting responses as they were or granting them as complete, accepting the definition and making no comment. For instance, Sony said, "Yes, an interview is basically a process of knowing and chatting and sharing." Additionally, the following interaction from Borsha's class:

Boy - 5: These were points. So, I have written differently.
Borsha: Okay, since done, it is done [*sic*]. (Classroom observation – Borsha)

Besides, three of them accepted students' responses without deep probing. They confirmed the correctness without seeking an explanation, agreeing with the response and praising the correct remembrance. For instance, the following excerpt from Sony's class:

Sony: Would you select a particular one?
Girl - 1: Yes, when we are interviewing someone, we are aiming to learn about them. So, it's both.
Sony: It's both. Yes, exactly. (Classroom observation – Sony)

Moreover, the study revealed that although all tertiary EFL teachers in this study modeled justification, a few of them (Borsha, Rahin, and Tahmna) had instances of failing to demonstrate justification. Four of them modeled justification through performing reasoning. This approach included modeling evidence-based reasoning, analysis, interpretation, comparison and metacognition. For example:

The car will only be thinking about the inputs. It has already had the input that it has to save the passengers. So, whatever happens in front, he will save the

passenger. Whether other people are getting injured, he doesn't care about this. So, the car has input but no brains. (Classroom observation – Rochester)

Likewise, three tertiary EFL teachers in this study modeled justification by engaging in various aspects of reasoned communication, including clarity, explanation, rationale, relevance, and evidence.

> This means you need to talk a lot. You need to show more examples and explanations or descriptions about the fact or topic you are talking about to prove it. In case of doing so, probably you need some references, examples, supporting details and your own perception and perception from others and maybe some more things. So, from time to time, you need to probe. (Classroom observation – Sony)

On the other hand, instead of modeling justification, three tertiary EFL teachers in this study focused on discussing presentation style, explaining non-verbal communication, describing content and clarifying the task.

> Suppose you are talking about a very silly topic. It may have no relevance. Whatever you have prepared, you knew that it wasn't good. Maybe you prepared just half an hour before coming to the class. But if you smile a lot, be it very ordinary, and say, do you know what I am going to talk about today [*sic*]? When you start like this, people will feel it's becoming something. (Classroom observation – Tahmina)

In addition, the data discovered that all of them facilitated students' reflection through various approaches. Three tertiary EFL teachers in this study encouraged students' metacognition. Borsha encouraged metacognitive thinking, saying:

> Jot down your thoughts first. Then mix up and modify them and then write down on the answer sheet. That will help. Each of you should think about each sentence you want to write. Then discuss with the group whether it is perfect or not. (Classroom observation - Borsha)

Moreover, students' metacognition was prompted as Sony said:

> Think about a situation. Therefore, in interview boards, I recommend that you not tell a lie. Be very fair and think about the various sequences or series I just mentioned. What do you do? Then, who do you read? Then tell me a particular character from that writer. So, these are very connected things. Are you getting the connection? The very questions, question number one, two, three and four are very connected. They are coming in a series and in a very connected way. (Classroom observation - Sony)

Similarly, three tertiary EFL teachers (Borsha, Sony and Tahmina) in this study facilitated reflection by encouraging self-assessment through self-analysis, identifying strengths and weaknesses, prompting self-evaluation and self-editing. As Borsha instructed, "Now, modify it, redraft it, and make it a little bit shorter. If you think this information is irrelevant, cut out or omit that. That's how you can make the size shorter."

Likewise, a few tertiary EFL teachers (Borsha and Zonoon) in this study employed schemata facilitation to encourage learners' reflection. Students' schemata were facilitated through scaffolding as Borsha stated:

> Do you remember what we studied in the last class? What did we study in the last class? In the previous couple of classes, we studied what [*sic*]? Paragraph writing, right? And we explored narrative, right? Narrative, process and classification, division. (Borsha)

Moreover, tertiary EFL teachers in this study prompted students to activate their schemas. In this connection, Rahin said:

> Haven't you watched *Big Bang Theory*? What do you say? The *Big Bang Theory* is like a comedy series. It's a theatrical sitcom. When actors say something, the audience laughs in the middle. The laughter is live. It's connected with the audience's laughter. When the audience laughs, it's a part of it. The laughter of the audience is a prompting gesture. (Rahin)

Also, four tertiary EFL teachers in this study were found to promote learners' reflection by guiding them to make meaning. One way to facilitate reflection was to guide elaboration and expansion in writing. In this connection, Borsha uttered, "You have to further develop these sentences into a paragraph. For example, you can think of the concluding sentence and how elaborate it is and add some information." A second approach was guiding text-based enquiry which is found in Sony's words:

> Make some other questions by using what so that we can get something from that text. So, are there any processes that might help in case of unlearning trauma? Is the text offering some processes or some techniques so that you can unlearn trauma? So, try to pick them out. So, what are the processes? We are just writing them down, cognitive reframing. Anything else? (Sony)

Furthermore, guided meaning-making was encouraged to find cultural connotations and image interpretations. This was observed when Tahmina said, "Does anybody think about green in terms of religious significance? Do you know that green is significant in our religion?" Moreover, Rochester asked, "What do you think of this image? It's a self-driven car. What about this self-driven car?"

Only one tertiary EFL teacher (Sony) in this study promoted student reflection by encouraging analytical engagement and content evaluation. Analytical engagement involved reflective reciprocal discussions, situational analysis and reflection on emotional experiences.

> Taking sufficient study about the viva board atmosphere to avoid unnecessary fear and rumors. This is also important about knowing the setting about the background, who are the people will be interviewing me and what their interest is and in what particular room I'll be interviewed, what the very setup is, or what are the very furniture I will face [*sic*]. These are the very necessary things. (Classroom observation – Sony)

On the contrary, several tertiary EFL teachers in this study restricted students' reflective thinking by dominating classroom interactions with immediate explanation, closed questions, recall facilitation and rapid corrections. For instance,

Zonoon: Can you tell us the meaning in Bangla? Try.

• ***Girl - 3*** *remained silent.*

Zonoon: Let us see. British East India Company, we all know the name. Ruled the Indian subcontinent for more than 200 years, we all know this. What does this mean? (explaining the meaning in Bengali). And then the continent was colonized by the British Empire. (Classroom observation – Zonoon)

In this connection, the data revealed that most tertiary EFL teachers in this study modeled reflection only occasionally, while they did not model reflection most of the time. Three tertiary EFL teachers in this study modeled reflection by engaging in metacognitive thinking aloud, including contrasting ideas, their own perspectives, and their teaching ability and knowledge. As Tahmina uttered, "I might be wrong. I might be really wrong. And nowadays, it's really easy to get misleading information rather than important information." In addition, several of them modeled reflection by performing task-oriented cognitive processing. They performed problem-solving in paragraph writing. For instance:

> Let's get back to these three types of paragraphs. So, what should I do if there is already mentioned topic sentence, supporting points and a concluding sentence [*sic*]? If there is already affirmation, then what will you do? You have to develop according to those particular sentences. You have to add more sentences when you write those particular topics. (Classroom Observation - Borsha)

Likewise, Sony explicitly demonstrated task execution as evident in the excerpt below:

> So, look at the question: summarize the passage utilizing not more than five sentences. So, these are the things basically at your hand to generate five grammatically complete sentences so that we can have a concentrated understanding of that passage. Now it becomes very easy. We can just start with the given passage about unlearning trauma first and then we can say that it is important to avoid disruption in our regular life. (Classroom observation – Sony)

In contrast, several tertiary EFL teachers in this study did not model reflection, focusing instead on vocabulary elicitation through rapid questioning, literal explanations, and informal examples. Moreover, they emphasized concept clarification through literal definitions, behavioral descriptions, and examples without guiding students to reflect on them. Furthermore, they modeled recall rather than reflection. For example,

> **Boy - 4**: On the contrary.
> **Zonoon**: What is the meaning of 'on the contrary'?
> **Boy - 4**: Biporite' (in opposite)
> **Zonoon**: What synonymous linking device is there for 'on the contrary'?
> **Girl -3:** On the other hand.
> **Zonoon**: On the other hand. Anything else?
> **Boy - 5**: Additional? (Classroom observation – Zonoon)

Accordingly, the observation data show that most tertiary EFL teachers in this study modeled both HOTs and LOTs, while a few modeled only LOTs. They modeled HOTs by engaging in analytical thinking, metacognition, reasoning, and cognitive strategies. However, a few of them also did not model HOTs as they delivered lectures. A few teachers performed analytical thinking to model HOTs. This involves modeling analytical explanation, and conceptual, comparative and process analysis. The findings imply that such practices are only occasional and limited to teachers with a deeper interest. As Rahin lectured:

> But when you go to different other faculties, for example, BBA, like IBA in JU, IBA in DU, marketing, or other faculties, you will see that their appearance is quite different than the people who are studying at the Arts faculty or the Science faculty. Their appearance is different. It is making an impression, and it is communicating something, but non-verbally. (Classroom observation – Rahin)

Similarly, a couple of tertiary EFL teachers (Sony and Tahmina) in this study demonstrated HOTs by performing aloud metacognition. For example, metacognitive reasoning has been performed by Sony, as he said:

> Think about the thing that how the questions are coming. The questions are becoming reflected in your answers. If you did not say you love to read, there would not be the question who do you like to read. If you did not say Humayun Ahmed, then they would ask ton tell about a character of Humayun Ahmed. If you said you love sports, then the question would be related to sports. Then, maybe the next question would be who is your favorite player? …That means the question is coming from the previous answer you made. So, the question is reflected from your answers. Therefore, you also have some power or some capability to dominate the interview board.(Classroom observation – Sony)

Likewise, a few tertiary EFL teachers in this study employed modeling moral, ethical and evidence-based reasoning as ways to perform HOTs. For example, Rochester stated:

> It’s saying what's the main question of the passage that encourages readers to think about?. So, how to make ethical decisions in the development of AI? Especially in life-or-death situations, of course. If the situation is like this that the car has to decide whether to save the owner, that is you, who is inside the car, or the others who are outside the car and who are not the owners [*sic*]. So, you have to decide that way. (Classroom observation – Rochester)

Moreover, three tertiary EFL teachers in this study performed HOTs when modeling cognitive strategies, such as interpretation, evaluation, and application. They performed cognitive strategies, such as interpretation, evaluation and application of questions as a critical thinking teaching tool.

> Because it's a life-threatening situation for you. You are risking your life if the car goes wrong. So, if anything happens, you'll have some accidents. So, how to program self-driving cars? So, if the programming isn't good, the ending wouldn't be good as well. Interesting [*sic*]. (Classroom observation – Rochester)

Furthermore, the findings show that, instead of modeling HOTs, six tertiary EFL teachers in this study focused on forms, LOT performances, and procedural thinking. Their focus on forms included the structures of writing and rigid

pronunciation instructions, while LOT's performance involved factual descriptions and basic guidance. In addition, modeling procedural thinking comprised the explanation of performance strategies and prompting HOTs without demonstration.

> **Boy - 5** (Group 3): Miss, what is this? Can I write the whole thing?
> **Borsha**: No, same to same. You can elaborate on it and add more information, but you have to write the same sentence. (Classroom observation – Borsha)

Altogether, sub-sub-theme 3 indicates that Bangladeshi tertiary EFL teachers in this study inconsistently sought justifications, modeled reflections, and facilitated students' reflective thinking. Some tertiary EFL teachers in this study demonstrated HOTs and reflectivity, and demanded student justification, while several accepted students' responses without probing or highlighting LOT answers. In short, the findings suggest that tertiary EFL teachers' critical thinking practices are unplanned, inadequate, and inappropriately aligned with the critical thinking pedagogy.

4.2.2.4 Teaching Instructions for Developing Critical Thinking

The classroom observations disclosed different facets of Bangladeshi tertiary EFL teachers' instructional practices concerning the development of learners' critical thinking. Sub-theme 4 covers instructional features, including clear and responsive instructions, instructional practices to promote problem-solving, use of project-based and collaborative activities, and interactive practices for promoting students' voices.

a. Clarity and Responsiveness in Instructions

The clarity of their instructions was observed during task clarification, content framework and classroom organization. Most tertiary EFL teachers in this study clearly instructed as they explained the tasks, using explicit explanations that included relevant examples, visual references, and adequate details. In addition, they provided structured guidance with a specific timeline and details. Moreover, their instructions on task performance involved clear order explanations containing specific guidance, advanced notifications and conciseness. For instance, Zonoon guided, saying, "This is in the

glossary (scrolling the screen). You will see the difficult things from here. Now, let's see. Everyone will do it together because your next class test is on this."

Likewise, the study discovered that four tertiary EFL teachers in this study maintained clarity in content framework-related instructions. Tertiary EFL teachers in this study provided clear guidance on writing and topic management. For writing, Borsha provided direct guidance while saying, "First of all, don't make the gaps. Please fulfill it. One paragraph, remember. The paragraph will be written in one paragraph. Please make sure that [*sic*]." She also clearly stated specific expectations, as in, "Try to use more cohesive words, transitional expressions that we discussed in class." While instructing on topic management, Sony set boundaries as he said:

> We may have some other sort of interviews, and whatever the types are, they are based on purpose. But basically, you guys right now are requested to focus on academic interviews and we'll be discussing the very question patterns and types you usually face in your academic interviews. So, let's discuss the very patterns of interviews. (Classroom observation – Sony)

In addition, tertiary EFL teachers in this study provided the students with learning, well-being and classroom management support. Four tertiary EFL teachers in this study provided individual learning support for the latecomers, independent practice, and decision-making. Moreover, they provided collective learning support to facilitate group work completion and form groups. Additionally, they extended vocabulary support whenever students needed.

> **Boy - 3**: What is the meaning of 'Nirbhulota' (accuracy) (smiling)?
> **Borsha**: Trying to remember.
> **Boy - 3**: Can I write 'correct'?
> **Borsha**: Correct (not sure).
> **Boy - 5**: Can it be 'impeccable'?
> **Borsha**: What do you want to use? Tell me the sentence.
> **Boy - 3**: That means speed and …… are required to play the game.
> **Borsha**: Motion and exact. Accurate... accuracy (smiling). (Classroom observation – Borsha)

Similarly, two tertiary EFL teachers in this study provided emotional support to reduce students' anxiety and increase learning outcomes. They provided learners' well-being support by addressing their emotional and accessibility needs during their instructions. Emotional support was ensured through efforts to reduce learners' anxiety. In contrast, accessibility support was ensured by accommodating students' seating and listening needs, providing extra time for preparation, and setting a schedule that considered students' preferences. For instance, Rahin enquired, "Can you hear me on the last bench?

Collectively, sub-sub theme 1 demonstrates that Bangladeshi tertiary EFL teachers in this study delivered clear, structured and easy-to-follow instructions. They managed content, organized classroom activities, and offered students help with completing tasks. Their support involved individualized guidance, including cognitive and emotional assistance. However, their supportive instructional practices emphasized students' LOT performances and did not enforce analysis, evaluation and creation. Therefore, these findings indicate a pedagogical system that supports task completion rather than cultivating critical thinking.

b. Instructional Practices to Promote Problem-Solving

The data found that although most tertiary EFL teachers in this study stimulated problem-solving, many also suppressed students' problem-solving abilities through their instructions. Thus, the findings involve cognitive engagement, reasoning development and capacity building to manage learning challenges. A few tertiary EFL teachers (Borsha and Zonoon) in this study stimulated students' problem-solving initiative by provoking them to engage in cognitive activities. In this context, while Zonoon instigated inferencing, Borsha promoted concept generation through practice. Zonoon stated, "Treachery. What is the meaning of treachery? Can be guessed [*sic*]." On the contrary, Borsha interacted:

> **Borsha**: Think. Practice more at home. You have to practice a lot. Then, you will be able to generate ideas.
> **Boy - 1**: When there is no task, ideas keep coming.
> **Borsha**: When you don't have the task, but get ideas, then write them down. Write down those particular things. The more you practice at home, the better

it gets. Otherwise, in the exam, you won't be able to generate ideas. So, take the textbook and practice at home more.

Boy - 3: I don't find any (smiling)

Borsha: Look at the activities given in the textbook. That will help you. (Classroom observation – Borsha)

Similarly, a few tertiary EFL teachers (Rochester and Sony) in this study fostered problem-solving skills by demanding reasoned thinking using real-world dilemmas, posing moral challenges and sharing strategies to cope with unexpected challenges. These outcomes indicate that tertiary EFL teachers in this study aspire to promote learners' problem-solving skills not only as an academic requirement but also as a life skill.

Rochester: The question was, what are some of the challenges in programming moral decisions into artificial intelligence? We can give the command to the car. But can morality be included as part of the command? Can morality be installed in the car? What do you think?

Girl - 1: It cannot think in multiple dimensions.

Rochester: Yes, our brain can think in multiple dimensions, of course.

Girl - 1: It cannot handle all the input at a time. (Classroom observation – Rochester)

In this regard, a couple of tertiary EFL educators promoted learners' problem-solving by building their capacity to handle challenges, such as inappropriate interview questions, difficulties with listening tests, and presentation anxiety. By building learners' emotional and strategic strengths, these tertiary EFL teachers not only developed their academic problem-solving abilities but also their skills to tackle real-life challenges.

Maybe you are on an interview board and I am the interviewer and out of nowhere, I'm just asking you, do you have a boyfriend? So, this question shouldn't come up, since this is a very formal interview session, but well and that it is none of my business to know whether you have a boyfriend or not. But I'm asking you... This is a very personal sort of question, and I am probably

intending to know how effectively you can manage this very personal question. If you just say that I feel this is too personal. Would you mind if I don't answer it? So, you are just throwing back a very polite question and probably you will win the situation. (Classroom observation – Sony)

However, a few tertiary EFL teachers in this study encouraged learners to engage in problem-solving activities by promoting learners' autonomy. While Rahin encouraged problem-solving through autonomous decision-making, Borsha did so by guiding individual reflection. Their quotations are provided respectively:

Girl - 3: Sir, will you select the topics?
Rahin: No, I will not. You will select the topic. This is called communication. Why am I teaching communication? You have to communicate professionally. (Classroom observation – Rahin)

Write your thoughts individually, which will help you. When you are writing a paragraph, first jot down the thoughts that are coming into your brain, in your memory. The words, the thoughts, and the points you want to add in those particular topics, write them individually. That will help you to develop the paragraph or the sentence further. (Classroom observation – Borsha)

In addition to this, one tertiary EFL teachers in this study stimulated problem-solving by individualizing group work as found in the excerpt below:

Borsha: What about the headline? It's a topic. You have to give the headline.
Boy - 1: Ma'am, should it be written by all?
Borsha: It is better if written by one. (Classroom observation – Borsha)

On the other hand, a few tertiary EFL teachers in this study discouraged students' problem-solving engagement during instruction. One of them emphasized rigid structures rather than open exploration while saying, "First of all, we have to maintain this outline (marking the outline on the whiteboard) and have to develop the paragraph like that. So, paragraph development will be like that. You have to follow

the outline. (Borsha)". Another teacher prescribed that students reproduce the text's content as evident in the given quote:

> Your duty is to pick them out in a proper sense. Finally, you can say that the writer finishes it or better recaps it by saying that the process is not only erasing our past but rather re-managing or re-systemizing our coming days in the future. So, these are the very four or five lines you are supposed to generate. (Classroom Observation - Sony)

Additionally, a few of them practiced a teacher-led vocabulary-building session as apparent in the given interaction:

> **Zonoon**: However, that picture is not good. The landed aristocracy was decidedly opposed to the sepoys (reading out from the computer screen). What does Landed aristocracy mean? What is aristocracy?
> • *Students remained silent.*
> **Zonoon**: Aristocracy means poshness. What is poshness? Rich. What is rich?
> • *An unidentified boy said 'borolok' (wealthy).*
> **Zonoon**: What is wealthy? 'Bilashita' (luxury), money-owner. That means people who have land and are elegant. They were decidedly totally opposed to this sepoy revolution. Some of them rendered logistic support to the company…..company means the British East India Company authorities by supplying carts (reading out from the screen). What are carts? Carriages and elephants. ……in forming the movement of the fleeing sepoys and finally organizing local volunteer corps C-O-R-P-S, the pronunciation is corps, to resist the sepoys [*sic*]. So, what did they do? They rendered logistic support. (Classroom observation – Zonoon)

On the whole, sub-sub-theme 2 evinces that in this study, Bangladeshi tertiary EFL teachers' irregular instructional practices for advancing the learners' problem-solving. On the one hand, some of them facilitated problem-solving by integrating real-world dilemmas and building learners' strategic and emotional abilities. On the other hand, some tertiary EFL teachers in this study restricted problem-solving opportunities by implementing rigid structures, reproducing content and providing explanations.

Thus, the results reflect occasional instructional practices that promote problem-solving and reinforce teacher-centered practices that restrain sustainable critical thinking development.

c. Use of Project-based and Collaborative Activities

The analysis indicates that only a few tertiary EFL teachers in this study integrated project-based activities, while others did not. One way in which tertiary EFL teachers in this study incorporated project-based learning in class was by engaging students in collaborative decision-making. These findings are verified by the excerpt from Rochester's class given below:

> Imagine you are in charge of programming a self-driving car. You are like from the CSE department. You are programming a car. So, what moral framework would you choose to guide the car's decisions in case of an emergency? Which programming would you install? What command will install, regarding whether it will save only the owner or the people outside? Which moral point will you give to your car? And why? There are two things you have to talk about. Which programming would you install and why?So, talk among yourselves and come up with your answers. (Classroom observation – Rochester)

Another way was assigning a group poster presentation as found in the following quote from Rahin:

> I will give you a presentation on non-verbal communication. You have to understand this very well. You have to do these things. You have to make a poster presentation. I want a poster presentation. In the poster presentation, you have to make me understand how or what. You have to describe the poster. (Classroom observation – Rahin)

However, the majority of tertiary EFL teachers (Rochester, Sony, Tahmina and Zonoon) in this study used non-project-based activities in their classes. A few of them used traditional activities, such as vocabulary-building and true-false exercises. For instance, the given excerpt from Zonoon's class:

Zonoon: What are other synonymous terms for treachery?

Boy - 2: Betrayal.

Zonoon: Good. Anything else?

Boy - 6: Conspiracy. (Classroom observation – Zonoon)

Similarly, two tertiary EFL teachers in this study prioritized individual activities over collaborative ones, thereby undermining opportunities to integrate project-based learning. Regarding this, Zonoon assigned individual written homework as he uttered, "So, write down page number 21, WH questions. These are your home tasks, homework. You do it at home, write down, do some rough notes and come back next class, so that you know how you should write."

In a like manner, individual activities were practiced that curbed the scope for project-based learning. This was identified in Rochester's words: "There are some MCQ questions below this. Can you have a look at it? So, go to the next part. This is the individual task. You have to write the answer on your own. We have to search for answers in the passage."

Even project-based learning was absent in some classes, which were mostly lecture-based, limiting collaborative work. This is found in Sony's quote, "Well, so we talked about the very definition, very types and patterns of questions, we talked about some situations that usually arise in interview boards."

Furthermore, four tertiary EFL teachers in this study encouraged diverse perspectives by fostering students' voices and emphasizing multiple perspectives. They nurtured students' voices by encouraging peer idea sharing through interaction, different idea sharing, and inviting students' contributions and expressions of personal choice. In addition, tertiary EFL teachers in this study focused on multiple perspectives by seeking students' multifaceted viewpoints, even when these differed from the teachers' and their own reflective opinions.

Tahmina: Now, do you want an arranged marriage or a love marriage?

Boy - 13: Love marriage.

Tahmina: Okay. Muktadir (pseudonym) wants a love marriage. Who else wants a love marriage? (Classroom observation – Tahmina)

On the contrary, a few tertiary EFL teachers in this study showed indifference toward students' varied perspectives. Students' diverse standpoints were overlooked by imposing rigid structures as found in Borsha's class:

> Just in case, if there are any exceptions, when you write a paragraph in this particular or general topics, you have to maintain or remember that there is an outline, and I will write according to that outline. My paragraph development will be like that [*sic*]. (Classroom observation – Borsha)

Likewise, they were deliberately guided to produce the expected answers. This is evident in the given excerpt:

> **Zonoon**: They fought two battles? What are the names of the two battles, you think?
> **Girl - 2**: Palashi.
> **Zonoon**: One is Palashi and what is the other one? Sepoy. (Classroom observation – Zonoon)

Additionally, sometimes, they were pressured to generate responses expected by the teachers. The following interaction exemplifies these findings:

> **Rahin**: Five types of gestures, postures, I told you about it. What are the five types of kinesthetics? Tell me [*sic*].
> **Girl - 3**: Gesture, posture (Unsure tone)
> **Rahin**: What else? I have already told you about gestures, posture. What are the remaining three? (Classroom observation – Rahin)

Altogether, sub-sub-theme 3 presents an insufficiency of project-based and collaborative activities in Bangladeshi tertiary EFL classes. Only a few tertiary EFL teachers in this study incorporated project-based and collaborative activities to promote problem-solving and diverse viewpoints. At the same time, the majority relied on traditional, individual, and teacher-centered lectures and activities. The latter stressed rigid structures and expected responses. Therefore, the findings reflect their inconsistent implementation of learning activities, which limit opportunities to engage

learners in social learning, thereby restricting the development of their problem-solving and HOTs.

d. Interactive Practices for Promoting Students' Voices

Sub-sub-theme 4 involves allowing students' opinions and responses to students' questions. The data indicate that although all of them allowed students' opinions, four of them sometimes restricted them. They allowed students' opinions by acknowledging students' contributions, encouraging active participation, promoting students' expressions, respecting student diversity and allowing students to build on their contributions. For example:

> **Sony**: Gesture and posture, do you know these things? What is a gesture and what is posture?
> **Girl - 2**: Yes, sir.
> **Girl - 1**: Movement of hands.
> **Sony**: Gesture is the movement of the hand or body parts. Yes, and posture?
> **Girl - 5**: Posture is how you sit or watch.
> **Sony**: It's more related to body positioning, like where you stand, how you stand. These are the things and appearance.
> **Girl - 1**: It's more about your dress code, like if you are told to dress in a certain way and you dress in the complete opposite way, then that's a mess up.
> **Sony**: Dress code is, of course, included in appearance, but appearance is not only the dress code; rather, sometimes your attitude as well, because in what particular way or by utilizing what particular approach or attitude you are offering, your explanations are also important. (Classroom observation - Sony)

However, three of the tertiary EFL teachers in this study blocked students' opportunity to formulate opinions as they provided the answers before students could respond. For instance, Rahin said, "What are the people engaged in conversation called? I discussed it before. Can anyone tell me? I used a term for that. Now, you are the students and I am the teacher. There is a conversation going on between us."

The observation data suggest that while most tertiary EFL teachers in this study responded positively, a few also showed negativity. Findings show that the majority of

tertiary EFL teachers in this study accepted students' questions positively by clear, supportive and pleasant interactions. Their clear responses to students' questions include precision and conciseness. In addition, the supportive response comprised their patience, particularity and adequate explanation. Moreover, warm responses include friendly reactions and humorous assurance. These findings indicate that teachers respond to students' questions with clarity, comprehensiveness, and warmth, creating a safe and inclusive classroom environment where students can confidently question, reflect, and engage in critical thinking.

In contrast, a few teachers responded unfavorably to students' questions through sarcasm, dismissal and rejection. For instance,

> **Boy - 5**: Moreover?
> **Zonoon**: All are the same. Moreover and on the contrary, they are not the same. But, however, these are. You have to know these. Next, read. (Classroom observation – Zonoon)

Thus, sub-sub-theme 4 underscores a limited alignment between instructional practices and critical thinking objectives. Teachers' allowance of students' opinions, encouragement of active participation, promotion of diverse perspectives, and responsiveness to students' questions create opportunities for students' reflection, reasoning, and idea generation, thereby developing HOTs. However, restricting students' opinions, expecting predetermined answers, and negative reactions to students' questions limit autonomy and opportunities for critical dialogue.

4.2.2.5 Practices of Student-Centeredness

The observation data unveiled that only one teacher practiced student-centeredness, as identified in Zonoon's classroom: "The students worked in groups throughout the class. They were discussing the task among themselves. The teacher was giving necessary instructions in between."

In contrast, results demonstrated that tertiary EFL teachers in this study spoke more in the majority of classes through teacher-dominated talk: maximum teacher talk time and extended teacher monologues. Moreover, classroom interactions were mostly

teacher-directed, as teachers guided the Q&A sessions and vocabulary and prompted students' responses. For instance,

> **Tahmina**: What else does this say about green? Did you listen to it? The years, the terms. Did you hear anything? Tell me one or two terms.
> **Boy - 10**: Green thorn.
> **Tahmina**: Green thorn (Writing the term on the board). What else did you hear?
> **Girl - 1**: Long ago
> **Tahmina**: 15th century? Okay, maybe some century?
> **Girl - 1**: Ma'am, 15th century.
> **Tahmina**: 15th (Writing on the board)
> **Boy - 3**: Youth
> **Tahmina**: Symbol of youth (Writing on the board). Did you hear anything else?
> **Boy - 5**: 1000 years.
> **Tahmina**: 1000 years (Writing on the board).

The results of sub-theme 5 suggest a partial alignment between Bangladeshi tertiary EFL teachers' instructional practices and critical thinking goals. Students' opportunity to collaborate with peers underscores the potential to develop critical thinking. However, limited implementation of such instructional practices and the dominance of teacher talk reflect a substantial gap between critical thinking objectives and classroom teaching practices, indicating the need to create a culture that fosters student-centeredness.

4.2.2.6 Providing Constructive Feedback

Sub-theme 6 indicates that most tertiary EFL teachers in this study employed constructivist feedback, while some employed non-constructivist feedback. According to the findings, they used three types of constructivist feedback: formative, motivational, and cognitive engagement.

Findings demonstrated that tertiary EFL teachers' formative feedback fell into three categories: guidance-focused, scaffolding, and developmental feedback. Guidance-focused feedback involves specific and practical writing guidance, clear and focused guidance on writing development and clear writing instructions, while

scaffolding feedback includes gentle correction, redirecting negative responses to positive ones and specific corrective feedback. Moreover, developmental feedback includes detailed explanations and clarifying assessment criteria. For example,

> **Boy - 4**: Ma'am, can you please repeat the tips?
> **Tahmina**: Oh, the context? Remember, if there is a year, the year can be changed. If there is a name of a place or a person, that can be changed. If there is a number, instead of 4 other men, they can say 10 other men. If there is a number, if there is a specific key term, what is a specific key term? For example, instead of saying experimented with mechanical things, it said as manual things. So, these are the key terms. (Classroom observation – Tahmina)

Likewise, their motivational feedback falls into two categories: positive reinforcement and affective support. While the first category includes positive reinforcement in feedback, praising students' efforts, encouragement and reassuring them despite incorrect responses, promoting understanding and affirmation and reassuring performance feedback, affective support feedback involves reducing anxiety while giving feedback and encouraging student confidence. For instance, Zonoon uttered, "She did well. Whether you have a sore throat or not, you must show your courage."

Data analysis showed that in this study, tertiary EFL teachers' cognitive engagement feedback involves three types: guiding through questioning, activating prior knowledge, and clarifying complex topics.

> No. Proximity means distance. Distance means how much space there is. I told you about spatio-temporality. Do you remember? Space and time. Spatio means space. Temporality means time. The use of time. So, we will see the spatio-temporality of communication. Proxemics will talk about the space in communication and chronemics will talk about the use of time in communication. This is called spatio-temporality. (Classroom observation – Rahin)

In contrast, a few of them provided non-constructive feedback. For instance, the dismissive criticism by Sony, "But what you guys did was just copy some parts and

juxtapose them. You generated the summary, which is not actually the summarization… You didn't do that much good, I mean that is not satisfactory as you did in your exam script," and the non-informative one from Zonoon, "So, fine."

Overall, sub-theme 6 indicates that in this study, Bangladeshi tertiary EFL teachers' feedback practices align partially and to a lesser extent with critical thinking objectives. While their constructive feedback, such as formative, motivational, and cognitive engagement feedback, promotes learners' reasoning, reflection, autonomous learning, and open-mindedness, non-constructivist feedback highlights inconsistent and unsupportive feedback that hinders the development of critical thinking.

4.2.2.7 Promoting Collaborative Thinking

Sub-theme 7 shows that while most tertiary EFL teachers in this study encouraged collaborative thinking, a few did not. Analysis found that the teachers encouraged collaborative thinking by organizing group work, encouraging participation and promoting knowledge construction. While group organization includes coordinating group work and group formation and initiating group work, encouraging participation involves coordinating group contribution and encouraging group inclusion. In addition, promoting knowledge co-construction consists of allowing students to build on peer ideas, encouraging peer knowledge sharing and promoting peer feedback.

> **Boy - 1**: As she said, "Interview is not for getting a certificate", but if I interview a celebrity, I can get to know about their lifestyle [*sic*]. (Classroom observation – Sony)

In contrast, three tertiary EFL teachers in this study constrained collaborative thinking by emphasizing individual work, restricting peer interaction and limiting social learning activities. They emphasized individual works by focusing on individual reading activities, encouraging silent individual reflection, and restricting peer interaction through selective volunteering and participation based on the teacher's choice. Moreover, they limited social learning activities by controlling student participation and movement and vocabulary discussion and using teacher-centered explanations of concepts. For instance, Rochester said:

> Let's read the passage. You can read it from here, or you can read it from your mobile as well. You have it on your mobiles. You have 2 minutes, 2 minutes, and 1 minute. Total 5 minutes to read the whole passage. Go through it, and then we have to go for the tasks. (Classroom observation – Rochester)

Findings of sub-theme 7 reveal a partial alignment between Bangladeshi tertiary EFL teachers' instructional practices in this study and critical thinking goals. By fostering group work, peer interaction, and knowledge co-construction, the teachers facilitated learners' critical thinking skills and dispositions. On the other hand, inconsistencies in such practices and the irregular presence of restrictive practices in collaborative activities indicate that critical thinking objectives are not fully realized through teaching practices.

4.3 Findings on RQ 2: What Is the Level of Knowledge of Critical Thinking among Bangladeshi Tertiary EFL Teachers?

This section presents the findings from the qualitative phase of the study which aimed to explore Bangladeshi tertiary EFL teachers' knowledge of critical thinking (*RQ 2: What is the level of knowledge of critical thinking among Bangladeshi tertiary EFL teachers?*). The data were gathered from semi-structured interviews with 12 tertiary EFL teachers. The analysis resulted in two main overarching themes which are presented below in Figure 4.2:

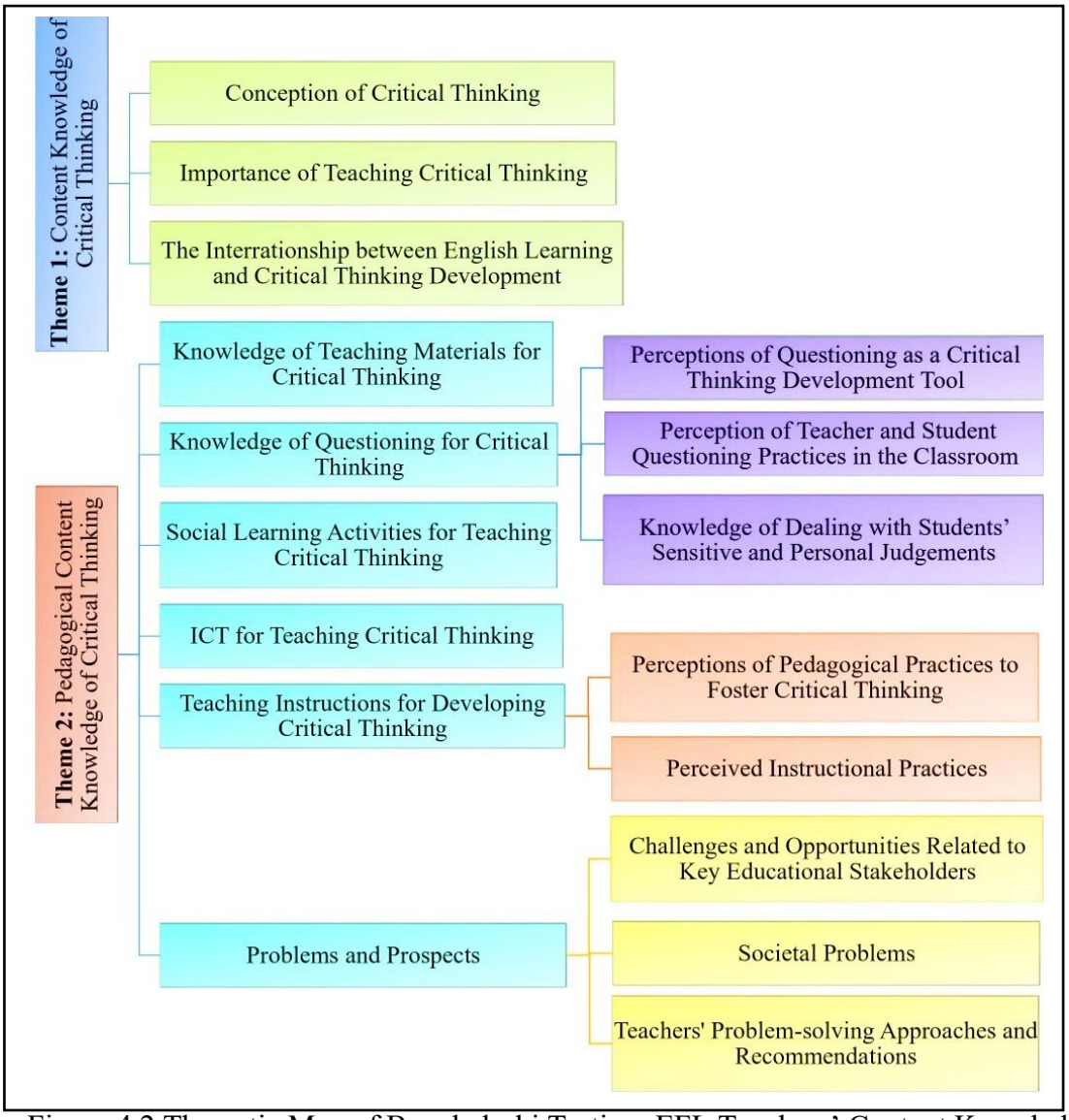

Figure 4.2 Thematic Map of Bangladeshi Tertiary EFL Teachers' Content Knowledge and Pedagogical Content Knowledge of Critical Thinking

According to Figure 4.2, the findings of semi-structured interviews consist of two major themes: Content Knowledge (CK) of critical thinking and Pedagogical Content Knowledge (PCK) of critical thinking. Theme 1 has three sub-themes. Additionally, Theme 2 has six sub-themes. Among the sub-themes of Theme 2, sub-theme 2, sub-theme 5 and sub-theme 6 have several sub-sub-themes.

4.3.1 Theme 1: Content Knowledge of Critical Thinking

Tertiary EFL teachers' understanding of critical thinking in this study reflects their content knowledge. Content Knowledge (CK) refers to their informed

understanding of critical thinking that aligns with established conceptions, as well as their contextual understanding founded in evaluating teaching and learning critical thinking in these contexts.

Tertiary EFL teachers in this study perceived critical thinking as a process that enables learners to analyze, evaluate, and reflect, ultimately leading to a meaningful understanding beyond mere memorization. They stressed that this ability would help learners become more creative and non-judgmental, and to pursue the truth. In this study, tertiary EFL teachers' educational and contextual experiences shaped their understanding of critical thinking, identifying it as a pluralistic, in-depth thinking rooted at the core of global change. Additionally, their experiences and contextual understanding resonated with the idea that critical thinking is a basic requirement for 21st-century lives that involve decision-making and problem-solving. They highlighted the importance of critical thinking in the personal, social, national, and global spheres, revolving around the concept of the knowledge economy.

The findings depict their comprehensive yet uneven content knowledge of critical thinking. Their understandings involve skills, dispositions and personal and contextual views that vary across individuals, indicating the richness and fragmentation of their content knowledge. This theme has three sub-themes: the conception of critical thinking, the importance of teaching critical thinking, and the interrelationship between English learning and the development of critical thinking.

4.3.1.1 Conception of Critical Thinking

In this study, tertiary EFL teachers' conceptions of critical thinking comprise two dimensions: theoretical perspectives grounded in established frameworks and personal interpretations based on their professional experiences and contextual and educational learning. Altogether, these perceptions presented their awareness of the multifaceted aspects of critical thinking that extend the customized views of critical thinking in the EFL domain.

Theoretically, seven of the twelve tertiary EFL teachers in this study showed their familiarity with Bloom's taxonomy, identifying critical thinking as HOTs like analyzing, evaluating and synthesizing and HOTs in the established notions, such as decision-making, problem-solving, reasoning and creativity. Farhan, an experienced private university teacher, opined, "To me, someone possesses critical thinking if that

person can analyze something, interpret something, and then make a judgment based on his or her analysis and interpretation." Rahin, a relatively new teacher at a public university, indicated, "In my view, critical thinking involves different abilities to analyze, evaluate, and synthesize information logically and reflectively."

Zonoon, a veteran teacher, explained, "Critical thinking is fully critical and creative….it's a matter of creativity…Also, it helps in decision-making….And it's a problem-solving strategy….Critical thinking is not general thinking. It's thinking beyond the simple answer. It involves reflection. It involves other clues." This statement indicates that critical thinking is understood as a higher-order cognitive process. It also reflects that the teacher's concept of critical thinking is shaped by an academic framework and accumulated professional experiences, which contribute to a nuanced understanding of critical thinking.

On the other hand, one tertiary EFL teacher (Sumaiya) in this study perceived critical thinking as a disposition rather than a skill, emphasizing qualities such as truth-seeking, open-mindedness, and fairness. Sumaiya, a private university teacher with more than 13 years of experience, opined,

> If a person is critical in his or her thinking, then they can find the truth of that particular situation or particular fact. So, to find the truth about a particular situation or fact and have a proper opinion about it, a person should know about critical thinking.

This shows that critical thinking is considered an attitude rather than a set of skills. Such views can facilitate a comprehensive approach to integrating critical thinking by encouraging educators to foster learners' critical thinking skills as well as dispositions that will enhance the effectiveness of critical thinking.

These tertiary EFL teachers' personal interpretations of critical thinking extend to their socio-economic, global, and pluralistic perspectives, viewing critical thinking as a 21st-century skill and multi-perspective, deep, and independent thinking rather than mono-perspective, surface-level, and teacher-dependent thinking. For these tertiary EFL teachers in this study, critical thinking extends beyond cognitive processing, requiring an attitude of inquiry that involves questioning, reflection, ideation and evaluation before concluding and even challenging traditional views. In this regard,

Munalisa, a public university teacher, stated, “Critical thinking is one of those 21st-century skills that students are supposed to have.”

> “It empowers learners to question different forms of hypotheses and assumptions, which might include multiple levels of pluralism. Also, it considers multiple perspectives and helps us to solve problems independently and creatively.” (Rahin)

This suggests a shift in the foundation of education, where knowledge is viewed as dynamic and interpretive rather than fixed and authoritative. This understanding helps promote a learner-centered and inquiry-based teaching practice that encourages meaning co-construction and active engagement with ideas rather than simple reception of information.

Tahmina, a teacher with less than two years of experience, put it, “What I personally understand is that for every human being, there are levels of thinking. …. So, critical thinking is probably the concept where you put a lot of thought into depth.” This points to a broader conceptualization of critical thinking, indicating the development of it as a gradual and progressive process. This understanding also reflects the teacher’s awareness of the nature of critical thinking, which can help make pedagogical decisions in designing learning activities, with a scaffolded approach that supports learners to move gradually toward more complex thinking. Borsha pointed out, “Critical thinking is analyzing something, rather than just following those particular thoughts, ideas, or information.” This shows the teacher’s awareness of HOTs that are associated with critical thinking, reflecting a CK that has been shaped by experiences and ongoing professional learning.

These perceptions reveal that tertiary EFL teachers in this study have a strong awareness of the theoretical underpinnings and contextual remodeling of critical thinking, underscoring their views of critical thinking as a cognitive process and an adaptable, culturally rooted mindset. However, their disconnection among their views on skills, dispositions and contextuality indicates their underdeveloped CK of critical thinking at the individual level. Due to the introduction of Outcome-Based Education and the global push to develop critical thinking among university students, Bangladeshi tertiary EFL teachers in this study are developing notions of skills and dispositions, but

in an unsystematic and fragmented way, which requires systematic professional development initiatives to ensure complete CK for all tertiary EFL teachers.

4.3.1.2 Importance of Teaching Critical Thinking

In this study, tertiary EFL teachers' reflections revealed a strong understanding of the multifaceted importance of critical thinking, encompassing both personal and social dimensions. They acknowledged its importance not only in learners' personal and professional lives but also in preparing them to be responsible members of society. Their dual perceptions indicate that critical thinking works as the catalyst for individual and collective growth.

Tertiary EFL teachers in this study confirmed that critical thinking is essential for the learners' academic, personal and future professional success. They connected it to learners' ability to conduct research and make independent, reasoned decisions, which are crucial for higher education and professional achievement. They underscored the significance of critical thinking for effective performance across job categories, such as teaching, entrepreneurship, and engineering, as well as educational disciplines, such as humanities, science, and business, thereby confirming the pervasive importance of teaching and learning critical thinking. Accordingly, Munalisa, focusing on the research trend and its connection to critical thinking in higher education, opined, "It will help them think deeper. They will further write or research. In the case of research or writing, it will help them more if critical thinking is incorporated into their undergraduate studies." This indicates the EFL teacher's understanding of critical thinking as a fundamental component for academic empowerment, highlighting its relevance in the context of the 21st-century educational revolution and research-oriented learning. Similarly, highlighting the significance of critical thinking in ensuring professional efficiencies and meaningfully exploring and investing in personal potentials, Farhan said,

> If I talk about an engineer, as an engineer, they should be able to interpret something very rationally. They should be able to make a judgment. What should they do in a given circumstance? So, I feel that for making efficient and effective decisions, they should have critical thinking ability… They won't be

> able to explore their own potential even if they don't possess critical thinking… they will underperform everywhere.

This acknowledgement of critical thinking as a crucial 21st-century job qualification shows the teacher's feeling of relatedness to teaching critical thinking in the tertiary EFL context. Likewise, indicating critical thinking as a life skill, Raihan, an apprentice public university faculty member, stated, "Critical thinking is needed everywhere in our everyday lives… to make decisions… to solve problems." This reflects the teacher's acknowledgement of critical thinking as a fundamental life skill, extending its significance beyond academic settings, and their acknowledgement of the necessity of teaching it irrespective of discipline.

However, one tertiary EFL teachers in this study perceived critical thinking as a universal quality across cultures and contexts, while one considered it as a survival weapon in the 21st century. Their perceptions also highlighted that critical thinking is essential for personal growth through autonomous learning and active engagement with knowledge. Hence, Rahin, focusing on the importance of teaching critical thinking in the global context, mentioned,

> Since the world is changing, it is very important not to go with the flow anymore to keep pace with the globalized context of education. This is high time we should be changing things and our teaching methodologies in the classroom, outside the classroom [*sic*]. Teaching should continue not only inside the classroom but outside the classroom as well…….In the present context of Bangladesh, teaching critical thinking or thinking critically is quite essential because it helps students to navigate the complexities of contemporary society.

This indicates the teacher's knowledge of the contemporary educational landscape, where learning is adaptive and flexible. This also reflects that contemporary teaching responsibilities go beyond the classroom to facilitate the learners to sustain global changes. Such CK can enable the teacher to make informed pedagogical decisions, aligning with contemporary social, educational and career demands.

Similarly, Borsha stated, "I think that critical thinking is very important because it will help them to stop spoon-feeding things, or following the path or instructions of teachers, and help them to think more independently and individualistically." This

suggests the teacher's recognition of an educational shift from teacher-centered, transmissive learning to learner-centered, constructive learning, which is required to foster decision-making and problem-solving confidence and abilities in the learners.

Apart from the personal significances, tertiary EFL teachers in this study articulated the value of teaching critical thinking in the broader social context. They considered it a civic and moral responsibility to ensure social and national development and global citizenship. They reflected that the influence of critical thinking extends beyond the educational and personal domains, building tolerant, ethical and socially responsible citizens, contributing to Bangladeshi cultural fraternity and national growth.

Therefore, focusing on the influence on cultural companionship, Sony, a veteran public university teacher, articulated, "Bangladesh is a country with diversified notions… to sustain in this country and to serve the country." This suggests that critical thinking is viewed as a tool for promoting social cohesion. This also shows the teacher's knowledge of critical thinking extends beyond classroom pedagogy, highlighting their awareness of its broader sociocultural significance in enabling individuals to meaningfully engage with diversity, thereby, a contextually grounded CK of critical thinking and their feeling of relevance in teaching it. However, Munalisa indicated critical thinking as a tool to execute social responsibilities, saying:

> Since they are… an asset to society later on when they graduate… they should understand that it comes with a few responsibilities, a set of responsibilities… in terms of how easily they solve problems, or how good they are at handling challenges. So, critical thinking is paramount for undergraduate students.

On the other hand, Munalisa, referring to the role of undergraduates' critical thinking in attaining the Sustainable Development Goals (SDGs), said, "It's also in the mandate of the SDGs that students should have critical thinking skills." Her statements indicate the value of critical thinking not only as an individual intellectual quality but also in its contribution to collective well-being and long-term progress. This also indicates the teacher's recognition of education as a mechanism for preparing individuals to make meaningful contributions in society. Additionally, this implies the teacher's situated CK of critical thinking.

Overall, the findings suggest that in this study, tertiary EFL teachers' views of critical thinking extend beyond the academic domain and encompass broader social and national developmental visions. By linking the concept of critical thinking to social and national development plans, they demonstrated an awareness of teaching critical thinking as an integral part of social transformations and global connectedness. Therefore, these reveal a sophisticated CK of critical thinking aligned with the global educational transformations.

4.3.1.3 The Interrelationship between English Learning and Critical Thinking Development

The study uncovered tertiary EFL teachers' views on the reciprocal and negative relationships between English learning and the development of critical thinking. They strongly perceived that language learning and critical thinking are complementary. On the one hand, they believed that critical thinking promotes EFL learners' four skills and overall communicative competence, motivating and supporting them in becoming independent learners. In contrast, they also considered that thinking critically depended on the ability to express ideas with adequate language proficiency. They viewed language learning as a tool for exercising critical thinking as the reading, writing and speaking activities provided the learners with opportunities to analyze texts, evaluate standpoints and justify opinions. They highlighted that poor English proficiency in EFL classes hinders students' participation in critical thinking processes, such as questioning, answering, or simply sharing thoughts. Focusing on language learning as a vehicle for practicing critical thinking, Sony uttered:

> While they will speak up, they will calculate what to say, what not to say, and how far to say. So, all these things will make them very calculative, critical in the case of production or in the case of reception.

This reflects the teacher's understanding of critical thinking as an inherent part of communicative competence in the EFL context. This understanding is valuable in shaping instructional practices that integrate language development with higher-order thinking, as it encourages them to design language learning activities that engage learners in analysis, evaluation and creation. Thus, this shows the teacher's discipline

and context-specific understanding of critical thinking. In contrast, Borsha, pointing out the role of critical thinking in autonomous language learning, said,

> Critical thinking helps students learn English better. For example, it will help them stop following books or texts blindly. Rather, they will think critically and have some intriguing, interesting, amazing ideas and thoughts. Then, they will incorporate them into their English learning more, rather than just following textbooks or any other material they are just given.

This shows the teacher's belief about the facilitative role of critical thinking in enhancing critical thinking, thereby underscoring their feeling of the relevance of integrating critical thinking in the tertiary EFL context and an experience-driven CK. Nevertheless, Farhan pointed out, "They hesitate because they don't want to speak in English or maybe they are weak in English. So, we don't linger a lot." This suggests a CK developed from classroom experiences that recognizes the influence of Leane's language proficiency on their willingness to participate in meaning-making discussions, reflecting an experience-driven CK. Likewise, Progga, an experienced private university teacher, explained,

> I think it is because of their language barrier; first-year students don't ask many questions. They have just started the university, and they are not that familiar with the English environment. As they have to ask the question in English, they don't feel encouraged…Even if they know, maybe they can think in their own language, but they cannot articulate that in English, so it is not useful.

This indicates the teacher's nuanced and contextually grounded CK as she displays an understanding of the complex interplay between language proficiency, academic transition and student participation.

Contrarily, two tertiary EFL teachers in this study viewed critical thinking and language learning as disconnected factors. They believed that critical thinking exists among EFL learners, irrespective of their language proficiency and language barriers do not limit their ability to think critically. They also considered that language exposures and practices, rather than critical thinking, are required for developing English proficiency. Rochester, a PhD-holding and experienced private university

teacher, pointed out this negative connection, saying, “To have critical thinking, you don't require better speaking skills. I mean, even if you cannot speak English, you can have a very good critical thinking ability.” This reflects the teacher’s conceptual separation of language proficiency and critical thinking. While this is true, the view undermines the mediating role of language in promoting critical thinking in the EFL context, suggesting a possible discrepancy in CK. Progga, on the other hand, underscored the limited or no contribution of critical thinking in English learning, stating:

> I think it will depend on whether critical thinking will help them or not. English is a language, and learning a new language means possessing new skills. A person who doesn't have critical thinking abilities but has been in an English environment for a long time can speak English. So, I don't think they need critical thinking abilities to learn English; they just need exposure to English.

This reveals the teacher’s limited contextual CK of critical thinking as English is viewed as an exposure-based skill rather than a process that requires HOT engagement. Apart from these, tertiary EFL teachers in this study highlighted that in the EFL classroom context, where the mother tongue is restricted, students fail to express their critical thoughts. However, they can express those while their mother language is allowed.

Collectively, these findings indicate their developing CK of critical thinking in the EFL context. The findings revealed that in this study, Bangladeshi tertiary EFL teachers’ understanding of the connection between EFL learning and critical thinking development is strongly forged by their hands-on classroom experiences. Their perceptions about the interconnectedness of EFL learning and critical thinking indicate a mature understanding, while those who believed the opposite may have overlooked the possibilities and strategies to blend critical thinking with EFL lessons. Therefore, at the individual level, there is a lack of knowledge of contextualizing critical thinking, and it requires professional growth toward this achievement.

4.3.2 Theme 2: Pedagogical Content Knowledge (PCK) of Critical Thinking

Tertiary EFL teachers' pedagogical understanding and practical decisions indicate their Pedagogical Content Knowledge (PCK) of critical thinking. PCK refers to their knowledge of how to transform their CK of critical thinking into pragmatic practices, including selecting, adapting, and implementing instructional strategies, materials, activities, and tools. This also involves their pragmatic conceptions about navigating contextual, curricular and learner-related factors to promote critical thinking.

Overall, Theme 2 displays Bangladeshi tertiary EFL teachers' dynamic, situated and complex PCK of critical thinking. The theme underscores not only their formal PCK of critical thinking but also the ways they devise pedagogical opportunities and challenges that ultimately shape their instructional practices for critical thinking.

4.3.2.1 Knowledge of Teaching Materials for Critical Thinking

Knowledge of materials means tertiary EFL teachers' understanding of the appropriateness of materials for developing critical thinking in general and in their particular contexts and the specific impacts of those materials. Tertiary EFL teachers' knowledge of materials encompassed their integration of critical thinking in class, and both general perceptions of materials and materials used in developing critical thinking. In short, these understandings illustrate their PCK of materials, revealing both reasoned choices and contextual barriers that influence their instructional practices.

The results revealed two main approaches to teachers' integration of critical thinking in their classes: language-proficiency-based and progressive integration. Integrating critical thinking based on students' proficiency levels involved scaffolding, thought mapping, and incorporating Lower Order Thinking (LOT) activities for low-proficiency learners and Higher Order Thinking (HOT) for high-proficiency learners. Regarding this, Rochester, a private university teacher, explained, "For some, I give them only reading tasks, read them, and say what they guess from them…For others, the better performers, I give them another case study based on this." This reflects the teacher's PCK of critical thinking in a mixed-ability class, where cognitive processes should begin at different levels, aligning with learners' language proficiency. This further implies that instructional decisions are largely influenced by classroom

judgments about learners' proficiency, leading teachers to continuously upgrade materials and tasks to align cognitive demand with language proficiency.

On the other hand, Clent Moss, emphasizing the need for language proficiency among the basic performers, said, "The students who have just basic level proficiency and I try to focus more on developing their language first before going to the higher order thinking skills." This suggests that the teacher make sequencing decisions based on the perceived cognitive readiness of learners to avoid cognitive overload. However, this indicates a rather static linguistic polarization rather than the integration of gradually increasing cognitive levels.

However, six tertiary EFL teachers in this study underscored the hierarchical integration of thought processing into their instructions. They emphasized that the instructions should start with simpler and easier questions and activities, gradually progressing to higher difficulty levels. They believed LOTs should serve as inputs for HOTs, such as analysis, evaluation, and creation. They believed that incorporating critical thinking, aligning with students' cognitive abilities, can yield better HOT outputs. Thus, Tahmina stated,

> I have a mental map of what they're thinking and then I know how to approach the topic. Whether the thinking is in lower order or higher order and what sort of complexity will be helpful for them to understand the topic better.

This implies that instructional decisions are guided by ongoing evaluation of learners' cognitive levels and the teacher's context-responsive pedagogical knowledge. Similarly, underscoring the importance of LOTs, Farhan mentioned:

> Since we want to achieve several outcomes in a course, we have to keep both the lower-level and higher-level skills. Initially, in a course, we engage them in lower-level skill development activities and gradually, in the later part of the course, we engage them in critical thinking. We do not conduct critical thinking-based activities at the outset of the course.

This demonstrates the teacher's understanding of how language proficiency and cognitive levels interact, underscoring a structured view of instruction.

Additionally, four tertiary EFL teachers in this study incorporated critical thinking into their instruction due to the adoption of the OBE curriculum in universities, while others sought to enhance learners' cognitive abilities through active learning. Contrarily, four of them integrated it to support students' better understanding of their instructions and improve and apply language skills. While one tertiary EFL teacher in this study incorporated critical thinking to encourage students to participate in classroom dynamics, others aimed to enhance the learners' personal qualities. Marking the OBE curriculum as an impetus to integrate critical thinking, Progga mentioned:

> I try to integrate critical thinking in my class because we follow an OBE-based curriculum, so our activities are designed as per the curriculum. In OBE, there is a point that we have to teach them critical thinking in our classroom. So, for that, some activities are there that will help them think critically. I focus on critical thinking, especially in their writing and speaking classes.

This indicates that the EFL teacher's PCK of critical thinking is influenced by curriculum-driven expectations that define critical thinking as an explicit learning outcome. It further suggests an understanding of how curriculum principles can be transformed into classroom practices by integrating cognitively demanding tasks within language skill development, particularly the productive ones. Likewise, Raihan, a novice private university faculty member, highlighted the importance of enhancing learners' cognitive engagement:

> I integrate this technique to develop their thinking. In university, most students are reluctant to learn, reluctant to think, because they think that the teacher will do everything. So, we do not have to do anything. We just come to the class and give that in this and just go out. So, teaching is not, learning is not something like that [*sic*].

While this statement indicates a persistent issue of students' reliance on teachers, this also reflects teaching innovativeness in utilizing critical thinking to shift learning from passive reception to active cognitive engagement. In contrast, Progga, emphasizing critical thinking integration as a language development tool, said:

> By the time they are at the university, they have been learning English for 12 years or more. So, they have all the necessary vocabulary and grammatical knowledge. Now, they just need to use them. Now, if they have critical thinking abilities, they can use their learning, what they have learned in their school and college, and their experience from their surroundings with the current learning, then they can make a very meaningful correlation between these items, and maybe this will help them to learn faster.

This highlights the teacher's understanding of the relationship between the learners' accumulated linguistic abilities as resources and the role of HOT in activating these resources for meaningful use. This also indicates an ability to align instructional decisions and practices, where critical thinking serves as a mechanism for language development. Interestingly, Borsha uttered, "It will enhance their skills as a person as well. That will help them to have a better personality as well." This indicates that pedagogical decisions about integrating critical thinking into language instruction are influenced by broader PCK that extends beyond linguistic outcomes, thereby highlighting the teacher's sense of moral responsibility and holistic understanding of teaching.

Following the integration of critical thinking, the findings showed that tertiary EFL teachers in this study viewed a wide range of materials as effective for developing critical thinking, including reading materials, digital resources, authentic content, and teacher-developed materials. Reading materials, such as literary and authentic texts, including newspaper and research articles, were considered appropriate for teaching critical thinking. They further believed that digital resources, such as movie clips, cartoons, songs, public-speaking videos, and images, can ignite HOTs among learners. Moreover, they considered authentic content, involving blogs, case studies, advertisements, documentaries, social media content, contextual, trendy and sensitive topics, and problem-solving contexts, helps develop critical thinking. Additionally, four tertiary EFL teachers in this study believed that developing their own materials, tailored to learners' levels and needs, is suitable for teaching critical thinking. Concerning the appropriateness of reading materials, Farhan said, "Reading materials can be the best… they read somebody else's thoughts and ideas… They interact with the writer's thoughts and ideas." This suggests that the teacher evaluates instructional materials not only for their linguistic suitability but also for their potential to broaden learners' intellectual

capability. Similarly, underscoring the relevance of audiovisual content, Clent Moss mentioned:

> I think these materials, like pictures or songs, or other audio-visual materials, can be effective, especially because they are easy to understand and most students can relate to them. They can be used to activate the schemata of the students quickly, which is the first step to foster critical thinking, in my opinion.

This indicates the teacher's pedagogical understanding that material selection should be guided by its cognitive demand, suggesting an awareness of the preparatory role of instructional materials in supporting critical thinking development. This further indicates the teacher's awareness of the effectiveness of ICT-based materials in promoting critical thinking. In the same manner, focusing on the effectiveness of authentic materials, Sony noted:

> Every contemporary issue always creates vibration among the students because things that are happening or taking place inside us on a regular basis can be a good source of initiating critical thinking. I mean, we can refer back to regular incidents or the incidents that just took place in the country, or the context so that they can relate and they can better understand.

It reflects the teacher's understanding of contextually connected authentic materials as effective for developing critical thinking. On a deeper level, it indicates a PCK that recognizes the relationship between content relevance and cognitive engagement, suggesting that the teacher selects materials not only for their linguistic value but also for their potential to position critical thinking within meaningful contexts.

However, Rochester underscored developing teachers' own materials, saying, "You can prepare your materials because you know your students' needs and their levels. So, you can prepare your handouts for them." This implies that the teacher has a PCK that places the teacher as the contextual decision-maker to choose context-responsive resources, further highlighting their autonomy in adapting materials, aligning with learning needs and goals.

Nevertheless, only one tertiary EFL teacher (Tahmina) in this study perceived that the number of effective teaching materials is not limited to the above. She

considered that any material with meaningful calibration and teacher manipulation toward the teaching-learning goal makes the teacher the most important and effective resource in developing critical thinking.

Contrary to this, tertiary EFL teachers in this study expressed their views on ineffective materials that included EFL textbooks, grammar courses and culturally disconnected topics. They perceived that the EFL textbooks, which are usually developed by the faculty members, are unable to engage learners in critical thinking as they lack contextuality, fail to address learner differences and sustain learners' interests in the content. They believed that these textbooks are designed to promote language skills rather than cognitive growth. Additionally, they believed that grammar courses and topics are inappropriate for integrating critical thinking because they emphasize structure. Furthermore, one tertiary EFL teacher in this study perceived culturally and contextually unfamiliar content as failing to invite learners' HOTs. Regarding EFL textbooks' inability to attract the learners' attention, Raihan stated, "I have already been asked by students why this book should be designed. Who were the people responsible and designing the book? It should be more polished, and it should incorporate more things that the student can think of." This implies that the teacher evaluates the EFL textbook through the lens of their PCK, which underscores the significance of aligning teaching and learning resources with higher-order cognitive processes. Correspondingly, Tahmina indicated these textbooks' limitations, saying, "The book does not know which of my students have what sort of weaknesses, which of my students have what sort of strengths." This points to teacher PCK that highlights the development of materials, such as textbooks, which correspond to learner differences in terms of both their linguistic proficiency and cognitive levels. This also indicates the teacher's evaluative judgement of prescribed materials, highlighting their critical and adaptive PCK that enables them to adjust instructions and incorporate more contextually connected materials

On the other hand, Zonoon pointed out the limitations of grammar courses, explaining, "Very basic-level foundation courses are mostly dependent on grammar activities. And when there are grammar activities, I don't believe that this is critical thinking." This suggests a restrictive dimension of their PCK that overlooks the opportunities to design form-focused, critical thinking-integrated materials and activities.

On a separate note, indicating culturally unknown topics and context as inappropriate, Rochester said, “If the topic is unknown, none of them are familiar with it, so they cannot share ideas. They don't know what to think about. So, that's why familiar topics are important.” This statement indicates the teacher’s understanding of the significance of aligning materials with learners’ prior knowledge, suggesting a potentially limiting assumption that unfamiliar or culturally distant content cannot support critical thinking processes.

In compliance with these findings, the study revealed that tertiary EFL teachers in this study utilized a diverse range of teaching materials in their classes. Most of them relied on textbooks and teacher-generated materials, supported by digital, authentic and question-based materials. While tertiary EFL teachers in this study had to rely on the textbook as part of institutional protocol, they could also bring their selected and developed materials into the classroom. They also reported using varied digital content, such as accessing EFL and English as a Second Language (ESL) website content, and audio-visual content. In addition, many reported using authentic materials, such as real-life scenarios, journal articles, newspaper articles, documentaries, websites, social media content, and real-life decision-making contexts. Moreover, two teachers utilized different types of questions, for example, open and closed-ended and HOT questions as teaching materials for developing critical thinking. Furthermore, two tertiary EFL teachers in this study reported using engaging topics and a wide range of materials to encourage learners to engage in conversations. Sumaiya pointed out the inevitability of using EFL textbooks in class, saying, “Textbooks are needed because this is our primary source.” This highlights textbooks as the essential anchor of instructional practices, suggesting an underlying recognition of their role in ensuring curricular continuity and content coverage. On the contrary, Tahmina stated, “I do use a textbook, but I do not rigorously or religiously use the textbook.” This reflects the teacher’s PCK that underscores a critical awareness of the limitations of the standardized materials in capturing the complexities of classroom dynamics, suggesting that they require reinterpreting, mediating, and selectively implementing the prescribed materials to better align with teaching and learning context. Additionally, Rahin mentioned:

> I basically use materials such as…TED Talks, podcasts, and movie clips…. I showed them different videos, some movie clips, and different characters of

those movie clips. Then, I told them to analyze and think critically whether or not these characters are talking or thinking inductively or deductively.

This implies the teacher's understanding that critical thinking can be developed through guided interpretive activities, where learners need to question the underlying pattern of logic in authentic communicative contexts. Additionally, this highlights the teacher's PCK of media-rich resources as viable tools for activating HOTs. Moreover, Zonoon pointed out questioning as a major instructional tool, while explaining:

> In case of summary writing, I tell them before reading the text to apply the 5Ws framework. The 5Ws framework is the WH questions, which is called the Kipling method. I tell my students, " Ask what? why? about the text. You don't need to know the sequence. Ask who the people are? Where is the place? Talk about that. When is the time? And how an incident or anything happened [*sic*?"].... So the ones who got the answers, those are your key concepts, and then synthesize them and combine them in your write-ups, using simple or complex or compound sentences. And that becomes the summary. That's how I apply WS questions in most cases.

This statement suggests the teacher's deep understanding of scaffolding for promoting linguistic proficiency. While structurally guiding the synthesis of controlled writing tasks, this undermines the explicit engagement with the evaluative and critical reasoning process. This also indicates the teacher's limited PCK of scaffolding for HOT development.

In contrast, Rahin underscored the use of closed-ended questions: "In a communication class, when I talk about non-verbal communication, I always ask the students if they understand the difference between oral discourse." This means that questions are employed as a confirmatory tool, revealing limited use of this strategy for developing critical thinking. This also indicates a possible lack of understanding in using questions to foster critical thinking. Additionally, Farhan indicated his use of interesting topics in his class, mentioning:

> We offer a basic English-speaking course to our fresh students. Even in that course, we assign them topics, like "if you were the Prime Minister of

> Bangladesh, in the given context, how do you solve this problem [*sic*]?" This is one of the activities in writing, even in reading.

This statement suggests the teacher's awareness of contextualizing the activities to make them more meaningful and intellectually engaging for the learners. Indicating the contextualization of materials from a variety of sources, Tahmina stated:

> I actually use a mixed variety of blended materials, because I do not know which of my students are visual learners, and which of them are auditory learners. So, I try to keep presentations. I also try to keep a small video, which also has the audio. Sometimes I also keep a small audio, and then I try to write on the board.

This reflects the teacher's understanding of the need to adapt instructional approaches for addressing learner differences. On a deeper level, this indicates the teacher's awareness that learners can be better engaged when the content is accessible and flexible to harness learners' diverse needs and strengths.

Nevertheless, three tertiary EFL teachers (Munalisa, Progga and Rochester) in this study reported that problem-solving activities and materials are rarely used in their classes. They believed that there was little opportunity to exercise it in the EFL context. One tertiary EFL teacher (Munalisa) in this study also informed that they did not incorporate materials and activities on remembering levels, as learners are supposed to practice only HOTs.

In line with this, the analysis uncovered tertiary EFL teachers' in-depth evaluation of these materials for developing critical thinking. They had contradictory opinions on the textbooks' ability to promote critical thinking. While two tertiary EFL teachers in this study believed that these textbooks were designed to develop language proficiencies and lacked cultural connectivity, others considered that they could enhance critical thinking. Many claimed that four-skills-based activities, such as argumentative and compare-contrast essays, evaluative topics, trendy argumentative topics, authentic materials, fiction, and non-fiction, helped promote learners' critical thinking. Concerning the textbooks' negative roles in developing critical thinking, Clent Moss said:

> We have some books that focus predominantly on learners' understanding the four fields of English: reading, writing, listening, and speaking. So, suppose there is a text on reading comprehension and the students have to remember some answers if they want to answer the questions based on the reading comprehension.

This shows an underlying concern about how the prescribed materials promote surface-level learning, suggesting the teacher's professional reflectivity about the effectiveness of the materials used in class. On the other hand, Tahmina articulated, "I think for now, the textbooks that I have been given, this does promote their higher-order thinking skills and critical thinking skills." This highlights the teacher's implicit trust in the prescribed materials' potential to develop HOTs, implying that the curriculum design can facilitate the development of critical thinking. Moreover, pointing out critical thinking-integrated language activities, Clent Moss mentioned:

> First-year students have to learn the four basic skills of reading, writing, speaking, and listening. So sometimes I would ask them to listen to a motivational video and afterwards they have to notice the jargon or registers or personality a motivational speaker has to convey. Afterwards, two or three of them have to give a motivational speech of their own in the class which may require them to apply their critical thinking skills, such as analyzing and applying [*sic*].

This reflects the teacher's nuanced understanding of how to integrate cognitive and linguistic objectives through task design. Results also indicate that the materials tertiary EFL teachers in this study used in their classes enhanced learners' HOTs and critical thinking dispositions, suggesting overall development of critical thinking. Teaching materials, like journal articles, newspaper articles, literary texts, argumentative essays and situations, and problem-based topics, and drama presentations, promoted learners' evaluative thinking, decision-making and problem-solving skills. However, while two of them (Clent Moss and Raihan) perceived that these materials could enhance both LOTs and HOTs, others (Rochester) considered that these materials' effectiveness depended on learners' intelligence levels rather than the

materials themselves. Sony highlighted the materials' potential in promoting both LOTs and HOTs while saying:

> Whenever they come up with so many interpretations from different angles and notions in case of solving their real-life problems, they will think critically. They will try to amalgamate different perspectives and eventually, it will help them. So, it is very obvious that the practice they are doing will be implemented in their own lives.

This indicates that the implemented EFL materials are viewed as a tool to go beyond language for creating opportunities to engage learners in HOTs. Likewise, Sumaiya underscored the materials' effectiveness in promoting critical thinking dispositions:

> A person should be critical or a person should be creative in their thinking about whether this news is positive or negative, whether this news is fake or real. If they can differentiate between all these things, then they can gain proper knowledge from that.

This reflects that the teacher values authentic materials for their potential to reduce learners' passivity and encourage them to actively engage in the evaluative process, leading to knowledge construction.

Despite these positive evaluations of the materials' role in developing critical thinking, two tertiary EFL teachers in this study reported that their main intention in using these materials was to ensure students' engagement rather than to foster critical thinking development. They believed that newspaper articles and trendy online content and topics attract students more to the classroom instructions.

Altogether, the analysis presents that Bangladeshi EFL tertiary teachers' PCK of critical thinking materials is broad, encompassing a wide range from textbooks to online content, yet fragmented, as comprehensiveness is unevenly developed among individual tertiary EFL teachers in this study. On the one hand, their selection of materials reflects innovativeness, contextual awareness, and a desire to diversify beyond textbooks as they integrated digital, authentic and student-centered content and admitted their central role in navigating materials for critical thinking. However, gaps remain in their systematic selection of materials, aligning with the specific cognitive

goals and evaluating their effectiveness through explicit critical thinking tests. In particular, their controversial views on textbooks and their reliance on them indicate inconsistent pedagogical reasoning and a limited ability to differentiate between effective and ineffective materials for developing critical thinking. Moreover, their instrumental intentions behind integrating critical thinking and authentic and interesting materials and reliance on students' intelligence level, suggest a misalignment between the OBE-based EFL curriculum and their instructional practices. This further indicates their limited PCK of engineering materials, whatever they are, to promote learners' critical thinking.

4.3.2.2 Knowledge of Questioning for Teaching Critical Thinking

Teachers' knowledge of questioning for teaching critical thinking means their perception of questioning as a tool and strategy, and their selection and application of questions for developing learners' critical thinking. Tertiary EFL teachers' knowledge of questioning encompasses their perspectives on questioning as a tool, their perceived questioning practices with low-proficiency learners, perceived questioning practices, perceived students' questioning practices and knowledge of dealing with students' personal and sensitive judgments.

a. Perception of Questioning as a Critical Thinking Development Tool

Tertiary EFL teachers in this study held varied yet mostly positive stances on the use of questioning as a strategy for teaching critical thinking. Four tertiary EFL teachers in this study viewed questioning as an integral part of the critical thinking process and its teaching approaches. They also admitted that questioning is fundamental to human intelligence, leading toward new understandings of content and context. In this regard, Farhan articulated, "If you don't ask questions to your students, how will they start thinking critically about something? So, if you don't provoke them, if you don't give a prompt or even probing questions, at what point will they start?" This suggests that questioning is valued as a fundamental tool for engaging learners in deep thinking, indicating the teacher's professional commitment to fostering critical thinking through purposeful, structured pedagogical practices. In a like manner, Sony explained:

> Questioning is important because a human being thinks based on questions. Whatever I want to know, I will be thinking in question form. For example, if I just get something, I don't know, possibly the first question I will create will be what is this? What is the use of this? Why is it here? Who brings it here? So, whatever I think, I create questions inside me. And that's why the question is quite connected with critical thinking. If you do not have curiosity, you don't have a question. And if you do not create a question, probably you won't be critical.

This statement highlights the teacher's philosophical and pedagogical understanding of questioning as the core mechanism of cognition that encompasses knowledge construction across diverse disciplines. This further reflects the teacher's awareness of pedagogical practices that emphasize inquiry-based learning.

In line with this, the findings revealed their conflicting viewpoints on suitable questions to promote critical thinking. Tertiary EFL teachers in this study considered different types of questions effective for developing critical thinking. While five tertiary EFL teachers (Clent Moss, Farhan, Munalisa, Progga and Sony) in this study perceived that HOT questions, like inferential, analytical, hypothetical, and contextually connected and thought-provoking questions, are effective for stimulating learners' critical thinking, others considered LOT questions, such as yes/no and descriptive questions, as a good starting point for teaching critical thinking. Moreover, they emphasized mutual questioning between teachers and students to make meaningful discussions. In addition, seven tertiary EFL teachers in this study perceived that questions with multiple valid responses, such as open-ended, controversial and WH questions, invite learners' critical thinking. Concerning HOT questions, Farhan articulated, "I also prefer hypothetical questions and imaginary questions. It depends on what questions would make them able to think critically," while Clent Moss said, "Questions that require inferencing are a great idea as well." These quotations reveal that the teachers value questioning as a graded and purposeful strategy to stimulate critical thinking through questions corresponding to different cognitive levels. These also imply the teachers' PCK of questioning is shaped by their experiences of dealing with diverse learner responses and varying degrees of cognitive engagement in classroom interaction. In contrast, considering a yes/no question as the starter of complex thinking, Tahmina said:

> If they give me a yes or no question, I will always tell them why do they think it is yes, why do they think it is no [*sic*]. My students can never get away with just yes or just no. Then, if I ask them, what sort of travel destinations do you like? …Then, I will gradually go to more complex questions.

This shows the teacher's innovativeness in harnessing simplicity as a ladder to the progressive development of learners' reasoning skills. Additionally, stressing the significance of reciprocity in critical dialogues, Sony stated, "It is not that you always ask questions to promote critical thinking in your students. Rather, the students will create questions inside their brains about things." This statement captures the teacher's understanding of the role of the conversational and social learning approach to promote internalized inquiry that enables learners to engage in knowledge construction. On the other hand, regarding the relevance of controversial questions, Raihan stated:

> When teachers ask … "Why school uniforms should be so important, or do you think school uniforms are important [*sic*]?", they answered a lot of points; some of them were against this point. They do not think that a school uniform is important because it shows institutional pride… By answering these types of questions, they can develop their critical thinking ability.

This shows that the teacher rejected the transmissive education, emphasizing that knowledge is contestable, requiring examination and negotiation. In addition, this implies the teacher's commitment to encourage learners to engage in active knowledge construction. Likewise, Clent Moss, focused on getting diverse responses through contextualized questions, "I think the teachers can use different types of open-ended questions. They could ask students some questions that encourage the students to make connections between the text or material and their own lives." This reflects the teacher's critical awareness of the effectiveness of questioning in engaging learners in knowledge construction. Thus, the teacher's PCK extends beyond simple content delivery.

As counter opinions, five tertiary EFL teachers in this study considered closed-ended and yes/no questions ineffective. They believed that such questions fail to promote critical thinking because they cannot engage learners in deep, extended thinking. In this regard, Rochester stated, "I strongly believe yes/no questions never help in critical thinking, because it is just yes or no, so there is no thinking in it." This

statement reveals the teacher's PCK of questioning is shaped by the understanding that instructional prompts should elicit reasoning processes rather than factual recall or recognition. From a scaffolding perspective, this may indicate the teacher's limited understanding of how LOT questions can serve as the foundation for HOT development. In essence, tertiary EFL teachers' views indicate a mixed understanding of the different types of questions that promote critical thinking.

b. Perception of Teacher and Student Questioning Practices in the Classroom

The results indicate that tertiary EFL teachers in this study used a wide range of questions in their classes. Six tertiary EFL teachers (Clent Moss, Farhan, Munalisa, Progga, Rahin, and Rochester) in this study used progressive questioning, starting with simple questions and progressing to more difficult ones. They considered beginning the class with simple and LOT questions to help reduce learners' anxiety and gradually improve complex thinking. Moreover, they indicated that they translated the questions into the mother tongue to facilitate the next level of thinking for basic proficiency learners. However, a few teachers (Rochester) used students' English proficiency and learning goal-oriented questions. They reported intentionally selecting students to answer specific questions based on their ability to do so. Moreover, they varied the questions based on learners' willingness to respond and language abilities. However, for low-proficiency learners, they balanced the difficulty levels of the questions, while they infrequently scaffolded for proficient learners. Zonoon mentioned questioning as a class starter for him, while saying,

> I ask them, for example, at the very beginning of the class, almost every time, "What topics were taught in the last class? Can anybody add?" And then other people will add up if that person forgets. I start with this, very traditionally, but that's very effective. That helps me also sometimes to remember if I'm also a human being and may forget things [*sic*]. So, people add together, thinking about what happened and then we go on and go on. Then…we ask a lot of questions. They come up with their ideas from different corners of the class.

This unveils the teacher's use of questioning as an instructional tool to operate the class rather than engaging learners in HOT processes, indicating a habitual reliance

on questioning as a tool rather than a consciously designed strategy to promote critical thinking. Hence, this reflects the teacher's limited PCK of questioning. Contrarily, Farhan stated:

> The common way is that teachers should start with the questions that the students will understand easily. For example, most often we ask them, " What do you think? Or, what would you do if you were in the place of this or that person?"

This shows that the teacher is aware of the learners' cognitive preparedness and acknowledges the value of scaffolding to promote critical thinking, suggesting a PCK shaped by reflective practices and a deliberate orientation toward sequenced questioning. However, Rochester focused on learner differences as he uttered:

> I have to be careful about their learning differences, because I cannot ask the same question to everyone. Their motivations and skill levels are different. Their learning backgrounds are different…So, I cannot give an example of a common question for everyone. That would be very difficult….When I have students in my class, some of them are interested in going for the IELTS exam. Others are interested in going abroad. Since their goals are different, I have to be careful about their goals.

The teacher's consideration of learner differences in asking questions not only reflects mature PCK but also a strong commitment to harnessing learning strengths to ask relatable, graded questions that spontaneously invite HOT. Additionally, Tahmina said, "I do not want to overwhelm them with higher-order questions. I try to keep a mixed set of questions so that it's relatable and it is catered towards all my mixed-ability students." This demonstrates the teacher's sensitivity to the learner's cognitive and affective readiness, reflecting a strong PCK shaped by context-responsive pedagogical practices.

Accordingly, the reasons for asking critical thinking questions in class involved conflicting features. Seven tertiary EFL teachers (Borsha, Clent Moss, Farhan, Raihan, Rochester, Sony, and Sumaiya) in this study thought they deliberately asked critical thinking questions to improve learners' critical thinking skills, such as decision-

making, creative thinking, deep and multi-perspective thinking, reasoning, activating schemata, and challenging students' assumptions. In addition, they aimed to promote learners' critical thinking dispositions, like open-mindedness and curiosity. Moreover, they wanted to extract students' opinions by purposefully asking these questions. Conversely, five tertiary EFL teachers (Farhan, Munalisa, Progga, Raihan, and Zonoon) in this study deliberately asked these questions, focusing on reasons unrelated to the development of critical thinking. For example, seven of them used these questions for pragmatic purposes, such as encouraging students to participate in classroom discussions, enhancing their understanding of the lectures, and assessing their cognitive levels. In addition, they aimed to improve learners' speaking skills by deliberately asking critical-thinking questions. Relating the reason for developing critical thinking skills, Sumaiya explained:

> I don't want my students to just go through the textbook and know the information in the textbook and just give their answers based on the given knowledge in the textbook. I want them to go beyond the textbook….if I tell them, "Do you think child marriage is necessary for our country?" This kind of question will promote their decision-making or promote their ability for critical thinking.

This suggests that the teacher's questioning is guided by their personal value for promoting critical thinking, revealing a contextually grounded PCK that acknowledges language learning not only as a linguistic competence but also a process of critical awareness, independent judgement and an ability to engage in real-world issues. Likewise, highlighting the purpose of improving learners' curiosity, Sony opined:

> The opportunity of throwing questions is very limited because it's the only class time when we can become engaged with our students. While the teacher is not present, he or she can develop some process and share it with the students so that when they are confronting anything, they can develop curiosity and questions.

This reveals that the teacher's PCK of questioning goes beyond the classroom to extend to the learner's broader cognitive and experiential world. Thus, this indicates

the teacher's proactive and innovative questioning practices, reflecting a forward-looking PCK. In contrast, highlighting the pragmatic benefits of asking critical thinking questions as a reason, Progga stated, "I intend that they should be engaged in what they learn. That's why I try to connect it. So, to make them involved, I use this type of question." This shows that there exists a substantial gap between the institutional critical thinking goals and the teacher's PCK of questioning. Additionally, Borsha articulated, "It will help them to speak more and by speaking about their opinion, they will be more comfortable speaking. Thus, it will enhance their speaking skills, answering questions, or raising their voice." This reveals that the teacher's PCK of questioning is confined to the linguistic outcome, reflecting not only a limitation in contextually aligned PCK but also institutional prioritization of communicative fluency over cognitive goals. In short, tertiary EFL teachers' perceived questioning practices involved various question types and strategies influenced by their emphasis on the learners' needs and teaching goals.

Apart from questioning practices in general, interview data also revealed tertiary EFL teachers' questioning practices with low-proficiency students. Since these students have language barriers, asking them critical thinking questions requires more strategic and empathetic approaches. Tertiary EFL teachers in this study reflected on varied practices of intentionally asking low-proficiency learners critical thinking questions. While a few of them (Munalisa, Progga, and Raihan) reported that they intentionally asked low-proficiency students critical thinking questions, others reported that they mainly asked these questions to high-proficiency students and sometimes avoided them with low-proficiency learners.

In correspondence, teachers who intentionally asked critical thinking questions to low-proficiency learners reported inconsistent practices. Only a few of them used these questions regularly, while most others used them infrequently. Regarding asking critical thinking questions to low-proficiency learners, Progga said, "I ask critical thinking questions to the weaker students."

Contrarily, highlighting the proficiency development, Clent Moss articulated, "My primary goal is to help students understand the material or text I am teaching in the class. For first-year students, asking questions that may require critical thinking may not always be the goal." Though this reveals the teacher's sensitivity to learners' preparedness, this indicates that their questioning practices are fundamentally grounded in linguistic development rather than cognitive development.

Concerning the frequency, Tahmina said, “In every class, I try to incorporate two to three critical thinking or higher-order questions.” On the contrary, Rahin stated, “I don’t do that much because I do understand that this will be very challenging to the low-proficiency students. I always try to maintain the levels.” This shows the teacher’s negative attitude to the learners’ cognitive ability. Similarly, Zonoon explained:

> I do not ask higher-order questions to basic proficiency students very often, actually, as we are bound by the system that guides us. We cannot go beyond the system. We have class discussions on, for example, the right forms of verbs, using articles, finding the part of speech, which are also important in thinking critically…But when they go for the application level of this, it’s possible to use critical thinking [*sic*].

This unveils that teachers’ questioning practices and experiential PCK development are significantly shaped by curricular and systematic constraints and expected outcomes from the examinations.

Correspondingly, the analysis identified factors that both inspired and restricted the asking of critical-thinking questions to low-proficiency students. Tertiary EFL teachers in this study reported contradictory reasons for intentionally asking critical thinking questions to low-proficiency learners. A few tertiary EFL teachers (Tahmina and Zonoon) in this study reported asking critical thinking questions because they believed that, since critical thinking is not a language-dependent ability, even low-proficiency students could answer them. Therefore, they wanted to develop their critical thinking through intentional, frequent critical-thinking questions. In addition, they argued that teaching critical thinking to these learners was equally important. Nevertheless, one of them reported asking critical thinking questions to these students to enhance their language proficiency and motivate classroom participation. About their belief in these learners’ critical thinking ability, Sumaiya said:

> A person's language can be weak, but their thinking ability may not be weak. Most of the students in my class can think critically… So, I ask all my students whether they are weak or strong in language, the questions that can promote their critical thinking [*sic*].

On the one hand, this reflects the teacher's positive attitude toward learners' cognitive capacity. On the other hand, this shows the teacher's well-informed PCK that goes beyond the linguistic perspective of EFL teaching. Moreover, Raihan mentioned, "Students with a lower level of proficiency also need to develop their critical thinking ability. I think every student is important and everyone should develop their critical thinking ability." This statement indicates the teacher's awareness of the global and social context where critical thinking becomes a democratic educational right, reflecting professional commitment to ensure educational equity.

In addition, the teachers did not frequently ask critical-thinking questions to low-proficiency learners due to student-related issues and systemic constraints. They refrained from asking many critical-thinking questions to these learners, as they believed this would increase their learning anxiety. Moreover, the teachers believed that these learners would not be able to respond to these questions. Furthermore, they reported that since the syllabus did not adequately focus on HOTs, by default, they could not ask them many critical thinking questions. Highlighting the attempt to reduce low-proficiency learners' anxiety from critical thinking questions, Raihan stated:

> If I ask them too many questions and they cannot answer, they will be discouraged from coming to the class. They will take it as a fear that the teachers ask so many questions. Even though we cannot answer them, he or she is just asking and asking and asking. I am a person who wants to encourage them not to be discouraged.

While this shows the teacher's understanding of the psychological phenomena in an EFL context, it also highlights the avoidance strategy limits the opportunity for engaging learners in productive struggle and deeper intellectual performances. Thus, it also reflects the teacher's underdeveloped PCK within the pressure to maintain systematic balance between learner attendance and cognitive goals. Moreover, Sony said:

> Probably, I do not ask that many critical thinking questions to students with low language proficiency because before having the notions of the students, you need to ensure proficiency [*sic*]. If I can't express anything, then it is very tough

to express it critically. It is good to have the ability to express before expressing critical ideas.

This reveals the teacher's understanding that in the EFL context, ensuing language proficiency precedes cognitive development, indicating language as an expressive tool. Regarding the teacher's PCK, this reveals the teacher's understanding of the relationship between language and critical thinking, which highlights their subsequent development rather than a simultaneous one.

On a separate note, Rochester mentioned, “As our syllabus requires us, it's the four skills, e.g., listening, speaking, reading, and writing [*sic*]. There is no critical thinking skill integrated in this part. We don't assess critical thinking skills.” This demonstrates that the teacher’s questioning practices and experiential PCK are shaped by curriculum and assessment priorities. Briefly, in this study, tertiary EFL teachers’ questioning practices with low-proficiency learners were mainly shaped by their linguistic limitations, psychological support and syllabus constraints, though some exceptions were also evident, showing teachers’ endeavors to promote low-proficiency learners’ critical thinking.

While teacher questioning is a crucial part of teaching critical thinking, students’ questioning also plays a key role in promoting their critical thinking skills. Accordingly, the findings revealed the teachers' perceptions of their encouragement of students’ questioning, students’ questioning practices, their target audiences, and the frequency of their questioning. The teachers unevenly encouraged learners to ask critical thinking questions. While many of them motivated learners to ask meaningful, challenging, and critical-thinking questions, four of them invited only non-critical-thinking questions. Particularly, they did not expect critical thinking questions from low-proficiency learners and vice versa. Regarding his encouragement of students’ critical-thinking questions, Clent Moss said, “I request that they ask me different questions that promote their higher-order thinking abilities.” Contrarily, Farhan mentioned, “I don't think we practice student questioning much with the basic level of proficiency [*sic*].” This reflects the teacher’s underdeveloped PCK of student -centered instruction that relies on the readymade proficiency to make the class interactive rather than using interaction to promote proficiency and cognitive growth.

In accordance with this, tertiary EFL teachers in this study believed that students regularly asked both their teachers and their peers critical-thinking questions. However,

a few of them (Borsha and Clent Moss) believed that students regularly asked critical thinking questions only to the teachers. Moreover, a few of them (Farhan) thought that the learners infrequently asked critical thinking questions to their teachers and peers. Concerning students' frequent critical thinking questioning, Tahmina said, "Usually in my classroom, it's more of a free classroom, like they are free to ask anybody any questions, me a question, until and unless it's not hampering their activity." On the other hand, Sony uttered, "Rather, they interact with me frequently." This shows the teacher's pedagogical practices facilitate hierarchical questioning, indicating a teacher-centered classroom and limited PCK of student-centered instruction. Additionally, Farhan stated, "Most often they don't ask questions to me or their peers [*sic*]." This indicates the prioritization of lecture-based instruction, revealing a substantial gap between critical thinking goals and teachers' PCK and pedagogical practices.

In this regard, the findings revealed several reasons why students ask teachers questions. Tertiary EFL teachers in this study reported that students frequently asked them questions because the teachers inspired them. In addition, they viewed students' questioning them as a tool for facilitating teaching and learning. In contrast, a few of them (Farhan) reported that students did not consistently ask them critical thinking questions because students lacked engagement in class. Since they were not aware of the classroom dynamics, they often failed to make meaningful contributions by asking meaningful questions. However, a few of them (Farhan) were unsure about the factors behind learners' infrequent questions to them. Emphasizing teacher motivation as a key reason, Sony mentioned:

> I try to create that environment in my class. From the very beginning of any course, I become friendly with them. They also become very friendly with me. I try to continue this sort of relationship with my students so that they can easily interact with me and tell me their problems, likes, dislikes, and whatever.

This reflects the teacher's aptitude and confidence to socialize in the classroom for ensuring better learning outcomes. This also implies that the teacher's pedagogical approach is grounded in relational PCK, which emphasizes affective rapport-building as a key condition to promote linguistic proficiency and facilitate cognitive engagement. Additionally, Rochester opined, "It's helpful for me as well because when students are asking me questions, I know what they're missing. So, I can give feedback

on that thing." This indicates the teacher's limited PCK as classroom interaction is used merely as a diagnostic tool rather than an approach to enhance cognitive engagement. However, Farhan elaborated:

> I don't know why they don't often ask questions. Maybe they understand everything. Maybe they understand nothing. If it is only about proficiency, they don't ask. I don't know.

This may indicate the teacher's possible lack of motivation and interest in taking effective measures to increase social engagement in the class, suggesting a lack of both theoretical and experiential PCK.

Likewise, the results demonstrated some factors behind the students' questions for their peers. A couple of tertiary EFL teachers (Tahmina and Zonoon) in this study believed that students frequently asked peers questions because the teachers encouraged peer questioning. Since they encouraged peer questioning during collaborative activities, learners asked one another questions. Moreover, they asked their peers questions to confirm their own responses. However, the students infrequently asked their peers questions outside collaborative activities, as most faculty members strictly discouraged the practice during class. Even a few tertiary EFL teachers (Munalisa) in this study allowed peer questioning only outside the class, limiting the opportunity to practice it inside the classroom. Underscoring the teachers' encouragement for peer questioning, Zonoon said:

> They do ask their peers questions during the class. Sometimes they discuss and ask. Actually, I tell them to ask because when I tell them that "You are your own teacher, and if you do not understand fast, talk to your friends."

This suggests the teacher's view of peer questioning as a parallel evaluative approach that heightens cognitive engagement by reducing anxiety. Hence, this also suggests a PCK that values student questioning for its potential to promote intellectual depth. Similarly, Rahin articulated, "They ask questions to their peers when they have a focus-group discussion, or they do some assignments, or some group presentations, or projects. During those times, they always have interactive cues in the classes." This shows that teachers' pedagogical practices are fundamentally teacher-centered, where

students are allowed to ask their peers questions only during collaborative activities, rather than as a pedagogical norm for all times. Therefore, this indicates the teacher's PCK is dominated by traditional hierarchical patterns. In contrast, Sony mentioned, "They are not allowed to do peer discussion inside the class, particularly if I do not allow it. So, therefore, the scope is very limited." This also shows a teacher-dominated pedagogical practice and PCK that undermine the incorporation and the value of social learning opportunities inside the classroom. In addition, tertiary EFL teachers in this study faced some obstacles in facilitating students' questioning in class. They asserted that, since class sizes were large, giving all students, or at least the maximum number, a chance to ask questions was not possible. Moreover, the class time was insufficient to allow the students to ask many questions.

c. Knowledge of Dealing with Students' Sensitive and Personal Judgements

Critical dialogues involving both teachers and learners can lead to sensitive discussions and prompt learners to assert their personal opinions. Hence, the findings underscore that in this study, tertiary EFL teachers' practices of dealing with students' sensitive and personal judgments, including the determining factors and teaching strategies. Many teachers reported that students were restricted from expressing such opinions in class and suggested that learners discuss them outside class. They employed strategies such as avoiding questions, topics, and responses that could trigger such views. Specifically, religious and gender topics were avoided due to the conservative social orientations in Bangladesh. Sometimes, they permitted expressions that only complied with the favorable classroom practices. In contrast, two of them limitedly allowed learners to voice their sensitive and personal thoughts, maintaining a boundary, while several tertiary EFL teachers in this study also believed they let students freely express their thoughts. Sometimes they deliberately encouraged learners to discuss controversial and sensitive topics. Focusing on the restrictions of the practices, Zonoon said, "I do not allow them much to share their personal or sensitive judgments because we are in a very sensitive environment." This shows that teachers' pedagogical practices and experiential PCK are constrained by contextual realities. In addition, Sony explained:

> Whatever discussion the class brings, I try to mitigate those things in such a way that it diminishes further clashes among them. I welcome them on a certain level, not in that much-liberated way… If things become like this, that a particular student has so many things to say on a particular thing, I say I'll listen to you, but personally, not inside the class. And I invite them to my office room and I listen to them.

This suggests that the teacher's PCK and intention to integrate critical thinking inside the classroom are significantly shaped by maintaining social harmony and managing tensions. On the contrary, Tahmina claimed:

> In my classroom, there can be students who believe in the caliphate state. There might be students who think that, no, this is not necessary. Bangladesh might be a Muslim-majority country, but not everybody is a Muslim, and that's not fair to everyone. That's very open to it. I would rather encourage them to not just challenge me, but to challenge each other. For example, I ask them to have a debate on that topic.

This reflects that the teacher has a sound PCK is presenting controversial and sensitive issues in a manageable way that encourages HOT by masking potential conflicts of interest.

Accordingly, the analysis revealed that in this study, several factors influenced tertiary EFL teachers' decisions to restrict or partially allow sensitive and personal views in classrooms. A couple of teachers (Borsha and Progga) wanted to protect learners' feelings and emotions from being hurt by these practices, which could lead to broader social consequences. On the other hand, two of them (Sony and Zonoon) believed that practicing critical and controversial dialogues inside the classroom could threaten their job security. They are aware of previous similar incidents and Bangladeshi socio-political realities that motivated them to avoid permitting sensitive and personal thoughts in the class. Borsha underlined the necessity to safeguard learners' emotions, saying, "They are open to share some personal thoughts or judgments or opinions, but not to that extent that will hamper someone's emotions or some society, the community's emotions [*sic*]." Though this shows the teacher's

emotional intelligence, it reflects their limited PCK of managing controversial issues. However, Sony voiced the issue of job insecurity:

> Think about the socio-political structure of our country, a kind of unstable situation. Still, it is unstable, you know what I mean. Therefore, most of the teachers always try to be very secure in terms of anything. They always try to avoid the unwelcome situation between him and his institute or his students. I mean, they want to stay apart from questions. Therefore, they converse with students at that level of interaction so that any oddities do not occur [*sic*].

This shows that the teacher's struggles to balance the tension between pedagogical goals to promote HOT and the possibility of job insecurity shape their pedagogical decision-making that prioritizes personal benefits over learning outcomes.

On the contrary, while students expressed sensitive personal opinions in class, the teachers employed strategies to ensure a safe classroom environment. Their strategies included preventive measures, emotional responsiveness, fostering critical-thinking dispositions, innovative teaching, and enhancing learners' awareness. A few teachers (Borsha, Rahin, and Rochester) prevented the expression of sensitive, personal judgments by avoiding such topics and taking precautionary measures. They avoided these by either changing the discussion topic or inviting students to a private conversation outside the classroom. Additionally, some teachers (Rahin and Rochester) used precautionary tools, such as trigger warnings, color symbols and prompts to disguise sensitivity. Regarding the preventive strategy, Borsha articulated, "I try to avoid answering those questions that will lead them to hamper their emotions. That's how I try to balance things….I try to divert those issues when I sense that the situation is going out of control." Likewise, Rahin highlighted the use of disclaimers:

> While I'm teaching communication, in many cases, there are some sensitive issues that might require a trigger warning. For example, when I talk about consent, there are things that are quite sensitive among the young adults that might trigger them to misunderstand things or interpret things differently. So, I give them a lot of trigger warnings.

This statement reflects the teacher's underlying concern for saving personal and institutional stability from possible conflicts leads to an avoidance strategy.

On the other hand, four tertiary EFL teachers (Borsha, Farhan Munalisa and Rahin) in this study displayed emotional sensitivity while trying to maintain classroom safety. They not only showed empathy toward the learners through their smiles and respect but also created a supportive classroom environment by setting clear expectations, encouraging them to keep the discussion in class, and intervening when necessary. They also encouraged critical thinking dispositions among learners, stimulating them to think objectively and remain open-minded during discussions on sensitive topics. Similarly, they tried to promote learners' awareness and sensitivity to critical dialogue as a measure to ensure classroom safety. Furthermore, they used innovative teaching, like gamification, to lighten the seriousness of such discussions. Munalisa emphasized maintaining respect for the learners, saying:

> I cannot hurt their very young sentiments. I have to be quite careful how I trade these talents…. So, I had to respectfully convey that for them to accept that it was okay that we were not chosen exclusively. So, I think that's how I try to be humane and someone who understands.

This shows that the teacher's pedagogical decisions are guided by their strong sense of empathy and emotional responsibilities, reflecting a PCK that enables them to carefully negotiate between fostering critical thinking reflection and protecting learners' emotional well-being. Likewise, Rahin mentioned, "I try to maintain a safe classroom environment for sharing personal or different sensitive judgments by establishing clear expectations of mutual respect and open-mindedness." This reflects the teacher's pedagogical awareness and decision-making that facilitates learners' critical thinking.

Therefore, the analysis discloses that in this study, Bangladeshi tertiary EFL teachers' unsymmetrical yet gradually evolving knowledge of questioning for teaching critical thinking. Their perceived practices, such as admittance of the value of questioning, using varied questioning to promote critical thinking, sensitivity in questioning the low-proficiency learners, awareness about learners' goals and needs, encouraging learners' questioning and expressions of personal thoughts and utilizing strategies to maintain classroom well-being, reflect their adaptability, responsiveness

and growing and sophisticated PCK and pedagogical capabilities. On the contrary, using questions for pragmatic benefits, restricting students' questions and opinions, and holding a negative attitude toward low-proficiency learners' ability to master critical thinking suggest their limited PCK in adopting strategies to foster critical thinking within the class. In particular, their inconsistent efforts to engage learners in questioning and responding indicate that their PCK of questioning for critical thinking is highly fragmented at the individual level. Their concern about students' emotional safety and job security, and their avoidance measures, indicate that their PCK is constrained by socio-cultural and political restlessness. In short, their PCK of questioning and the subsequent practices are deeply rooted in and shaped by their contextual experiences. Overall, the findings reveal a textured but incomplete development of PCK. Hence, they need to improve their professionalism to employ questioning practices to achieve critical thinking educational goals and develop a more systematic, theoretically informed PCK.

4.3.2.3 Knowledge of Social Learning Activities for Teaching Critical Thinking

Social learning or collaborative activities significantly influence learners' critical thinking development in the EFL context. Accordingly, tertiary EFL teachers' perceptions of collaborative activities constitute an important part of their PCK of critical thinking. The findings on their knowledge of social learning activities for promoting critical thinking embody their perceptions of the roles of collaborative activities in teaching critical thinking and their perceived practices.

Findings revealed teachers' mixed impressions of the role of social learning activities in developing critical thinking in tertiary EFL learners. They considered that collaborative activities had both direct and indirect positive effects on the development of critical thinking. They believed that collaborative discussions enhanced the learners' analytical and negotiation abilities as they grew stronger psychological compatibilities. Particularly, they asserted that idea and opinion sharing during collaborative activities promoted critical thinking through the interaction among the learners' different background knowledge, values, interpretations, evaluations and even their personal and social factors. They further believed that collaborative activities strengthen learners' critical thinking, as they allow them to receive a higher level of knowledge input that learners need to process with HOTs. Additionally, they thought that these activities

simultaneously contribute to learners' language and critical thinking development. In this regard, a few teachers (Munalisa) considered that, when regulated and monitored by teachers, collaborative activities help improve critical thinking. Regarding the effect of collaborative discussions, Rahin said, "Each group can give only one answer, and there is only one correct answer behind these tendencies…negotiations help them to further their collective reasoning, which helps them to make a decision together through their analytical and evaluative competence." In addition, highlighting the interplay of group members' inputs, Sony clarified:

> I believe that this collaborative venture helps them become critical because while they work in a group, an individual will have different perspectives on a particular point. Also, he or she will face some more peers about their notions, ideas, activities, and engagement [*sic*]. So, all these things will help him or her become critical.

This statement reveals the teacher's nuanced understanding of the role of collaborative learning in developing critical thinking. Likewise, Rochester uttered, "When they are engaged in collaborative activities, they're having new inputs. They add those inputs to their cognition. It's like that i+1. So, you have I, and you are getting a new input that is i+1. So, it helps you think critically in a better way." This shows that the teacher's PCK of critical thinking is informed by a constructivist understanding of learning, where intellectual growth is facilitated through exposure to new and diverse perspectives.

However, one tertiary EFL teacher (Munalisa) in this study argued that collaborative activities have a limited impact on critical thinking, as individual understanding of the content is the first requirement for effectively engaging in the discussion. Moreover, they contended that collaborative activities cannot develop all group members' critical thinking because they do not put equal effort into the collective task. Taking this further, they claimed that the success of collaborative activities in enhancing learners' critical thinking depended on the group formation. If the group contains only low-proficiency learners, this will cause low motivation to think critically. Furthermore, critical thinking is an indirect learning outcome of these activities in the EFL classes. As a result, the impact may not always be substantial. Underscoring the unequal members' contribution, Munalisa stated:

> Sometimes in group work, what happens is that one person is doing the heavy lifting, and the other people are not very active. If that's the case, then I don't know how much it helps the other participants. Maybe it helps the one who's working.

This shows the teacher's critical evaluative views of collaborative activities, highlighting their awareness of the limitations of group work in promoting critical thinking. Moreover, Rochester claimed:

> It depends on the group formation. If you have all the low-level students in a group, they'll never speak up. So, you need to have some low-level and some good students in the group so that the better ones would guide them, and the low-level students would feel comfortable. So, the formation of a group is important.

This reveals the teacher's strategic understanding of group dynamics, reflecting a PCK that recognizes the necessity to carefully distribute knowledge, confidence and proficiency within a group.

Along with this, the analysis identified that in this study, tertiary EFL teachers incorporate various collaborative activities into their classes. They employed many interaction-based collaborative activities, such as collaborative speaking, collaborative discussions, and opinion formation and debate. In particular, they used varied role-play activities, such as drama presentations and interviews. Moreover, they used collaborative presentations, poster presentations, assignments and task-based collaborative activities, like case studies and project-based activities. In addition, the collaborative activities included both group and pair work. On the contrary, one tertiary EFL teacher in this study reported using more individual than collaborative tasks, while a few reported a greater frequency of students' collaboration outside the classroom. Rochester stressed the use of group discussions:

> The most common thing that I use in my class is group discussion. Then, I give one clue to this group and the other clue to the other group. So, they come out with which one is missing in there. When they talk among themselves, they come out with those ideas [*sic*].

This reveals that the teacher values social learning in promoting critical thinking, implying a well-informed PCK. In addition, Clent Moss said, “If I have the time, at times, I also encourage students to engage in debates.” This implies the teacher’s reliance on individual activities as a pedagogical tool to implement the syllabus rather than a PCK that facilitates the development of critical thinking through structured and sustained dialogue engagement. However, Zonoon articulated, “Sometimes, we have debates, though very rarely….The number of Individual activities is higher than group activities.” This suggests the teacher's conformity toward teacher-centered instructional design, reflecting a dated PCK that hinders the opportunities to promote critical thinking through social learning.

Subsequently, the data revealed that tertiary EFL teachers in this study incorporated collaborative activities into their classes to both facilitate diverse aspects of learners’ critical thinking and to ensure various pedagogical support. They reported that the purposes of incorporating these activities included fostering learners’ knowledge-construction abilities, promoting active learning, and enhancing the quality of their thinking. Specifically, they aimed to advance learners' HOTs, like inferencing, decision-making, negotiation and reasoning. Additionally, they wanted to heighten learners’ tolerance, a critical thinking disposition. Rochester underlined the reason as developing knowledge construction, saying:

> At the university level, I believe learning does not happen only from teaching. It's constructing knowledge. The teacher shares his ideas, and the students participate and share their ideas. So, together, it's a co-construction of knowledge. So, if they don't collaborate among themselves, the students are not going to learn.

This reflects the teacher’s pedagogical decisions for incorporating collaborative activities are shaped by their constructivist and dialogic PCK. In addition, Rahin said:

> I think that it will help them to exchange different ideas, and they will learn to negotiate. For example, in group work, there might be some conflict of interest that they learn through different forms of negotiations…they have to give proper logic and argumentative stances behind why they are choosing those categories of tendencies.

This shows that the teacher recognizes the strategic value of collaborative learning in promoting HOT, reflecting their sound PCK. On a separate note, Farhan articulated, “They don't like somebody, but still, they are together trying to achieve the same goal. So, it helps them learn how to work in a team. It helps them to be tolerant because they have to tolerate others.” This captures the teacher’s understanding of the importance of collaborative learning in promoting critical thinking dispositions.

In contrast, six tertiary EFL teachers (Clent Moss, Farhan, Munalisa, Progga, Sony, and Sumaiya) in this study employed collaborative activities as pedagogical tools. They intended to promote learners’ LOTs and basic learning outcomes, like increased knowledge of the content and language proficiency, through collaborative debate and reading activities. Using these activities as a supporting vehicle to classroom management, they wanted to improve classroom interactions between the learners and teachers and encourage learners to participate in tasks. In addition, they tried to reduce their teaching stress through peer evaluation and save teaching time. Moreover, they used these activities as a source of socio-emotional support for learners, strengthening their mutual bonds and teamwork competencies. They aimed to boost learners’ confidence and motivation and reduce shyness. While these are true, four tertiary EFL teachers in this study even pointed out that developing critical thinking was not their main concern behind using collaborative activities.

Progga emphasized the utilization of these activities for knowledge development, saying, “My goal for using collaborative activities is to enhance their knowledge….The students are from different types of backgrounds here, and they have varied knowledge and experiences in their lives. By sharing, they learn. They can broaden their knowledge.” This indicates the teacher’s limited PCK in employing collaborative learning for knowledge construction rather than knowledge transmission. She further added:

> What I have seen is that by getting involved in group activities, some students who were shy or afraid of speaking in English in front of others gain a kind of confidence. So, at the end of the semester, I see that they develop the ability to talk with others and talk in front of the class.

This reflects the teacher’s undeveloped PCK regarding collaborative activities which is mainly used as an affective supportive tool rather than a pedagogical strategy

to foster critical thinking. Furthermore, Sumaiya mentioned, “It minimizes the time of my class a bit.” This also reveals the teacher’s lack of PCK in utilizing collaborative activities to teach critical thinking. In line with this, highlighting the lack of interest in critical thinking, Zonoon said, “I did not particularly think about critical thinking while using collaborative activities in my class... I think about communication. I think about collaboration and interaction.” This shows a lack of PCK which targets to use collaborative activities for linguistic outcomes instead of promoting critical thinking.

However, tertiary EFL teachers in this study also reported that they faced several challenges in incorporating collaborative activities. They asserted that the curriculum and the lesson plans were not designed to integrate collaborative activities. Moreover, they faced time constraints to incorporate these.

On the whole, the analysis presents an intricate picture of Bangladeshi tertiary EFL teachers’ PCK of social learning activities for teaching critical thinking. Their recognition of the role of collaborative activities in critical thinking development and conscious efforts to integrate a wide range of collaborative activities to elevate learners’ critical thinking and HOTs demonstrate a well-grounded understanding of social learning activities for critical thinking. Nevertheless, their simultaneous purposes, unrelated to critical thinking development, indicate that they lack the standardized PCK for designing, organizing, and implementing them to consistently foster critical thinking. Furthermore, their perceptions of contextual barriers and curricular rigidity suggest limited innovation in transforming collaborative activities into context-responsive approaches to teach critical thinking, despite institutional hindrances. In essence, the findings signal a partially developed yet auspicious PCK that requires professional and systematic grooming.

4.3.2.4 Knowledge of ICT for Critical Thinking Instructions

Information and Communication Technology (ICT) is one of the most viable means of promoting critical thinking in the EFL context. Teachers’ strong PCK of ICT can empower them to devise context-oriented, technology-enhanced tasks to actively develop learners’ critical thinking. Findings regarding their knowledge of ICT encompass their perceptions of the role of ICT in critical thinking, teaching and their applications in class.

The majority of tertiary EFL teachers in this study believed that ICT integration into the EFL classroom is an inevitable educational requirement in the context of the 4th industrial revolution. It is not only a global reality but also a pervasive part of the lives of the learners and the teachers. Avoiding it means skipping the opportunity to engage learners' technological aptitudes for language and critical thinking development. Regarding this, Sony posited:

> This ICT-based activity is very important for modern dwellers because things are space-based and on the internet spaces. So, by sitting here, I can get connected with so many resource persons around the world, which is the blessing of ICT [*sic*]. So, why should I restrict my students? I'll encourage them to get into the ICT world so that they can explore more and enrich themselves more.

This indicates that the teacher is well aware of the pervasive influence of ICT on modern life, reflecting a PCK that recognizes the role of ICT in developing language development. Additionally, Munalisa said:

> I don't think a university-level education can be complete without incorporating ICT. I make sure that students are smart enough to navigate ICT tools by themselves, as just independent people, because they have to use them not only when they have entered their job sectors, but also as individuals at this age [*sic*].

This suggests the teacher's broader PCK that considers ICT as a tool for enhancing student autonomy, which is also required for critical thinking development. In this regard, ten of the twelve tertiary EFL teachers in this study believed that ICT significantly contributes to the development of their students' critical thinking. They considered that ICT facilitates critical thinking by helping them form opinions through the analysis and verification of information from the internet. Particularly, they held that accessing online content while preparing a given task, such as presentations, helps them practice knowledge contextualization and constructions, leading to critical thinking development. In addition, they contended that it enhances the learners' critical thinking by exposing them to different viewpoints on the same concept, allowing them to critically analyze and evaluate them. Specifically, they argued that authentic online

content, such as social media and topic-specific website content, helps develop their critical thinking by activating their schemata and providing access to topics of personal interest. Most importantly, they indicated that it equips learners, especially the shy and introverted, with the motivation and confidence to engage in critical thinking by facilitating self-directed learning opportunities. Regarding knowledge constructions, Progga articulated:

> When they make presentations, they make slides and search for materials on the internet. So, they are exposed to different types of context and materials. They have to read a lot to find out perfect material for them, and then they have to tailor them according to their needs. They have to localize it or do some editing. By doing this, they develop a kind of critical thinking.

This reflects that the teacher understands how ICT functions to engage learners in information evaluation and transformation, unveiling a nuanced PCK of ICT for developing critical thinking. In addition, Rahin stated, "ICT integration greatly enhances critical thinking by providing different interactive and engaging platforms for students to analyze and evaluate the digital content that I show them. They can participate in online discussions." This shows the teacher's integrative PCK, where technology is used for both content delivery and intentionally connected to critical thinking development. Moreover, Clent Moss uttered:

> Just before showing them the reading text, you can show something related to that text on YouTube or any other ICT platform to engage their schemata, to engage their critical thinking first and relate it to their personal experience, and then dive into the reading comprehension text.

This shows the teacher's cross-sectional PCK that combines offline and online content to scaffold thinking and comprehension.

In connection with this, the findings disclosed varying degrees of ICT integration in tertiary EFL teachers' classes. While two of them actively incorporated it, others did so infrequently. In this regard, Zonoon asserted, "Of course, I do use ICT in my class," while Borsha stated, "I try to use ICT in class."

Correspondingly, the results disclosed a broad spectrum of ICT resources, including infrastructure and online resources, that tertiary EFL teachers in this study employed in their classrooms. They used laptops, computers, mobile phones, pre-installed multimedia projectors and mobile phones as part of the ICT infrastructure. Moreover, they utilized online conferencing tools, for example, Google Meet and Zoom Classroom and digital collaboration tools, like Padlet. Additionally, they maneuvered Learning Management Systems (LMS), for instance Google Search, Google Classroom and Moodle, and cloud storage, like email and Google Drive. Furthermore, they integrated social media platforms such as TikTok, WhatsApp, YouTube, and blogs. Thus, they frequently used the internet connection in their classes. Regarding ICT infrastructure, Zonoon stated, "I do use ICT in my class. We have a multimedia projector in the class….I allow my students to use their smart devices with internet and Wi-Fi connection." This shows the teacher's updated and context-responsive PCK in integrating the most accessible modern technologies, like smartphones. Likewise, Sony mentioned, "I use technological tools like laptops, computers."

In relation to this, the analysis found that tertiary EFL educators used ICT for two distinct purposes: promoting critical thinking and other unrelated advantages. Two tertiary EFL teachers in this study reported integrating ICT to advance learners' multi-perspective thinking and evaluative skills. In addition, one of them wanted to promote learners' truth-seeking dispositions. A few tertiary EFL teachers in this study wanted to equip the learners with the language support needed to effectively express and exchange their critical thoughts, concurrently improving both language and critical thinking. Concerning the implementation of ICT for developing critical thinking, Tahmina explained:

> When I think of using ICT in my class, I think of developing their critical thinking skills because it is more important to have their thought process refined before their language skills are refined… Even if they want to communicate, they can communicate in their mother tongue. But if they do not know what to communicate, they will not be able to communicate in any language, let alone English or any other foreign language.

This suggests that developing PCK as linguistic and critical thinking development are placed sequentially in an ICT-mediated pedagogical approach where

it can target a simultaneous process, making learning more integrated. She also added, "Many false news and rumors are going around. So, I teach my students how to get good sources, what the differences are between good internet sources and bad internet sources. That develops their critical thinking." This reveals the teacher's well-informed PCK as ICT integration is targeted to enhance evaluative thinking. On the other hand, focusing on the simultaneous development of language proficiency and critical thinking, Raihan said:

> I use ICT in my class for developing both English language and critical thinking skills. We have to take a listening test, and to take a listening test, we must have some ICT in the class, like audio and a computer in the class. I show a video or audio and ask them to write any specific questions. To write the answers to those questions, they have to think that can develop their critical thinking.

This shows the teacher's nuanced and strong PCK of ICT in developing language and critical thinking simultaneously, making the instruction a more integrative one. In addition, Sumaiya opined:

> "Go for it on Google or any other authentic sources that you can access. Just grab that information and the vocabulary from there."…They give their opinion by using the language and the words they gather from Google or any other sources.

This suggests the teacher's views of ICT as a linguistic facilitator to express critical ideas, reflecting an integrative PCK for teaching language through ICT support for encouraging critical thinking.

Contrarily, many of them integrated ICT into their classes for several other intentions. One of these motives was to support learners' emotional and functional needs. They aimed to engage learners in classroom dynamics by utilizing their natural and strong attraction to technologies. In addition, they planned to enhance the learners' general knowledge, language proficiency and technological skills. They also used it for various pedagogical benefits, including easing teaching by saving their time and energy in class and simplifying the lessons, facilitating collaboration and communicating with learners outside class and enabling distant teaching. On the contrary, four tertiary EFL

teachers in this study reported that critical thinking was not the primary motive for integrating ICT, though it emerged as a by-product. Underscoring ICT as a means to address students' needs, Rochester opined, "If they don't find anything interesting, they are not going to learn anything from that. So, I believe if I integrate ICT into my class, they'll find it interesting. And once they find it interesting, they'll learn something." While using ICT to enhance learners' engagement, this perspective may have overlooked the intentional and systematic integration of ICT to transform learners' engagement into meaningful critical thinking opportunities. Zonoon stressed the improvement of knowledge through ICT integration, saying:

> They go searching for different word meanings and concepts. For example, in one class, I talked about the hypodermic needle theory and magic bullet theory. So, whatever I learned, it comes automatically. A lot of diverse discussions sometimes happen, and they check it and find it out on the internet.

This suggests an assumption that exposure to multiple perspectives and ideas automatically fosters critical thinking. Such a view undermines the need for systematic instructional design to engage with critically and evaluate online content and construct new knowledge. On a different note, Farhan stated, "The basic reason for using online content is that we don't get time to create those by ourselves. That's why we feel that if we outsource from some other sources, that will save our time and energy." This highlights a utilitarian perspective of ICT as it is used primarily to handle practical constraints. Hence, pedagogical decisions about ICT integration are mainly driven by instructional efficiency rather than critical thinking goals. Moreover, Borsha held:

> I think I consciously use ICT for language skills instead of developing critical thinking because the main goals or objectives of the language course are language skills. That's why I tend to use ICT more for language skills proficiency and other things rather than for developing critical thinking.

This shows that ICT is viewed as the enabler of the curriculum, which emphasizes linguistic goals rather than developing critical thinking, reflecting a limitation in PCK.

Taken together, the above findings suggest both prospects and paradoxes of teachers' PCK of ICT integration. Their use of diverse technological tools, purposefully aligned with critical thinking goals, demonstrates their strong PCK of ICT for critical thinking. On the contrary, their intentions to promote engagement, confidence and perception of critical thinking as an incidental outcome indicate a limited and inconsistently developed PCK, uncovering a gap between their recognition of its potential to promote critical thinking and perceived practices. In summary, the findings imply an emerging yet underdeveloped PCK of ICT.

4.3.2.5 Knowledge of Teaching Instructions for Critical Thinking

The instructional practices in critical thinking integrated into the EFL classroom shift from traditional teacher-centered, transmissive practices to student-centered and facilitative practices. It also demands that teachers behave in a flexible and supportive manner to foster open-mindedness for spontaneous thought generation. Teachers' knowledge of these instructional features is fundamental to the development of critical thinking. Hence, the findings identified tertiary EFL teachers' perceptions of student-centered instructions, teaching approaches and feedback styles and their perceived instructional practices.

a. Perception of Pedagogical Practices to Foster Critical Thinking

The analysis unfolded tertiary EFL teachers' mixed feelings about the importance of more student talk as a general classroom practice. Many tertiary EFL teachers (Farhan, Progga, Rahin, Rochester, and Tahmina) in this study considered that facilitating more student talk would help improve learners' critical thinking. However, many of them (Clent Moss, Farhan, Munalisa, Progga, Sumaiya, Tahmina, Zonoon) considered it important for enhancing their speaking proficiency. In addition, three of them (Munalisa, Progga and Rochester) believed that more student talk was necessary to ensure affective well-being, such as increasing learners' confidence and motivation, autonomous learning and classroom engagement. Moreover, a few (Rochester) considered it an essential tool to navigate learners' needs for effective instruction. Highlighting the importance of more student talk for critical thinking, Munalisa said:

> I usually ask them questions whenever possible because I try to talk as little as possible in class, and I let them have the floor as much as possible. Although it's not 80-20, it's probably more 50-50. But I think that's a good start in terms of how critical thinking should be fostered.

This reflects the teacher's constructivist understanding of learning, indicating a PCK that recognizes the role of student talk and student-centeredness in fostering critical thinking in EFL classrooms. In contrast, Farhan submitted:

> I think students should talk more than their teacher because they have to use English if they want to develop their efficiency. I mean, by the teacher's talk, they are not going to develop their efficiency. I believe in learning English by using English.

This indicates a limited PCK as student-centredness is valued for language proficiency development, while potentially overlooking the opportunities to use classroom discourse to foster deeper reasoning and judgements. Moreover, Progga stated, "If a teacher talks most of the time, the student will listen and then forget. But if I give them the opportunity to talk in class, most of the time, it will make them engaged in the learning."

Correspondingly, findings uncovered that in this study, tertiary EFL teachers' mixed perceptions about accommodating more student talk. While one of them (Sumaiya) believed that this depended on the topic and subject taught, others (Borsha and Sony) advocated for a balanced talk between teachers and learners. For instance, Sumaiya opined:

> It depends on the topic of that particular class. If the topic allows the students to talk more, then of course the teacher will allow the students to talk more...every subject is not the same. In some subjects, students should be allowed to talk more, and in some subjects, the teacher will talk more.

This indicates the view that equates student talk with student participation, making student talk a retention mechanism rather than an opportunity to foster critical thinking through well-designed instructions. Such a view also reflects a limited PCK.

Additionally, Borsha said, “I don't think the students should talk more than the teacher. I think there must be a balance maintained.” This shows a more skeptical view of student-centeredness which can suggest an inclination to traditional teacher-centered and lecture-based classroom dynamics.

However, tertiary EFL teachers in this study had contradictory perceptions of the role of more student talk in developing critical thinking. While many teachers thought it facilitated critical thinking, others believed it restricted critical thinking due to the threat to classroom organization. Regarding critical thinking facilitation, Progga explained:

> I think students talking more is helpful for developing their critical thinking because they have the opportunity to practice here more [*sic*]. So, when they are practicing or maybe they are told to do something on their own, they have to use their critical thinking skills and then they create something.

This indicates the teacher’s awareness of the role of student-centeredness in developing critical thinking, suggesting a constructivist PCK. On the other hand, Borsha claimed:

> If students talk more than their teacher, it kind of undermines the critical thinking development because if everyone is talking in the room, if everyone is taking the lead, then no one is listening. So, students’ talking more than their teacher does not influence their critical thinking development.

This suggests the belief that critical thinking can be better developed under guided and controlled instructions, reflecting an inclination to teacher-centered and lecture-based instructional approaches.

Similarly, their perceptions of the suitable patterns of student talk for developing critical thinking were diverse. Three educators believed that merely talking more is ineffective if it doesn’t mean anything. Hence, teachers should guide students' greater practice of student talk to engage in meaningful discussions. In contrast, a few tertiary EFL teachers in this study believed that critical thinking develops when the teacher talks more than the students as they steer the discussion purposefully. Stressing the priority of meaningful student talk over more student talk, Raihan said, “If they talk

more, that doesn't mean they are a critical thinker, or they develop critical thinking. They have to talk reasonably; they have to answer a question with logic. In this way, they can develop their critical thinking." This shows that the teacher values the quality of cognitive contribution over mere participation through student-centeredness, which reflects a nuanced PCK of critical thinking. Additionally, Sony articulated, "It is fruitful if the students are instructed up to a certain level."

On a different note, Munalisa claimed the superior influence of more teacher talk, saying, "If teachers talk, that's not hindering their critical thinking, in my opinion. If the teacher is asking more referential questions and not display questions, yes-no questions as much, then that helps students in their critical thinking." This shows the teacher's understanding of their role as a cognitive mediator, yet this undermines the contribution of student dialogue, suggesting an inclination to a traditional instructional approach and limited PCK to use student-centeredness for developing critical thinking

In line with these, the results demonstrated that in this study, tertiary EFL teachers' varied understandings of their role in a student-centered classroom. The majority of them almost unanimously admitted that teachers should be the facilitators of the thinking process by setting learning goals, providing learning content and guiding learners to take on learning responsibilities. By contrast, two of them contended that teachers should serve as role models for language learning, demonstrating speaking skills. Progga articulated their role as a facilitator, "Teachers should talk, but not that much. The teacher will facilitate their learning and when needed, the teacher will give them feedback or give input." This suggests the teacher's constructivist view of instruction.

On the other hand, Sony pointed out, "While a teacher is providing his or her lecture, the student is so much conscious about what he or she is saying. This very concentration will facilitate imitation among the students." Though this reflects the teacher's understanding of instructional modeling of critical thinking, it also overpowers student-centered knowledge construction by reducing students to mere imitators. Therefore, this suggests a lack of PCK in guiding student talk for critical thinking development

Accordingly, the findings showed varying practices of student-centeredness in their classes. Four tertiary EFL teachers in this study reported maintaining student-centered classes in which students had the freedom to choose their own speaking topics and group members without interruption. In contrast, a few of them reported rarely

practicing this due to curricular barriers. Focusing on the practice of student autonomy as student-centeredness, Sumaiya maintained, “When I am giving a topic to my students, I tell them to choose a group or group members. I don't select the group members for themselves.” This suggests a minimal exercise of student autonomy within instructional design, reflecting a limited PCK where student-centeredness is restricted to organizational choices.

Likewise, Progga said, “I ask them whether they like a particular material or what type of material or topic they want. In my speaking and writing classes, I always ask for my students’ preferences.” This reflects participatory autonomy rather than cognitive engagement, suggesting a PCK misaligns with critical thinking pedagogy and goals.

Contrarily, Zonoon stated, “I think students should talk more, but should is a distant thing. They actually do not do that. I would rather say we are still in the age of more teacher talk and less student talk.” This shows the teacher’s awareness of the gap between pedagogical ideals and classroom realities, suggesting their reflective and evaluative PCK of critical thinking. In summary, the results presented tertiary EFL teachers’ diversified stances on and perceived practices of student-centered instruction.

In addition to teachers’ understanding of student-centered instructions, the analysis recognized that in this study, tertiary EFL teachers’ perceptions of effective and ineffective instructional and feedback approaches for promoting critical thinking. There were conflicting views on functional teaching approaches. Three of them (Borsha, Progga and Raihan) conceived that unstructured and adaptable approaches better fit the purpose. However, the majority of them regarded structured, fixed plans as effective in facilitating critical thinking. They argued that the integrated critical-thinking syllabus and lesson plans served as a guide for systematically implementing critical-thinking activities and evaluating learning outcomes. Regarding the appropriateness of a flexible approach, Progga said, “I believe a flexible approach is appropriate for teaching critical thinking.” This shows the teacher’s understanding of the constructivist approach to teaching for critical thinking development. In contrast, Borsha clarified:

> When they have a syllabus or structured instruction, they get a kind of idea to do how things are working, how things will be done. For example, there are paragraph writing or summarizing, and reading comprehension [*sic*]. These

> things obviously help them to develop their critical thinking and language skills. So obviously, these structured instructions or these types of things help them.

While this shows the teacher's view of organized instruction as effective for developing critical thinking, this also reduces the opportunity to go beyond the prescribed syllabus to explore deeper cognitive engagement.

Likewise, ineffectiveness of structured and rigid teaching approaches was unanimously admitted. They emphasized the uncertainty of classroom dynamics that required going beyond the plans. Moreover, they considered that the existing curriculum and course plans limitedly facilitated critical thinking. Hence, Sony stated:

> I suppose not to be too structured in case of facilitating critical thinking, because the very term criticality breaks the boundary, breaks the circle [*sic*]…. Structured approaches or instructions cannot always create critical thinking because the structure or the very framing creates boundaries between things. And criticality is a very groundbreaking approach.

This suggests the teacher's flexibility and open-mindedness that are required to promote critical thinking. Additionally, Borsha said, "The way we follow the curriculum helps the students to think critically, but it also limits them to a certain level." This shows a pragmatic and context-sensitive understanding of the dual roles of the existing curriculum in developing critical thinking.

Their views on effective feedback styles were divergent, too. In most tertiary EFL teachers' views in this study, continuous and regular feedback was important and appropriate for promoting critical thinking. They believed that such feedback worked as a monitoring tool, keeping the student motivated to achieve the goals. Conversely, several tertiary EFL teachers (Farhan, Sumaiya, Rahin, Raihan, and Rochester) in this study considered unstructured, context-responsive feedback helpful, while one thought that too much feedback was detrimental to students' autonomy and the development of critical thinking. Rahin emphasized the usefulness of regular feedback, saying, "Regular feedback, that is, the teachers' and peers' feedback, is very essential because it can clearly set different learning expectations. Also, it will provide the students with opportunities for their continuous improvement." This reflects the teacher's moderately

developed PCK, as learning is ensured with consistent external guidance rather than allowing autonomous cognitive engagement. In a like manner, Rochester said:

> They have to get feedback from us. Otherwise, they won't know whether they are right or wrong. And if they don't know whether they are right or wrong, they cannot proceed to the next stage. Hence, continuous feedback is one of the most important things in developing critical thinking.

This also suggests a limited PCK of critical thinking as learning is significantly tied to external input from the teacher. However, Sumaiya articulated, "Students can have various types of performances. So, pre-planned feedback is not useful. The feedback should be provided according to the students' performances and opinions." This reflects a flexible and responsive understanding of feedback and the teacher's awareness of constructivist teaching for developing critical thinking. In a nutshell, the findings revealed teachers' differing perspectives on the appropriate teaching and feedback approaches for developing learners' critical thinking.

b. Perceived Instructional Practices

The analysis found that in this study, tertiary EFL teachers' instructional practices varied. The majority of tertiary EFL teachers in this study reported combining flexibility and structure in their instructional practices. They indicated that classroom realities, including unpredictable teaching and learning needs, may not always be addressed by preset lectures, requiring going beyond the lesson and course plans. Additionally, they admitted they had to operate within the established structure to maintain clear, uniform learning goals. However, only a few faculty members (Farhan, Progga, and Rochester) reported using only flexible teaching styles. Concerning the combination of flexible and structured practices, Tahmina stated:

> I use a mixed approach, because teaching theories are there, and they are research, experimented and proven works. But the theories lack the real-life context of my classroom. So, the theories were probably made with a different context. Even if it was made in Bangladesh, it was not made in my section. It was not made in my classroom. The theories helped me to structure everything

> and teach them everything. However, the theories do not tell me how to teach a student who thinks that saying the N word is not wrong. So that is where I use my mixed approach.

This reveals the teacher's context-responsive understanding of a suitable instructional approach that emphasizes the implementation of theories based on the complexities of reality. Particularly, the combination of flexibility and structure indicates that pedagogical decisions are made though reflective and evaluative understanding of learners' needs, cultural sensitivities and emergent teaching challenges. Contrarily, Farhan said, "I follow a flexible approach to instruction." This reflects a situated and experience-driven understanding of instructional approaches that emphasizes flexibility as a core principle.

Correspondingly, the study also revealed their different motives behind these instructional practices. The reasons for following a flexible teaching style included their intention to promote learners' critical thinking, provide affective and pedagogical support, enhance language proficiency and address classroom uncertainties. They believed that this style would enhance learners' reasoning skills and self-directed learning abilities, leading to critical thinking development. Moreover, they intended to improve learners' confidence and interest in class, while one aimed to adopt this style to address students' diverse learning needs. In contrast, a few educators used this approach to develop learners' language skills. However, several tertiary EFL teachers in this study reported using a combined approach to implement the OBE curriculum, with a focus on developing critical thinking. Interestingly, a few tertiary EFL teachers in this study admitted that they employed the Grammar Translation Approach in their classrooms to facilitate low-proficiency learners' critical thinking. Regarding the reasons behind following a flexible approach, Sony said:

> I break the boundaries while lecturing because it aligns with the idea of initiating criticality. Learners must break the boundary to rediscover things, to become critical and explorative. For the new thing, a new chance, they need to break the boundary.

This shows the teacher's awareness of the role and mechanism of pedagogical practices in guiding learners to engage in meaning-making processes, implying a

transformative PCK of critical thinking. Contrarily, Progga submitted, “My primary intention in using flexible instruction is not critical thinking, but it is one of them. But my primary intention is to make them engaged. If they are engaged, they will learn.” This indicates the teacher’s limited interest and PCK in fostering learners’ critical thinking, as it is considered an indirect and non-prioritized goal of the instructional practices. Furthermore, underscoring the motive behind a combined teaching practice, Rahin mentioned:

> We are moving from a curriculum-based approach to a more outcome-based one. So, everything in structure is breaking down, and those structures are becoming flexible. So, flexibility must also have a kind of structure where you can switch between different topics, materials or contexts. But the core infrastructure should be the same, and the motive or the outcome of this infrastructure should be well-aligned. Otherwise, the entire education system or the curriculum system might break down. So, it is very important to understand how and to what level that flexibility should be implemented.

This reflects that the teacher is well aware of the current global shift in educational goals that requires a balance between structured and flexible instructional approaches. This also implies that the teacher holds an experience-driven and policy-sensitive PCK of critical thinking.

In addition, tertiary EFL teachers in this study possessed multifaceted perceptions of the influences of their teaching practices on learners’ critical thinking. They believed that their flexible teaching styles promoted learners’ critical thinking by motivating them to ask questions, promoting open-mindedness and tolerance. Similarly, tertiary EFL teachers in this study considered their structured instructions strengthened learners’ critical thinking by enhancing their logical and organized, clear and precise thinking. Likewise, they felt that combined instructions promoted critical thinking by reducing learners’ anxiety and enabling them to respond logically. On the contrary, a few tertiary EFL teachers in this study were unsure about the impact of their teaching on the learners’ critical thinking, as they believed only learners could feel that. Concerning the impact of flexible instructions, Farhan asserted:

> I allowed my student to speak her mind, though I knew that the topic was controversial because in the same class, many students were in modern dress. I knew that some students may not like this topic. However, I allowed the topic so that they can also relate to why I am allowing this sensitive topic. This can be an example of how it helps.

This shows the teacher's confidence and evaluation of their instructional practices, indicating their openness and flexibility enable learners to interpret, justify, negotiate and thus engage in critical thinking. Moreover, Borsha mentioned, "The structured instruction style helps them to process their thoughts that are more logical or coherent." While this view of the effectiveness of structured instruction indicates the development of critical thinking disposition, systematicity and organized reasoning, it equates clarity of thought to critical thinking. This also indicates a limited reflectivity and PCK in identifying the learning outcome of instructional practices. Contrarily, Munalisa said, "The students can answer the impact of my teaching style on their critical thinking. I don't know really how it impacts the students' critical thinking." This suggests the teacher's limited PCK of reflecting and evaluating the outcomes of instructional practices.

While reporting these, tertiary EFL teachers in this study voiced several obstacles to adopting a teaching style suitable for promoting critical thinking. One of the main complaints was that, under pressure to complete the syllabus within a specific time, they could not be flexible in class. They further reported that completing the syllabus is crucial to ensure students' performance in the exam, which they cannot jeopardize to become flexible. In this regard, Raihan stated, "I follow a structured approach, like a lesson plan, which is helpful to cover all of the things that are in the syllabus. If we cannot cover the syllabus, the result will be affected." This reflects the teacher's complete submission to curriculum and assessment demands, suggesting an obstructed PCK that is shaped by accountability pressures and an indifference to upgrading their knowledge and practices to promote critical thinking. Similarly, Rochester mentioned, "When you are teaching in a trimester, there is a time constraint. It's very, very hectic because you are just under pressure to just go through the text, complete the whole syllabus." This also reflects the teacher's internalization of efficiency-driven educational expectations that constrain their experiential PCK of critical thinking.

Although restricted by the system, tertiary EFL teachers in this study had the freedom to use materials that they felt were appropriate for their classes. They also had the autonomy to adopt tasks beyond the plans. However, they did not use this opportunity to teach critical thinking, but rather to develop language proficiency and learners' engagement in class. Regarding their autonomy, Rochester admitted:

> At university, we do have some freedom to adopt our materials, especially in terms of listening and speaking. In the case of reading and writing, we also have the same flexibility. We can choose to have our reading comprehension and writing topics based on the students' interests.

This reflects the teacher's adherence to conventional EFL educational goals, limiting the opportunity to enhance their pedagogical innovativeness and adaptability to the demands of 21st-century education. However, Clent Moss stated, "The students' efficiency is much more important than just the class materials." This suggests that the teacher's critical thinking PCK is shaped and limited by their proficiency-driven expectations.

Altogether, the analysis presents a potential yet underdeveloped PCK among Bangladeshi tertiary EFL teachers in this study. Their recognition of the value of student-centeredness, meaningful student talk, flexible instruction, and purposeful feedback reflects a theoretically grounded conceptual awareness of conducive instructional practices. Conversely, their mixed perceptions, contested priorities, and inclination to promote language proficiency and engagement not only reveal an inconsistent practice on the backdrop of the OBE curriculum but also a substantial limitation of PCK in realizing instructional approaches that consistently and deliberately cultivate critical thinking. Moreover, the lack of autonomy and rigid curricular barriers to the application of flexible teaching approaches suggest that PCK remains constricted, preventing them from exploring pedagogical possibilities and expanding their capacity to deliver innovative, critical-thinking-oriented instruction. In summary, the findings disclose a partially developed PCK shaped by conceptual, contextual and practical limitations.

4.3.2.6 Problems and Prospects

The study found that tertiary EFL teachers experienced multifaceted problems in teaching critical thinking. These problems emerged from three major sources: the institutional system, teachers and students. However, these reports were accompanied by relevant positive perceptions and recommendations.

a. Challenges and Opportunities Related to Key Educational Stakeholders

Findings revealed that the highest number of challenges were posed by the institutional systems. These included negligence toward critical thinking in the policy, systematic and structural barriers, and deficiencies in institutional support. Critical thinking was one of the least emphasized points across every aspect of the university policy, from overall educational goals to curricula, including the EFL curriculum, course design, material development, and teaching. It was not indicated as a teaching and learning goal in any of these phases. Particularly, the absence of critical thinking as an explicit objective in the EFL curriculum and the mandate to use the EFL textbooks restrained them from incorporating critical thinking into their classes. Regarding the negligence of critical thinking, Progga opined, “There are policy-level problems also. I haven't seen that teaching critical thinking is the primary focus in any institution. That's why many teachers are not that much aware of promoting critical thinking.” This suggests the teacher’s belief in herself as the agent to implement institutional expectations that guide the development of PCK to promote proficiency rather than critical thinking. This also shows a gap between institutional rhetoric about quality education and the policy-driven realities of EFL instruction. Similarly, Farhan stated:

> In many courses, we engage them in critical thinking-related activities, but our primary goal, or even the university's primary goal, is mostly to develop their proficiency. But still, we do, since it is in our syllabus, we follow a course outline, and we include, but not as a core focus. We mostly aim to develop their English proficiency; we do not focus on critical thinking as a core skill.

Both these statements reflect institutional prioritization of language proficiency over critical thinking, where the curriculum and the institutional expectations implicitly shape teaching practices. Moreover, Zonoon uttered, “More or less, 90% of universities have the compiled book form. So, materials are taken from different places, and the compilation work is created... We cannot go beyond that.” This indicates a structural rigidity in institutional material implementation, where reliance on the prescribed textbook reduced teaching autonomy and enforced a constrained knowledge system.

More importantly, the Institutional Quality Assurance Cells (IQACs) were failing to monitor and ensure the accurate implementation of the OBE curriculum, which aimed to foster learners’ critical thinking and train teachers to build knowledge and skills. The problem was further complicated by the lack of financial, resource and operational support from the institutions. They specified that they did not receive adequate funding for training and higher education and adequate access to the latest journals and teaching materials. Consequently, the universities lacked skilled faculty members who could successfully integrate critical thinking into EFL lessons. Moreover, the dearth of coordination between the English department and other departments created understanding gaps, leading to the absence of critical thinking in those curricula. Highlighting the problems with IQAC, Zonoon said:

> UGC has established Institutional Quality Assurance Cells in most of the universities in Bangladesh, and they are working on lower-order thinking skills and higher-order thinking skills. But the reality is still, lower-order thinking skills, understanding, and remembering are mostly applied.

This highlights a significant disconnect between national policy expectations and the practical institutional support available to faculty members.. He further added:

> As a university teacher, we don’t get the training facilities as the bureaucrats or most BCS cadres get. Teachers need both local and foreign exposures of teaching, training, education, cultural knowledge, ideas about norms and etiquette and of course, an MPhil and PhD degree. But these are not easy achieving [*sic*] as most of the teachers need to grab them with their own funds or self-funds, that make this process a golden deer that is really very difficult to achieve for many.

This suggests that institutional efforts for teacher professional development remain superficial and unevenly distributed across sectors, where universities tend to preserve existing teaching practices rather than enabling meaningful academic development. In addition, Rahin maintained, "We do have limited resources…they do not have access to global materials, like journal pages, because access is not provided by most of the universities in Bangladesh." This suggests that the institutional environment does not sufficiently support continuous professional development, which leads to the stagnation of teaching practices, as educators have to rely on outdated resources that limit PCK for pedagogical innovation.

Apart from these, there were several structural barriers. Three tertiary EFL educators (Clent Moss, Munalisa and Rochester) reported time constraints as a major impediment to integrating critical thinking. The class time was inadequate to integrate critical thinking and problem-solving activities. Large class size was another barrier to teaching critical thinking. In this regard, Farhan illustrated:

> If there are 50 students in a one-hour class, I can't allow many to perform in my class. Even if I spend two classes, maybe I can allow only half of them to perform. So how will they develop? Even whether they are developing or not, I have to measure that [*sic*]. I have to evaluate. I have to assess their ability. How will I assess if the class size is very huge? I cannot assess all of them.

This underscores that pedagogical aspirations for developing critical thinking are constrained by the gap between institutional ideologies and classroom realities. Consequently, teachers may struggle to balance coverage, participation and evaluation, which ultimately limits deep learning experiences and reduces the opportunities to develop critical thinking.

On top of this, the dominance of the traditional education system was considered a core issue in teaching critical thinking. Many tertiary EFL teachers in this study still practiced teacher-centered instruction, limiting the scope to promote critical thinking. Moreover, the exam-centric educational system restricted all stakeholders from focusing on critical thinking development. Concerning teachers' traditional practices, Rahin stated:

> The way most of the students have been taught depends solely on rote memorization. This is a basic problem as our education system depends on rote memorization rather than different like thinking independently. So, this dependence is more or less prominent even today.

This reflects a deep-rooted epistemological rigidity within the Bangladeshi educational system, where knowledge transmission has become so fixed that they continue to determine instructional decisions and practices that reinforce LOT rather than encouraging knowledge construction or HOTs. Additionally, Raihan said:

> We have the bindings of exams, like assignments, the midterm, and the final examinations, within just three months… In this type of pressure, they cannot think that much critically in the context of exam-oriented learning activities [*sic*]. They just feel a burden, like we have to attend the exam, we have to get the marks, we have to get a higher CGPA.

This points to the limitation of the university education system, which prioritizes measurable performances over meaningful intellectual growth, thereby continuing to shape instructional practices in ways that favor assessment outcomes rather than developing critical thinking.

However, tertiary EFL teachers in this study reported several institutional prospects of teaching critical thinking. While two of them (Borsha and Sumaiya) believed there were no restrictions from the university authorities, only one (Tahmina) indicated receiving the necessary support to teach critical thinking. Moreover, one of them claimed that critical thinking was included in the curriculum. Regarding these, Sumaiya said, “In my 14 years of career, I can tell that in these two universities, there are no problems if I want to teach critical thinking.” This reveals a supportive institutional culture that enables teachers to exercise pedagogical autonomy and integrate critical thinking into their instructional practices. Likewise, Tahmina mentioned, “The university I am in does not have any problems of that sort because it's giving me flexibility about how I will teach my syllabus or use my lesson plan, or materials.” This suggests that in some institutions, teaching practices are supported by a culture of trust, where teachers enjoy high level of autonomy. Such conditions can strengthen instructional confidence and enable more adaptive and context-responsive

pedagogy that fosters deeper learning. Overall, tertiary EFL teachers in this study faced both significant institutional barriers and some facilitating factors shaping their teaching for critical thinking.

Apart from issues related to institutional system-related issues, tertiary EFL teachers in this study had their own problems, including pedagogical unpreparedness and psychological and affective factors. Many tertiary EFL teachers in this study reported lacking the knowledge and skills to teach critical thinking. They pointed out that they had not received any training or education to develop those skills. In particular, they needed the knowledge and skills to teach critical thinking innovatively. Moreover, they lacked understanding of the students' backgrounds. Regarding this, Raihan said:

> Early career teachers do not have any training which is the main thing to conduct a class on critical thinking or any other thing. The teachers should be trained for at least one month or more because without training, we cannot teach properly.

This not only reflects the limitations of teacher education but also policymakers' indifference in building teacher competence to integrate critical thinking, leading to limited PCK of novice teachers. Similarly, Progga said, "We don't have that much training on how to promote or integrate critical thinking in our teaching materials or our in-classroom activities." This suggests a gap between the teacher's expected PCK and the institutional support for professional development. Accordingly, Borsha said, "Their lack of ideas or innovation in teaching style is another issue."

In addition, Clent Moss mentioned, "Many of the master's courses focus on how we can develop our skills to synthesize and analyze. Many of our research courses primarily focus on that detail and this course analysis also helps quite a lot." This shows that while teaching education programs develop the critical thinking of the prospective EFL teacher, these fail to equip them with the strategies and context-sensitive understanding of developing EFL learners' critical thinking.

Tertiary EFL teachers in this study also faced many psychological barriers. They not only lacked motivation and confidence to teach critical thinking but also possessed negative attitudes toward it. Specifically, many tertiary EFL teachers in this study faced difficulties maintaining an open mind to groundbreaking and progressive ideas. Moreover, a few of them (Raihan) believed that teachers treated the learners with judgmental behaviors. Additionally, they considered teaching critical thinking an added

responsibility and a source of stress for them. As a result, they wanted to stick to the traditional lecture and memorization-based teaching system. Highlighting these psychological and affective factors, Borsha said, “The whole situation makes them demotivated or discouraged from introducing those particular things. So that's how the critical thinking development gets hampered or left behind.” This suggests that teachers’ low motivation hampers their PCK development and integration of critical thinking. Likewise, Farhan posited, “Sometimes teachers are not confident enough.” Moreover, Sumaiya mentioned:

> Some teachers think that controversial topics should not be discussed in class. It should not be the topic of the presentation. They do not accept those topics in the syllabus. Sometimes I get advice from them not to discuss any controversial issues that can affect someone’s religious views or any political views in my class.

This reflects the teacher’s restrictive psychological orientation, shaped by ideological and cultural constraints that limit their engagement in and development of critical thinking. On a different note, Rochester voiced, “They have to take extra pressure because it's not in the curriculum. I mean, there are enough tasks. You are overburdened with things to do. So, why add another thing?” This reveals an attitudinal barrier shaped by workload pressures, limiting their engagement in theoretical and experiential PCK development. Rahin added, “One of the main problems is that EFL teachers are still following different traditional and outdated teaching approaches.” This indicates a significant gap between the contemporary EFL pedagogical demands and the teachers’ PCK development.

Nevertheless, tertiary EFL teachers in this study were optimistic regarding Bangladeshi tertiary EFL teachers’ readiness for critical thinking. Three of the tertiary EFL teachers in this study believed that Bangladeshi tertiary EFL teachers possessed the competence, such as knowledge and skills to teach critical thinking. They considered themselves competent, believing they received proper education and pursued self-directed professional development, thereby enhancing relevant knowledge and skills. Moreover, they believed they had psychological preparedness, including open-mindedness and the ability to maintain a safe classroom environment for critical thinking. Furthermore, they had a supportive attitude towards the learners. Clent Moss

highlighted this point, saying, “I think Bangladeshi tertiary EFL teachers have enough skills and knowledge to teach critical thinking….I think their experiences as students help them.” This reflects the teacher’s self-efficacy in teaching critical thinking. This also underscores the value of the teacher’s own critical thinking experiences in their pedagogical awareness and strengthens their capacity to design instructions that support critical thinking development

Similarly, Munalisa submitted, “I think after COVID-19, many of us are quite familiar with blended teaching. Blended teaching has been incorporated in all the universities, even in Bangladesh.” This suggests the teacher’s technological self-efficacy. This also indicates the growing potential to promote critical thinking through blended learning as this facilitates the teacher with opportunities to incorporate diverse resources, encourage student autonomy and create interactive learning environments. Sumaiya added, “In my institution, most of the teachers have sound knowledge about teaching critical thinking.” This shows collective professional confidence within the institution that can enable teachers to design and implement more critical thinking-oriented instructional practices. In addition, Tahmina said:

> If they're struggling, I tell my other students, " Please cheer your friend up, clap. Tell him yes, you can do it.” I do those sorts of things for my students to get a bit more encouragement….And I tell them, “There are no wrong answers. Anything you say will be right.”

This shows the teacher’s flexibility and positivity toward the learners, which can help them to foster greater learner autonomy and engage learners in low anxiety and high cognitive processes.

In summary, tertiary EFL teachers in this study encountered several teacher-related problems, including pedagogical unpreparedness, lack of training, psychological barriers, and reliance on traditional teaching methods, which impeded their ability to teach critical thinking. Nevertheless, some teachers were optimistic about their own and their colleagues' confidence, knowledge and skills and mental orientation to teach critical thinking.

In line with these, the analysis identified student-related issues, including cognitive limitations and psychological constraints. Tertiary EFL teachers in this study believed that their students had cognitive limitations, as they were unable to think

critically or answer critical-thinking questions. Specifically, because the majority of learners come from Bengali-medium educational backgrounds where critical thinking and problem-solving were not taught, they struggled to think critically after entering university. These learners are believed to achieve the ability to think critically after becoming senior students. In this regard, their English medium counterparts were believed to be better performers. Additionally, they lacked the knowledge of the world, leading to a dearth of schemata which was compounded by their limited English vocabulary, making it difficult for the teachers to integrate critical thinking. Concerning their minimal ability to think critically, Munalisa posited, "One of the student-related issues is that they are not familiar with critical thinking. If you just tell them to think critically about this, they won't understand. You have to break it down into several easily understood words." This reflects the learners' cognitive unpreparedness that constrains teachers to engage them in HOT processes, limiting instructions to linguistic development alone. Tahmina added:

> The second problem is with the teacher-centric school and college-level classrooms. When they have teacher-centric classrooms, they automatically are being prevented from thinking critically because the teacher is doing everything on their behalf, or rather imposing the fact that the teacher is always right [*sic*]. So, they do not even know that they need to think critically.

This suggests the fossilization of the learner's thought processes due to prolonged exposure to teacher-centered instructions, which limit tertiary EFL teachers' opportunities to foster independent thinking, questioning and active participation. Moreover, Farhan stated, "Another thing is they don't have background knowledge." This reveals a culture of superficial connection with the broader knowledge body and reality in both pre-university and university education that leaves learners with a void of background knowledge to actively construct meaning and hinders teachers from fostering critical thinking.

In addition, the students had several psychological constraints, including a lack of motivation and negative emotions and attitudes. Tertiary EFL teachers in this study reported that these students significantly lacked interest in improving their critical thinking. They were very reluctant to ask questions and take any risks. They were accustomed to spoon-fed education and wanted to remain teacher-dependent, which

made them passive learners and hindered the development of critical thinking. Additionally, they generally lacked interest in continuous learning and were irregular in their attendance, disrupting the flow of gradual development. Furthermore, their negative emotions significantly hindered the teaching and learning of critical thinking. Most of them refrained from expressing their critical thoughts out of fear of being judged by their peers and teachers. Low-proficiency and introverted students felt shy and reluctant to speak up in class. On top of that, their negative attitudes were a significant obstacle to teaching critical thinking. The majority of them had a conservative mentality, which restricted them from thinking outside the box. They held exam- and result-centric educational aims and were mostly ignorant of their responsibility toward national development goals as graduates. Consequently, they did not engage in efforts to improve their critical thinking. Borsha underscored their motivational issue, saying, "The most common issues are that they are used to spoon feeding, or they are used to the traditional methods that are followed from decade to decade." This highlights the persistent and deep-rooted attitudinal barriers among the learners that hinder cognitively demanding and independent thinking task integration.

Farhan included, "They are habituated to what they are comfortable with. They don't like challenging tasks….They don't want complexity. They would rather want to do something simple, and they want to have a very comfortable life." This reflects the leaner's lack of motivation to engage in cognitively demanding tasks that guide institutional goals, teachers' pedagogical decisions and PCK development. In addition, Raihan opined, "They are reluctant to learn. If the students are reluctant, we cannot make them learn something." This reveals that learners' willingness shape pedagogical decisions to integrate student-centered and critical thinking.

Concerning students' negative emotions, Progga submitted, "They don't want to say it, and sometimes they think about how their peers will react or respond. That's why they don't want to share." This implies that learners' emotional struggle influences instructional decisions and practices. On a deeper level, this suggests an underlying classroom culture of evaluation. She also added, "Another thing is some students feel discouraged because they are introverted. So even if maybe that student can think critically, they don't want to say because they don't feel confident about their thinking or their opinion." This suggests students' lack of aptitude in communication, which hinders their active engagement in critical thinking, thereby limiting instructional goals to linguistic proficiency. With respect to students' negative attitudes, Sony stated:

> Some students who are very sensitive from the religious perspective and maintain their religious oaths and doctrines [*sic*]. In such cases, it becomes very troublesome for us to conduct many more teaching-learning instructional things. Sometimes, they don't speak much. Sometimes, they do not unveil their thinking. I mean, they're thinking, but they're not expressing due to their social or religious bindings. So, things happen like that, and those are the actual problems, because those things and values make them so reluctant.

This indicates a tension between the personal belief system and classroom discourse. The problem traces back to the socio-cultural orientation of the learners that significantly determines teachers' decisions to integrate critical thinking into their classes. Moreover, Rochester said:

> Their purpose is just to pass the course. Now, when their purpose is just to pass the course, it's very difficult to teach them critical thinking, because they don't even bother about critical thinking. All they need is just pass the course in terms of grammar and EFL [*sic*]. So, that's a bit difficult.

This reveals the impact of washback on the students' willingness to participate in classroom critical thinking discourses. This further implies a misalignment between the transformative goals of higher educational institutions and the emphasis on measurable academic outcomes. Nonetheless, three tertiary EFL teachers in this study held positive attitudes toward their students. They believed that it was easy for them to teach critical thinking because the Gen Z students were naturally interested in exploring ideas. They were the ones who broke boundaries and thought critically.

b. Societal Problems

The findings revealed that the problems of teaching critical thinking in the Bangladeshi tertiary context extended beyond the institutional territory. It was identified as a socio-culturally rooted issue in Bangladesh. The general perception was that critical thinking was not a socially practiced skill here. Society views young people

who question elders or existing ideas and concepts as bad practice. It is also restrictive of any new ideas and practices. In this regard, Tahmina stated:

> Many misconceptions and stereotypes exist. It's very easy to manipulate children. Even undergraduate students are children. They probably grew up in an environment where a lot of wrong, conservative extremist thinking was going on. …Since childhood, these students think that they should not think critically. As a result, they do not know how to think critically, and they think that, oh, this guy or this woman is a huge scholar. Whatever they say, I need to follow that. When that happens, that thinking gets fossilized in them. It's very hard for a teacher to make them come out of it.

This shows the influence of socio-cultural conditioning on the learner's thinking habits that limit the teachers' efforts to foster learner autonomy and critical inquiry. Similarly, Borsha said:

> Society is immune to something new or immune to thinking critically. …For example, we want to stick to our traditions or things we used to do from decade to decade. That's why the new ideas or ideals for improving critical development are not getting to everybody at the Bangladeshi undergraduate level.

This reveals how socio-cultural conservatism and expectations limit educational goals, thereby constraining EFL teachers' efforts to incorporate innovative and critical thinking-oriented pedagogies.

c. Teachers' Problem-solving Approaches and Recommendations

The results found tertiary EFL teachers' diverse endeavors to mitigate these problems. Primarily, tertiary EFL teachers in this study took many administrative steps to address the problems of teaching critical thinking. These measures included informing the authorities of the problems and sharing their opinions on developing suitable materials to promote critical thinking. They also asked the authorities to reduce class size and their workload so they could effectively implement active learning to promote critical thinking. Moreover, they asked the authority for funding to generate

and provide the necessary materials. Additionally, they implemented pedagogical measures, such as using self-made, context-responsive materials to address these problems. Furthermore, some steps were student-centric, like enhancing students' engagement for critical thinking and inviting their evaluation of the materials for further refinement to ensure critical thinking development. Finally, some measures were teacher-centric, for example, resolving controversies over the use of controversial materials among teachers through mutual discussion and applying instinctive efforts to solve these problems. Underscoring the administrative actions, Farhan said, "If it is from the department's side, we consistently request our authority to reduce the class size….If I want to develop materials, I have to have less teaching load. So, I request them." This reflects the teacher's administrative proactiveness in addressing the systematic barriers to teaching critical thinking. Likewise, Progga stated, "If I work in a team for developing material, I share my own experience or share or express my opinion there." This shows the teacher's collaborative administrative engagement in solving systematic challenges of teaching critical thinking. This approach enables the teacher to negotiate, refine and contextualize resources to foster critical thinking. Concerning pedagogical measures, Borsha admitted, "I try to address these problems….When they are reluctant to explore, I design activities that will compel them to explore. I give them challenges. That's why they will be compelled to solve those challenges or problems." This reflects the teacher's innovativeness and active efforts in pushing learners to go beyond surface-level thinking. However, Munalisa emphasized student-oriented attempts, saying,

> I want to ensure that the material I give, everyone has looked at and read, and the points that I wanted them to grasp, they have grasped it right….The next step would be for me to evaluate what part of those arguments they thought were important and why they thought that was important.

This reveals that the teacher moves beyond assessing content mastery and aims to uncover the learners' underlying evaluative framework. This approach enables the teacher to expose and possibly transform the unexamined assumptions that influence their thinking. In a like manner, Sumaiya stressed teacher-centered initiatives, saying,

> When it is time to have a good conversation or quality time, I approach that teacher and tell him or her that for this reason, I am using the controversial topic in my class. I find each of my colleagues is very understanding [*sic*]. Then they can understand it, and they can address it.

This suggests a professional collaborative approach that creates a safe and supportive environment to enable teachers to safely integrate controversial topics to stimulate discussions, argumentation, and effective thinking among the learners.

Conversely, two tertiary EFL teachers in this study refrained from attempting to solve these problems due to institutional restrictions. They, especially novice teachers, lacked the administrative power and positions to report and handle these problems. On the other hand, three tertiary EFL teachers in this study simply did not try this. With respect to institutional restrictions, Sony mentioned:

> I have not addressed the issue of different syllabi yet because to address it in a proper place, I have to have a certain chance and certain expertise and go to some position and offer my opinion. Maybe after I get the chance to work with the academic committee of the university, I will have the chance to disclose it. Because of not having the opportunity, I couldn't express it to the authority or agency.

This suggests that the bureaucratic institutional system undermines teachers', particularly novices', experiential insights to solve classroom problems. In contrast, Zonoon stated, "I would rather say a passive implementer of the system in many cases, because at the end of the day, when I see that, my responsibility matters the most, my timing matters the most." This reflects an internalization of system-driven roles as the teacher remains passive regarding solving problems of teaching critical thinking. This further suggests a lack of institutional monitoring of classroom realities and teachers' limited evaluative agency to eradicate pedagogical constraints.

Following this, the analysis identified suggestions from tertiary EFL teachers in this study for effectively teaching critical thinking to Bangladeshi undergraduate EFL learners. The teachers recommended reforming university policy to actively support the teaching of critical thinking. They also advised reforming the testing system to include the evaluation of learners' critical thinking. Moreover, they advocated restructuring

teacher education programs to equip prospective teachers with the knowledge and skills to teach critical thinking. Furthermore, they suggested increasing funding for in-service professional development activities, such as training and research. On this point, Progga said, "When I make a lesson plan, if it is in the policy that my priority should be promoting critical thinking in a lesson, I will focus on this." This reveals the teacher's pragmatic suggestion, highlighting that classroom practices are closely tied to explicitly stated institutional policies and their active implementation. This also reflects the teacher's awareness of pedagogical realities. Moreover, Zonoon articulated:

> The students will learn more critical thinking when we change the testing system. How about that? Written exams are fine, but multiple-choice questions should be reduced. Instead of that, students should be given cases and told to write down to solve cases and problems. I mean to introduce Project-Based Learning and Task-Based Learning, where students will be given more thought-provoking questions.

This reflects the teacher's understanding of the solution to the problem from a fundamental pragmatic perspective. Since exam-centeredness dominates the whole education system, including teaching and learning motivation and practices, the reformulation of assessment goals and approaches will not only influence the instructional practices but also compel authorities to rethink the policies. In addition, Sony maintained, "Since this is a very flourishing platform, I mean, it can be taken as a basic thing in teacher education." This shows the teacher's awareness of preparing prospective teachers through updated teacher education programs that will equip them to effectively integrate critical thinking into their classes.

Overall, the above findings demonstrate that Bangladeshi tertiary EFL teachers operate within a complex context in which interlocking institutional, pedagogical, student-related, teacher-related, and societal factors concurrently control and shape their critical thinking instruction. These findings clearly signal the limited PCK of the teachers, as they had minimal opportunities for competency development, and contextual barriers hindered their ability to connect their CK of critical thinking to pedagogically effective approaches and context-responsive decisions. In short, their PCK critical thinking was curbed by the interplay of these multifaceted challenges.

4.4 Findings on RQ 3: To What Extent Do Critical Thinking Knowledge, Motivation and Practices of Bangladeshi Tertiary EFL Teachers Correlate?

The quantitative phase also investigated *RQ 3: To what extent do critical thinking knowledge, motivation, and practices of Bangladeshi tertiary EFL teachers correlate?* RQ3 was explored using the three hypotheses. Hence, the findings of the hypotheses are presented below:

4.4.1 Hypothesis 1: H0: There is No Relationship between Critical Thinking Knowledge and the Motivation of Bangladeshi Tertiary EFL Teachers.

To test the relationship between tertiary EFL teachers' critical thinking knowledge and motivation, a Pearson correlation test was conducted. The correlation findings are presented in Table 4.3.

Table 4.3
Correlation between Tertiary EFL Teachers' Knowledge of and Motivation to Teach Critical Thinking

		Knowledge	**Motivation**
Knowledge	Pearson Correlation	1	.291**
	Sig. (2-tailed)		.000
	N	140	140
Motivation	Pearson Correlation	.291**	1
	Sig. (2-tailed)	.000	
	N	140	140
**. Correlation is significant at the 0.01 level (2-tailed).			

Table 4.3 shows the correlation between Bangladeshi tertiary EFL teachers' knowledge of and motivation to teach critical thinking. The analysis revealed a weak positive ($r = .291$) but statistically significant ($p = .000 < .01$) correlation between these two variables. Therefore, the null hypothesis (H0), stating that there is no relationship between their knowledge of and motivation to teach critical thinking, is rejected. The

findings indicate that Bangladeshi tertiary EFL teachers' motivation to teach critical thinking is influenced by social, institutional, and personal factors.

4.4.2 Hypothesis 2: H0: There is No Relationship between Critical Thinking Motivation and Practices of Bangladeshi Tertiary EFL Teachers.

To test Hypothesis 2, a Pearson correlation was run. The findings of the analysis are shown in Table 4.4.

Table 4.4
Correlation between Tertiary EFL Teachers' Motivation and Practices of Critical Thinking

		Motivation	Practices
Motivation	Pearson Correlation	1	.495**
	Sig. (2-tailed)		.000
	N	140	140
Practices	Pearson Correlation	.495**	1
	Sig. (2-tailed)	.000	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

According to Table 4.4, Bangladeshi tertiary EFL teachers' motivation to teach and their critical thinking practices are significantly correlated ($p = .000 < .01$). The correlation is moderately positive ($r = .495$). Hence, Hypothesis 2 (H0) is rejected. These findings suggest that motivation is a key component in implementing critical thinking CK and PCK into classroom practices. Teachers with adequate CK and PCK of critical thinking may not practice accordingly if they lack motivation.

4.4.3 Hypothesis 3: H0: There is No Relationship between Critical Thinking Knowledge and Practices of Bangladeshi Tertiary EFL Teachers.

To test the correlation between Bangladeshi tertiary EFL teachers' knowledge and practices of critical thinking, a Pearson correlation test was conducted. The findings are presented in Table 4.5.

Table 4.5

Correlation between Tertiary EFL Teachers' Knowledge and Practices of Critical Thinking

		Knowledge	Practices
Knowledge	Pearson Correlation	1	.513**
	Sig. (2-tailed)		.000
	N	140	140
Practices	Pearson Correlation	.513**	1
	Sig. (2-tailed)	.000	
	N	140	140

**. Correlation is significant at the 0.01 level (2-tailed).

Table 4.5 demonstrates that the correlation between Bangladeshi tertiary EFL teachers' knowledge and practices of critical thinking is moderately positive (r = .513) and statistically significant (p = .000 <.01). As a result, Hypothesis 3 (H0) is rejected. This suggests that tertiary EFL teachers' proper understanding of CK and PCK in critical thinking significantly, but not completely, improves the likelihood of their critical thinking instruction. Other factors, such as training, institutional support, and motivation, also influence their practices.

Overall, the hypotheses under RQ3 suggest that the knowledge, motivation, and practices of critical thinking among tertiary EFL teachers are interrelated, with knowledge and motivation exhibiting a moderate correlation with practices. In addition, knowledge has a moderate correlation with motivation.

4.5 Integrated Findings

The quantitative and qualitative findings were integrated to generate mixed meta-inferences. The findings of RQ 2 and RQ 3 were aligned.

4.5.1 Integrated Findings on RQ 2: What is the Level of Knowledge of Critical Thinking among Bangladeshi Tertiary EFL Teachers?

After reviewing both the statistical results and the thematic analysis, the following themes emerged from the integration of quantitative and qualitative findings on the level of knowledge of critical thinking among Bangladeshi tertiary EFL teachers.

4.5.1.1 Fragmented Knowledge Leading to Weak Motivation

Quantitative and qualitative findings on the relationship between tertiary EFL teachers' knowledge and motivation were triangulated. The integrated findings are presented in Table 4.6.

Table 4.6
Integrated Findings on Tertiary EFL Teachers' Knowledge

Constructs	Quantitative Result	Qualitative Results	Mixed-meta inference
Connection between knowledge and motivation	Tertiary EFL teachers' critical thinking knowledge moderately correlates ($r = .291$, $p = .000 < .01$) with their motivation.	Tertiary EFL teachers demonstrated comprehensive yet irregular and fragmented CK and PCK. They also communicated a broad understanding of the importance of teaching critical thinking, though with uneven focuses. Simultaneously, they expressed a lack of motivation for teaching critical thinking.	**Confirmed** The convergence between quantitative and qualitative findings suggests that Bangladeshi tertiary EFL teachers' moderately developed CK and PCK of critical thinking partially correspond to their critical thinking teaching motivation, which is limited and inconsistent.
Factors influencing motivation	-	Factors like limited focus on critical thinking in universities' policies, IQAC's failure to implement the OBE curriculum, and insufficient teacher training demotivated tertiary EFL teachers. Moreover, limited teacher autonomy and resources for professional development thwart their efforts. In addition, their consideration of teaching critical thinking as a burden and their inclination towards	**Expanded** The moderate correlation between tertiary EFL teachers' knowledge and motivation is extended and clarified by qualitative findings showing that many personal and contextual factors contribute to their

		traditional practices further demotivate them. Besides, students' deficiency in English thwarted their interest in integrating critical thinking into their instruction.	motivation to teach critical thinking.
Motivational stance	-	Tertiary EFL teachers took personalized measures, such as adapting materials and addressing the authorities, to create conditions that help them to engage learners in critical thinking.	**Expanded** The moderate correlation between tertiary EFL teachers' critical thinking knowledge and motivation is expanded and clarified by qualitative evidence on the existence of personalized motivational efforts, though they are limited and inconsistently developed.

Table 4.6 offers the joint display of quantitative and qualitative findings on the role of tertiary EFL teachers' knowledge of critical thinking on their motivation to teach critical thinking and their mixed meta-inferences. Quantitative results show a moderate positive correlation ($r = .291$, $p = .000 < .01$) between tertiary EFL teachers' knowledge of and motivation to teach critical thinking. The correlation is weak but statistically significant.

Qualitative data indicate that tertiary EFL teachers identified critical thinking either as HOT skills or as dispositions and personalized concepts. Similarly, their knowledge of materials, instructional practices and strategies, questioning, student-centeredness, and ICT was comprehensive but unevenly developed. In addition, their perceptions of the importance of teaching critical thinking are broad yet widely varying.

Apart from knowledge, several perceived factors contribute to limited motivation. External factors like the lack of focus on critical thinking in overall university policies and curriculum, the IQAC's failure to perform its duty, limited opportunities for professional development to hone critical thinking CK and PCK, limited autonomy to adjust lesson plans, materials, a lack of teaching skills and students' cognitive and mental incompatibilities demotivate them from systemically and effectively teach critical thinking. Additionally, students' lack of proficiency in English prevented tertiary EFL teachers from incorporating critical thinking into their classes. In terms of intrinsic motivation, tertiary EFL teachers' negative attitudes

toward teaching critical thinking, inclination toward traditional teaching practices, and lack of open-mindedness substantially reduce their motivation to teach critical thinking.

Despite tertiary EFL teachers' limited knowledge and numerous external and internal demotivating factors, they demonstrated their motivational stances for teaching critical thinking through various personalized efforts, such as adapting materials and consulting with authorities, to create conditions that help them engage learners in critical thinking.

The mixed meta-inferences in Table 4.6 include convergence and expansion. The convergence of findings confirms that the critical thinking knowledge of tertiary EFL teachers moderately correlates with their motivation to teach critical thinking, while qualitative evidence clarifies that several personal and contextual factors influence and often limit their motivation. Qualitative expansion further reveals that, although some tertiary EFL teachers demonstrated personalized motivational efforts to teach critical thinking, these efforts are limited and insufficient.

4.5.1.2 Knowledge-guided Teaching Practices

Quantitative and qualitative data on the relationship between tertiary EFL teachers' knowledge and motivation were integrated to draw mixed meta-inferences. The integrated findings are presented in Table 4.7.

Table 4.7

Integrated findings on knowledge-guided teaching practices

Constructs	Quantitative Result	Qualitative Results	Mixed-meta inference
Connection between knowledge and instructional practices	Tertiary EFL teachers' critical thinking knowledge moderately correlates with their instructional practices ($r = .513$, $p = .000 < .01$)	Tertiary EFL teachers possess broad yet underdeveloped PCK regarding materials, instructional approaches, and strategies. They also hold restrictive attitudes toward learner autonomy and critical discussions. Some tertiary EFL teachers have a limited understanding of learners' contexts, leading to inconsistent implementation of CK and PCK. Moreover, their perceived classroom	**Expanded** The moderate positive correlation between tertiary EFL teachers' knowledge and practices is expanded and clarified by qualitative evidence, showing that their underdeveloped knowledge, being moderated by their conservative attitudes to learner autonomy and critical dialogues, and insufficient understanding of

		practices indicate inconsistent implementation of materials, ICT, strategies, instructional approaches and student-centeredness.	the learners' contexts, correlates to inconsistent classroom practices.
Factors influencing instructional practices	-	Tertiary EFL teachers' instructional decisions and practices are driven more by linguistic and teaching-learning issues than by developing students' critical thinking.	**Expanded** The moderate positive correlation between tertiary EFL teachers' knowledge and practices is clarified and expanded by qualitative results, which show that their instructional decisions and practices are primarily intended for linguistic goals and general teaching and learning facilitation.

Table 4.7 offers a joint display of qualitative and quantitative findings on the relationship between tertiary EFL teachers' knowledge and practices and their mixed meta-inferences. Quantitatively, there is a moderately positive correlation between their knowledge and practices ($r = .513$, $p = .000 < .01$).

Qualitatively, tertiary EFL teachers hold broad yet underdeveloped PCK of critical thinking regarding materials, instructional approaches and strategies, restrictive attitudes toward learner autonomy and critical discussions. In addition, their perceived instructional practices of materials, strategies, instructional approaches and student-centeredness are inconsistently aligned with critical thinking goals. In particular, their intentions behind instructional practices are primarily linguistic development and teaching facilitation rather than the development of critical thinking.

The mixed meta-inferences in Table 4.7 involve expansion. The qualitative data explain that tertiary EFL teachers' practices clearly reflect their underdeveloped knowledge, which is inconsistently implemented. Qualitative evidence further clarifies that the relationship between their critical thinking knowledge and practice is influenced by their conservative attitudes toward learner autonomy and critical dialogue, and by their limited understanding of learners' contexts. Likewise, this knowledge-practice relationship is substantially influenced by their prioritization of linguistic goals and teaching-learning concerns over fostering critical thinking.

4.6 Discussion

Teaching critical thinking in the Bangladeshi tertiary EFL context is a complex human experience where teachers' knowledge, motivation and practices are shaped by not only individual choices but also by many contextual factors, including ecological, institutional and socio-cultural constraints and opportunities and personal proactiveness. Though tertiary EFL teachers' collective display of critical thinking knowledge was comprehensive, at the individual level, this knowledge was fragmented and inadequately internalized, which contributed to their weak motivation to teach critical thinking.

Motivation partially mediated the transformation of tertiary EFL teachers' critical thinking knowledge into conducive practices. However, this motivation is often subverted by insufficient institutional focus on critical pedagogy, professional development opportunities, and self-directed professional development endeavors, and limited motivational support, leading to knowledge becoming the key determinant of their pedagogical decisions and practices. Unfortunately, tertiary EFL teachers possess undeveloped knowledge of critical thinking, stemming from outdated teacher education, limited training, and individual professional development efforts. On a broader level, these limitations in their knowledge and practices are attributed to socio-cultural contexts and to an intensely exam-focused, teacher-centered education system. The institutional architectural features, often neglected, also contribute to the materialization of critical pedagogy.

Despite these, tertiary EFL teachers' supportive gestures, ICT integration, and sporadic conducive teaching behaviors reflect the prospect of systematic and effective implementation of critical thinking pedagogy. Thus, tertiary EFL teachers' critical thinking knowledge, motivation and practices are complex context-bound factors in which multiple individual and interconnected contextual and personal forces intersect, interact and condition one another rather than operating independently.

Accordingly, this section presents the interpretation of the study's key qualitative, quantitative, and integrated findings. Simultaneously, it contextualizes these findings by integrating relevant literature. The interpretations and discussion of all the RQs are presented sequentially.

4.6.1 Discussion on RQ1: How Do Bangladeshi Tertiary EFL Teachers Incorporate Critical Thinking into Their Classroom Practices?

RQ 1 has two themes and their sub-themes in the findings. The discussion of these themes and sub-themes involves five dimensions: classroom environment, teachers' behaviors that create a critical thinking environment, teaching strategies for critical thinking, instructional styles and teacher-student interaction. Though RQ 1 has two themes and their sub-themes, the analysis unfolded overlaps across several aspects of perceived practices. These overlaps enabled a clearer understanding of the themes' interconnectedness and a precise, coherent presentation (Braun & Clarke, 2006; Creswell & Poth, 2018).

4.6.1.1 Classroom Environment for Promoting Critical Thinking

Firstly, the findings revealed that most classrooms had limited daylight. This finding contrasts with the proposition that adequate natural light is crucial for creative thinking (Lebasi & Talischi, 2024). Particularly, classrooms with access to natural light enable university learners to perform better academically (Álvarez, 2020). Moreover, natural light in the classroom enhances learners' reading fluency and learning attention (Ahmed et al., 2025; Mott et al., 2012). This divergence reveals a complex environmental issue that affects the appropriateness of the structure. Dhaka, one of the most polluted cities, produces a high amount of dust (Hoque et al., 2025; IQAir, 2025; Rahat et al., 2025), necessitating window closures, which in turn pose structural limitations. The findings extend the understanding of the necessity for environmental structural planning to enhance tertiary learners' critical thinking.

Secondly, a few of the observed classes were interrupted by outside noises. This finding aligns with previous studies in the educational settings in Dhaka. Kaisar et al. (2023) found that classes in Dhaka's schools are severely affected by noise pollution. Moreover, noise pollution significantly affects students' health in Dhaka University (Hossain et al., 2019). Additionally, noise pollution is a great threat to students' attention in Dhaka city (Peash, 2025). These similarities validate the findings regarding the unfavorable sound conditions in tertiary EFL classes that hamper learners' critical thinking development.

However, this finding contradicts the theoretical understanding of the sound environment of educational settings. External noises are detrimental to children's reading attention (Gheller et al., 2023). On the other hand, noise reduction enhances learners' and teachers' attention and perceptions and learning outcomes (Haron et al., 2021; Leinster et al., 2025). This divergence highlights a complex reality that goes beyond the structural features. Since the universities are situated in Dhaka, one of the world's mega-cities, which is expanding continuously, vehicle and construction noise are beyond institutional control and are difficult to avoid completely. Additionally, budgetary constraints and priorities hinder the development of context-sensitive educational buildings. Therefore, the finding substantially contributes to existing literature by revealing a deeper understanding of the context. While the existing literature (Lebasi & Talischi, 2024; Puteh et al., 2015) focuses on the ideal environment for cognitive development, the above findings suggest that the real-world environment, involving urban environmental pressures, significantly regulates the classroom physical environment for teaching and learning critical thinking.

Thirdly, the furniture in all the observed classrooms, including that of the teachers and students, was arranged in a traditional style, with the teachers' desks positioned at the front middle and the students' desks arranged in rows in front of them. These findings conform to previous conclusions. Hossain and Rezwana (2023) found that the seating arrangements in Bangladeshi tertiary ESL classes follow the traditional style. Similarly, English classrooms in Turkish high schools restrict the opportunities for dynamic seating (Yilzid, 2020). Moreover, the seating arrangement in Indian and Sri Lankan universities follows the traditional style (Naveenraj, 2025; Shainy et al., 2020). Therefore, the conformities indicate the validity of findings on the traditional seating arrangements in Bangladeshi tertiary EFL classrooms that limit critical thinking development.

However, this finding conflicts with the previous studies. Lebasi and Talischi (2024) indicate that furniture flexibility is essential for engaging learners in creative thinking. Similarly, Puteh et al. (2015) found that furniture affects both teachers' and learners' comfort levels. Moreover, flexible furniture improves university learners' critical thinking and attention, and reduces stress and anxiety (Harvey & Kenyon, 2013; Pennington & Putman, 2022). This divergence highlights the educational characteristic of Bangladeshi tertiary EFL education, which remains focused on a hierarchical teacher-student relationship. Such classroom arrangements are usually influenced by

traditional norms, large class size and an exam-centered educational system. Therefore, the findings enhance understanding of educational spaces by emphasizing the socio-psychological productivity of educational spaces rather than the effectiveness of physical design in promoting creative and critical thinking.

Fourthly, the findings revealed considerably varying accessibility, ranging from narrow to spacious learning environments. These findings are consistent with previous research. Spacious classrooms facilitate collaborative learning by allowing students to sit in groups through furniture rearrangements and make the class more student-centered (Duncansson, 2014; Zhao, 2024). On the other hand, the narrow spaces between the rows and desks limit the opportunities for social interaction and critical thinking (Henshaw et al., 2011). Particularly, classrooms with limited free spaces beyond the seating arrangements obstruct classroom mobility and limit collaborative learning opportunities. This kind of obstructed classroom space also hinders the development of 21st-century skills among the learners (Folkins et al., 2015). The spacious classrooms reflect the alignment of institutional architecture in universities that are relatively new (built after 2000). This could be due to growing awareness of aligning educational infrastructure with contemporary pedagogical needs. However, the increasing pressure of student enrolments in universities, particularly in public universities, leads to more congested classrooms that were built decades ago without considering the needs of today's learner-centered pedagogies. Thus, the findings enrich the understanding of educational spaces by emphasizing the need for context-sensitive classroom planning that balances classroom student capacity with adequate accessibility and mobility.

Fifthly, though class sizes are generally conducive to promoting critical thinking, this is not consistently ensured, creating conditions that hinder its development. Previous studies (Al-Kindi & Meklahfi, 2017; Mrabti et al., 2023) identified large class sizes as a primary issue in teaching critical thinking. Therefore, conducive class sizes need to be ensured so that tertiary EFL teachers can effectively engage learners in critical thinking. The alignment with previous studies indicates the study's validity. This reflects several institutional issues. Resource limitations, like a limited number of classes and teachers, often restrict optimal class sizes (Cash et al., 2017; Ogunode et al., 2024). Moreover, there may not be strict rules regarding the exact class sizes in universities (Gibbs et al., 2023; Kara et al., 2021). Additionally, nearly a million students passed the Higher Secondary Certificate (HSC) exam in 2025, making

them eligible to enroll in university. However, only half a million available seats in public and private universities lead to overcrowding in the first-year classes (Dhaka Tribune, 2025; New Age Bangladesh, 2025a; New Age Bangladesh, 2025b). Thus, the findings provide empirical evidence of the impact of class sizes on critical thinking development, revealing the similarity of patterns across different geographical contexts, including Bangladesh.

4.6.1.2 Teachers' Behaviors that Create a Critical Thinking Environment

Firstly, the amicable entry of tertiary EFL teachers aligns with previous evidence of teachers greeting learners (Nurpahmi, 2017). These findings align with Portelli's (1994) suggestion for flexible teaching behavior with the students to promote critical thinking. The congruence enhances the generalizability of the findings. Teachers' friendly entrance is a universal pedagogical practice that exists across different educational settings (Cook et al., 2018; Diadori, 2024). Hence, Bangladeshi tertiary EFL teachers practiced this as a widely implemented cultural and professional norm rather than a simple pedagogical technique. This confirms the cross-contextual applicability of existing theories on supportive teaching behaviors for fostering critical thinking.

Secondly, some tertiary EFL teachers demonstrated disrespect and insensitivity towards the learners. This finding aligns with previous claims that Bangladeshi tertiary educators hold humiliating and negative attitudes toward their students (Islam, 2022; Mia, 2019; Saha, 2017). The similarities between the study's findings and the existing literature validate prior claims about tertiary EFL teachers' unconducive behaviors. The congruent findings contribute to understanding tertiary EFL teachers' pedagogical behaviors. It shows that the humiliating teaching behaviors in the Bangladeshi tertiary setting are consistently practiced, confirming the dominance of hierarchical power distributions between teachers and learners. Their inconsistent behavioral practices are influenced by their own social and educational backgrounds, which emphasize rote learning, hierarchical teacher-student relationships, and limited exposure to critical thinking, indicating a need for further professional development. Furthermore, this is also due to a lack of ability to divert negative feelings during intricate and challenging classroom discourses, leading to occasional displays of disrespect and insensitivity. Thus, the findings contribute to a deeper understanding of the context by revealing a

gap in Bangladeshi tertiary EFL teachers' professional expertise in conducive behaviors to develop undergraduates' critical thinking.

Thirdly, Bangladeshi tertiary EFL teachers encouraged learners' risk-taking by promoting autonomy and persistence and encouraging critical dialogue. The finding conforms to the suggestion that teachers' attitudes, involvement and teaching significantly regulate EFL students' risk-taking behaviors in speaking communication (Zhao et al., 2024). Likewise, teachers' encouragement of peer discussion and acceptance of errors helps EFL learners take risks (Qianqian & Caiga, 2024). In particular, there was a positive correlation between Chinese school students' perceptions of teachers' autonomy support and learners' intellectual risk-taking (Lihua & Shiji, 2024). This congruence enhances the validity of the findings, showing that Bangladeshi tertiary EFL teachers actively create a safe classroom environment. They behaved this way because they recognized the value of autonomy and flexibility not only in learners' language development but also in their critical thinking. Therefore, the findings contribute to the existing literature, indicating that teachers' flexible behaviors and attitudes are crucial for promoting critical thinking.

However, some Bangladeshi tertiary EFL teachers discouraged learners' risk-taking and intellectual growth by discouraging divergence, limiting exploration and choices. The findings contrast with existing literature and theories. Learners' risk-taking and intellectual growth happen through exploration and facilitation of differing views (Hübner & Pfost, 2024). Moreover, the findings contradict Portelli's (1994) suggestions for bearing a flexible teaching attitude to create a safe environment for critical thinking. However, these findings also align with several pieces of empirical evidence, showing Saudi tertiary EFL teachers' teacher-centered practices limited learners' language-related risk-taking intentions by increasing their anxiety (Alzain, 2025). Likewise, Chinese tertiary EFL learners' risk-taking intentions were abated by teachers' negative attitudes and gestures (Chen et al., 2021b).

The empirical congruence indicates the findings' validity, suggesting that negative teaching behaviors hindering the creation of a safe classroom environment persist across Asia. Since Asian EFL teachers are new to critical pedagogy, which emerged with the beginning of the 4th industrial revolution, they lack the professional psychological preparedness to support learners' risk-taking. However, the theoretical contrast suggests that Portelli's theory may not reflect the educational realities of contemporary Asia, as it was developed in a Western context. Therefore, the findings

contribute to the understanding of how cultural and international factors influence the traditional teaching behaviors of Bangladeshi tertiary EFL teachers. Additionally, the findings reveal a cultural and geographical gap in theoretical propositions for teachers' behaviors in a critical thinking class.

4.6.1.3 Teaching Strategies for Critical Thinking

Firstly, the integration of qualitative and quantitative themes on the use of interesting materials shows that many Bangladeshi tertiary EFL teachers used such materials, including multicultural, technological, and cognitively engaging topics. These findings are corroborated by previous research and propositions. Portelli (1994) suggests that teachers should use materials and classroom activities that engage learners in inquiry-based and problem-solving. Likewise, Bangladeshi tertiary EFL teachers' use of interesting materials aligns with previous findings that show the use of opinion sharing, the employment of digital technologies, and the inclusion of cultural topics useful for teaching critical thinking (Allehyani, 2025; Arju, 2010; Islam, 2020; Mehrin, 2020; Sudha, 2018). The convergence validates the study's findings by showing that such pedagogical practices remained consistent across time and geographical locations. These practices are determined by several factors, like teachers' own needs and experiences in developing analytical thinking, intercultural awareness and personal interests. Moreover, their access to a wide range of online materials allows them to choose materials beyond traditional and fixed ones that can draw learners' attention. Therefore, the findings contribute to the existing body of knowledge by confirming the effectiveness of student autonomy-driven, cultural and ICT-integrated materials in teaching critical thinking.

Secondly, Bangladeshi tertiary EFL teachers frequently used ICT in class, employing a range of technological tools, including computers, laptops, projectors, email, social media, and PowerPoint. These findings comply with previous research on the use of ICT to promote critical thinking (Markzac, 2019; Subran, 2013). Particularly, technology integration is considered an effective way to engage learners in critical thinking (Lu & Xie, 2022; Rungsawang & Pookcharoen, 2023). These findings also correspond to the constructivist approaches to teaching critical thinking (Avsec & Kocijancic, 2016; June et al., 2014; Lu & Xie, 2022; Pattanapichet & Wichadee, 2015; Rungsawang & Pookcharoen, 2023). The similarities between the study's findings and

previous research on the use of ICT for teaching critical thinking support the constructivist principle. The congruence extends the theory by revealing that ICT integration facilitates critical thinking teaching in the Bangladeshi tertiary EFL context. The frequent and wide-scale integration of ICT was driven by the Bangladeshi government's initiative to digitalize higher education. Moreover, the global surge in technology-integrated learning, particularly after the COVID-19 pandemic, accelerated Bangladeshi tertiary EFL teachers' dependence on digital tools. Therefore, this congruence shows the effectiveness of constructivist and ICT-integrated pedagogical practices for teaching critical thinking, thereby expanding the theory's applicability in the 21st-century educational context.

However, the findings contrast with previous research on ICT integration in the Bangladeshi tertiary education context (Haque, 2022). The discordance indicates the evolving nature of pedagogical practices in Bangladeshi universities. Since COVID-19, ICT has been widely utilized in higher education, with its implementation growing (Shohel et al., 2025). Therefore, this finding indicates that Bangladeshi tertiary EFL teaching can potentially benefit from ICT-integrated classrooms. Thus, the findings contribute to the updated understanding of tertiary EFL educational scenarios in Bangladesh.

Thirdly, many Bangladeshi tertiary EFL teachers' use of open-ended questions aligns with the propositions for using questions with multiple correct answers, WH questions, and referential and unpredictable questions (Feng, 2013). Moreover, the finding aligns with empirical findings that show that tertiary EFL teachers in the Indonesian context used Socratic questions and inquiry-based and collaborative activities (Trisnanto et al., 2025). The adherence suggests the validity of this finding by specifying the generalizability of open-ended questions not only in the Bangladeshi tertiary EFL context but also globally. These open-ended questions were asked as part of the class's regular flow rather than as part of a systematic plan to promote critical thinking. Although tertiary EFL teachers recognize the value of asking open-ended questions, they may not use them consciously to promote critical thinking, but rather for language skill development, suggesting limited professional knowledge and skills in navigating open-ended questions, which aligns with critical pedagogy. Therefore, the finding empirically confirms the theoretical claims about the effectiveness of open-ended questioning in teaching critical thinking.

On the other hand, Bangladeshi tertiary EFL teachers' universal emphasis on closed-ended questions mainly to promote LOTs conforms to empirical evidence showing that Iranian and Spanish tertiary EFL teachers mostly applied LOT questions that invited simple responses from learners (Knomari et al., 2021; Serna-Bermejo & Lasagabaster, 2024). Similar questioning practices were identified in Indonesian and Saudi Arabian tertiary EFL contexts (Alghamdy, 2023; Yuliawati et al., 2016). Particularly, Indonesian tertiary EFL learners used language skill-specific critical thinking strategies (Ilyas & Istaryatiningtias, 2025), whereas Ethiopian tertiary EFL teachers used mostly LOT development strategies (Dessie & Guadu, 2025). The convergence validates the findings showing generalization across time and global spaces. This was due to deep-rooted experiences of conventional learning, a lack of training in critical pedagogy, and structural inflexibility. This further underscores the need for stronger professional development so that teachers can apply the most effective questioning strategies to promote learners' critical thinking. Therefore, the findings contribute to the field by revealing that tertiary EFL teaching practices are contextually shaped, extending beyond individual teacher factors and requiring formal professional learning. This further contributes to the existing knowledge by revealing the dominance of closed-ended questioning in tertiary EFL teaching practices.

Nevertheless, the finding regarding Bangladeshi tertiary EFL teachers' extensive use of closed-ended questions contrasts with Bloom's taxonomy and constructivist teaching, suggesting the use of questions corresponding to specific cognitive levels (Anderson et al., 2001; Ennis, 1987; Fahim & Bagheri, 2012; Samarasinghe, 2017; Walker, 2003; Şeker & Kömür, 2008). This divergence reveals a complex reality that underlies these pedagogical practices. Large classes and time pressure often reduce the opportunities to ask open-ended questions. Particularly, the urge to complete exam topics forces tertiary EFL teachers to use closed-ended questions as a classroom and learning management strategy. Moreover, Bangladeshi tertiary EFL teachers may lack the skills to design cognitively sequenced questions that systematically promote learners' critical thinking. Thus, the findings enrich understanding of tertiary EFL teachers' pedagogical practices by revealing that structural features, along with teachers' lack of professional competence, hamper conducive teacher questioning practices. Therefore, the theory of Bloom's taxonomy needs to be revisited in light of the overpopulated, socio-culturally restricted, and exam-

oriented educational settings in Bangladesh to enhance its contextual relevance and practical applicability.

Fourthly, Bangladeshi tertiary EFL teachers' modeling HOTs in the class strongly conform to the suggestions for the teacher to act as a role model for critical thinking (Riwayatiningsih et al., 2021; Gul et al., 2014; Mcbride & Knight, 1993; Walsh & Paul, 1986). The alignment between the study's findings and existing empirical and theoretical evidence confirms these findings' validity, indicating that teachers' modeling of HOT is foundational to fostering learners' critical thinking. Therefore, these findings expand theoretical stands on teachers' positions as role models by empirically demonstrating the effectiveness of teachers' modeling HOT as a key practice for developing critical thinking.

Fifthly, Bangladeshi tertiary EFL teachers' limited practice of seeking justification from learners conforms to the Thai tertiary EFL context, where teachers provided answers to the referential questions they asked (Prommak, 2019). This convergence indicates that the study's findings are valid, showing that the tertiary EFL teachers' limited practice of seeking justification from the learners is a regular practice in the South Asian countries. One of the major reasons for this is teachers' focus on exam-centered practice, which emphasizes language proficiency and factual recall rather than complex reasoning. In this regard, the pressure to complete the syllabus for exams and prepare learners to answer exam questions means the activities mainly involve language-related tasks. The findings contribute to the field by empirically proving that seeking justification is an important yet under-implemented teaching strategy in the Bangladeshi tertiary EFL context.

Finally, Bangladeshi tertiary EFL teachers' facilitation of students' reflective thinking through various strategies, such as encouraging metacognition, self-assessment, schema activation, and guided meaning-making, aligns with Ethiopian tertiary EFL teachers' questioning practices to facilitate learners' reflections (Haile et al., 2024). Particularly, reflective writing is considered an effective way to foster critical thinking among Indonesian tertiary EFL learners (Rizqiani & Astuti, 2025). Additionally, the finding aligns with the theoretical proposition that developing reflectivity leads to becoming a right critical thinker (Facione et al., 1994; Facione, 2000; Halpern, 2014). These adherences validate the study's findings by demonstrating that facilitating students' reflection is a universally recognized strategy to promote their critical thinking. Bangladeshi tertiary EFL teachers facilitated learners' reflection as a

strategy to make them engaged in the classroom. Moreover, they may have implemented this to diagnose any learning gaps. The limited focus on critical thinking in the curriculum also leads to these implicit critical thinking practices. Hence, this was mainly a classroom management tool rather than a conscious effort to engage learners in analytical thinking. Therefore, this finding extends the theoretical proposition by providing empirical evidence on the effectiveness of context-specific strategies in fostering learners' reflective thinking.

4.6.1.4 Critical Thinking Instructions

Firstly, some Bangladeshi tertiary EFL teachers encouraged problem-solving through cognitive engagement, reasoning development and capacity building. This finding strongly aligns with the constructivist teaching approach (Powell & Kalina, 2009). Apart from this, previous discussions also suggest that problem-solving is a key aspect of critical thinking and should be included in the critical pedagogy (Facione, 1990, 2011; Halpern, 2014). Particularly, while 66.70% of Bangladeshi tertiary EFL teachers promoted problem-solving, 73% of Algerian tertiary EFL teachers promoted problem-solving (Reguig et al., 2024). The similarities between the study's findings and the existing literature strongly validate the findings by confirming that problem-solving is a consistently practiced and established way of promoting learners' critical thinking across various geographical locations, not only in Bangladesh but also globally. Bangladeshi tertiary EFL teachers encouraged learners' problem-solving as an instructional strategy to help them address learning difficulties and enhance their understanding of the content. Hence, this instructional practice was an intuitive rather than a systematic approach to developing critical thinking. This not only reflects their limited knowledge and skills in critical pedagogy but also a limited focus on critical thinking in the tertiary EFL curriculum, materials and policy. Therefore, the finding extends the theoretical basis for teaching problem-solving as a core technique for critical thinking, though its application requires conscious planning of materials, activities, and instructional approaches.

However, the findings partially contradict previous claims that most Bangladeshi university teachers possess limited problem-solving knowledge (Islam et al., 2021). This discordance reveals the evolving teaching practices in the Bangladeshi tertiary EFL context. Although some Bangladeshi tertiary EFL teachers may lack

formal training in integrating problem-solving, many have adapted their teaching strategies to engage learners in problem-solving. This underscores their growing understanding and pedagogical practices for fostering learners' critical thinking, which deviate from the existing reports. In particular, the divergence reveals that EFL teachers in the top-ranking Bangladeshi universities are proactively integrating problem-solving into their classes as they are striving to uphold their individual and institutional esteem through research and state-of-the-art pedagogical practices. Therefore, the findings contribute to the field by showing that contextual and motivational factors, such as instructional prestige, can facilitate the adoption of conducive teaching practices that foster critical thinking.

Secondly, Bangladeshi tertiary EFL teachers' limited use of project-based activities and their prioritization of teacher-centered, individual, and closed-ended activities deviate from the proposed constructivist teaching practices (Abed, 2020; Chen, 2019; Sari & Prasetyo, 2021; Somani & Rizvi, 2018). Likewise, contrary to the study's findings, Indonesian tertiary EFL teachers utilized project-based activities to promote learners' critical thinking (Halim et al., 2023; Karyawati & Ashadi, 2018). These dissimilarities between the study's findings and the theoretical propositions and empirical findings indicate a complex reality underlying the unsuitable pedagogical practices. Bangladeshi tertiary EFL teachers rarely integrate project-based activities in their classes due to several structural barriers, such as large classes, time constraints and an exam-oriented educational system that prioritizes results over skill development. Moreover, the teachers may lack formal training in designing, implementing and assessing context-oriented project-based activities that can facilitate both linguistic competence and critical thinking. Furthermore, the overall limitation of Bangladeshi higher education is the restrictive opportunities to explore innovative pedagogical strategies through teacher autonomy. Therefore, the findings enrich understanding of the contextual and systematic barriers that shape Bangladeshi tertiary EFL teachers' pedagogical practices, underscoring the gap between constructivist ideals and classroom realities.

Thirdly, many Bangladeshi tertiary EFL teachers provided constructivist feedback, including formative, motivational, and cognitively engaging feedback, which aligns with empirical findings indicating that Indonesian tertiary EFL teachers provided formative feedback to the learners (Hasan et al., 2025). Likewise, within the constructivist framework, Chinese tertiary EFL teachers provided feedback that

enhanced learners' motivation (Gan et al., 2021). Moreover, the findings align with the theoretical proposition claiming that constructivist feedback should enhance learning motivation (Kwan & Wong, 2015; Le & Nguyen, 2024). The alignment with empirical studies suggests the findings' generalizability, indicating that positive feedback practices are consistent across a larger teaching community. These practices were evident due to the teachers' growing awareness of student-centered teaching and their exposure to a global shift from traditional pedagogical practices to constructivist feedback practices facilitated by ICT. Hence, the findings enrich the constructivist feedback theory by empirically demonstrating the growing acceptance of constructivist feedback in the tertiary EFL context.

Conversely, the evidence of a few tertiary EFL teachers' unhelpful feedback aligns with similar feedback practices in Ethiopian tertiary EFL settings (Getenet, 2022). This similarity validates the irregular constructivist feedback practices, revealing the consistency of such practices across diverse geographical locations, encompassing Asia and Africa. Bangladeshi tertiary EFL teachers' limited professional skills and knowledge in implementing constructivist feedback led to these undesirable feedback practices. Moreover, overall negligence towards feedback approaches and the dominance of traditional teacher-centered education led to unhelpful feedback practices. Thus, the findings enhance the constructivist feedback theory by revealing contextual factors that shape teachers' feedback practices. Therefore, the theory needs to be contextualized for complex scenarios, such as those in Bangladeshi tertiary EFL settings, to enhance its relevance and applicability.

4.6.1.5 Teacher-Student Interaction

Firstly, the integrated findings show that some tertiary EFL teachers allowed students' opinions through strategies, like acknowledging contributions, encouraging active participation, promoting students' expression and respecting diversity. This finding conforms to existing theoretical propositions (Arju, 2010; Facione, 1990; Vygotsky, 1978). Similarly, Nepalese EFL teachers encouraged learners to share their opinions (Paudel, 2020). The congruent findings strongly validate the study's findings, indicating their generalizability across diverse educational settings. The findings show a transformation in classroom discourse, with tertiary EFL teachers moderately allowing learners' voices. Therefore, the findings enhance understanding of teaching

practices, showing that teachers navigate the teacher-student roles from a constructivist perspective. Thus, the findings empirically show the applicability of the constructivist theory and the proposition of critical thinking development. Accordingly, the findings reveal new insights into classroom dynamics that foster critical thinking.

However, a few Bangladeshi tertiary EFL teachers restricted students' opinions by limiting their response opportunities, which contradict established theories (Facione, 1990; Vygotsky, 1978). In contrast, aligning with the study's findings, Thai tertiary EFL teachers restricted them (Prommak, 2019). These convergences and divergences in findings reveal a complex context for pedagogical practices. The restrictions occurred because the teachers had limited understanding of and skills in steering these interactions toward critical dialogue. Both teachers' and learners' cultural and prior educational experiences prevented them from engaging in critical dialogue by breaking the hierarchical relationships between teachers and students. Thus, the findings enhance understanding of the intricate context of tertiary EFL teaching practices, shaped by teachers' and learners' backgrounds, indicating the necessity of social reform to facilitate teaching critical thinking in the Bangladeshi tertiary EFL contexts.

Secondly, some Bangladeshi tertiary EFL teachers demonstrated negative reactions to students' questions, expressing sarcasm, dismissal, and rejection. Similarly, Chinese tertiary EFL teachers got enraged by students' questioning (Xie & Jiang, 2021) and Swedish EFL teachers demonstrated traditionally unproductive reactions (Amri & Sert, 2025). The similarities suggest the validity of the findings, indicating the persistence of tertiary EFL teachers' negative responses to students' questioning across a larger population and various geographical locations. The findings indicate that the overall conservative social and educational environment, in which open-mindedness is restricted, contributed to limited critical thinking among teachers and learners. Therefore, the findings enrich the existing field, showing that tertiary EFL teachers' responses to students' questions are not individual behaviors. Contrarily, they are shaped and directed by socio-cultural and institutional factors that hinder critical dialogues.

On the other hand, the findings contrast with the theoretical propositions regarding nonjudgmental, encouraging feedback (Brooks & Brooks, 1999; Hattie & Timperley, 2007; Vygotsky, 1978). This discordance indicates that the theoretical propositions for constructivist feedback are limitedly employed in practice. Contextual factors, like time constraints, large classes, teachers' limited emotional regulation

ability, and dominance of the hierarchical teacher-student relationship, reduce the propensity to respond supportively. Therefore, the findings contribute to the theory by revealing the limitations in the applicability of constructivist feedback, which is shaped by multiple contextual factors.

Thirdly, Bangladeshi tertiary EFL teachers' emphasis on a teacher-centered classroom is also corroborated by previous empirical results (Gümüşok, F., & Balıkçı, 2020; Nursehag & Amalia, 2024; Patwary & Chowdhury, 2021; Sivaci, 2020). The convergence indicates the generalizability of the findings regarding teacher-centered classroom practices. This suggests that, despite global concerns and educational realities, teacher-centered practice remains the dominant approach in the Bangladeshi tertiary EFL context. Various contextual factors, such as the persistent focus on rote learning in Bangladeshi higher education and long-standing teacher-centered practices that have shaped both teachers' and learners' previous educational foundations, limit the opportunities and efforts to promote student-centeredness. Thus, the findings enhance the understanding of the challenges of student-centered pedagogies in tertiary EFL contexts.

Moreover, the finding strongly goes against the propositions for a student-centered classroom for developing critical thinking (Powell & Kalina, 2009; Palincsar, 1998; Vygotsky, 1978). Likewise, the findings contrast with empirical evidence showing that, despite challenges, Saudi tertiary EFL teachers largely employed student-centered instructions (Nazim et al., 2024). These divergences highlight the complexities of implementing student-centeredness, thereby challenging constructivist theory's applicability in a complex socio-cultural context such as Bangladeshi tertiary EFL settings. Therefore, the theory should be reconsidered to address challenges such as large classes, time constraints, and a lack of teachers' professional competence. Thus, the findings shed light on the limitations of student-centered theories, underscoring the need for revisions to make them more practically relevant.

Finally, many Bangladeshi tertiary EFL teachers encouraged collaborative learning. Likewise, EFL teachers in an Ethiopian engineering university largely used collaborative activities (Lemma, 2024). Particularly, Indonesian tertiary EFL teachers deliberately used collaborative activities to promote 21st-century skills among the learners (Marwa et al., 2024). The findings also correspond to social constructivist theory (Kaçar, 2020; Powell & Kalina, 2009; Vygotsky, 1978). These convergences confirm the findings' validity, demonstrating that Bangladeshi tertiary EFL teachers

not only acknowledge the role of collaborative learning but also actively implement it to enhance learners' critical thinking. They used collaborative learning activities as the OBE curriculum was implemented. Moreover, within the context of the post-COVID-19 surge in technology-integrated learning, this transition appeared to accelerate a reliance on digital tools among the participating Bangladeshi EFL tertiary teachers. Therefore, the findings corroborate that even in contextually limited settings, like in Bangladesh, where resource limitations and large classes prevail, teachers can and do use collaborative learning activities that align with social constructivist theory.

However, a few Bangladeshi tertiary EFL teachers discouraged collaborative learning. This finding aligns with the empirical evidence on Chinese, Turkish and Ethiopian tertiary EFL teachers' lack of interest in using collaborative activities (Gari & Abebe, 2023; Koç, 2018; Zheng et al., 2021). Particularly, Algerian tertiary EFL teachers' use of collaborative activities lacked the characteristics of social learning and they mainly aimed to ensure language outcomes from these activities (Boughari, 2022). These similarities confirm the findings' validity, revealing the generalizability of tertiary EFL teachers' limited implementation of collaborative learning across higher educational settings. The findings indicate numerous contextual barriers that limit opportunities to incorporate collaborative activities in Bangladeshi tertiary EFL classes. Bangladeshi tertiary EFL teachers lack a systematic, well-developed understanding and skills for designing and implementing collaborative activities that promote both language proficiency and critical thinking. Moreover, the exam-centered educational focus limits the opportunities to design a curriculum that integrates collaborative activities. Most importantly, this indicates a lack of tertiary EFL teachers' collaborative experiences in teaching and research, leading to their inability to practically design and implement collaborative learning activities. Collectively, the findings underscore that the value of collaborative learning activities is not spontaneously recognized, necessitating targeted teacher training and systemic reformation.

Simultaneously, the findings contrast with the social learning principle of constructivist theory (Kaçar, 2020; Powell & Kalina, 2009; Vygotsky, 1978). This divergence reveals a gap in the theory, showing that the principle of social learning for shared meaning-making and knowledge co-construction does not align with the realities of Bangladeshi tertiary EFL teaching. Therefore, the constructivist theory should be revisited to incorporate contemporary, complex contextual and institutional factors, grounded in empirical evidence, to enhance its applicability.

4.6.2 Discussion on RQ2: What is the Level of Knowledge of Critical Thinking among Bangladeshi Tertiary EFL Teachers?

The findings of the semi-structured interviews (RQ2) yielded two themes and their sub-themes, which provided the conceptual basis for the quantitative instrument used in RQ3. In this chapter, these findings are synthesized into two themes: fragmented knowledge leading to weak motivation and knowledge-guided practice. By integrating qualitative narratives with quantitative data, this discussion demonstrates how knowledge influences tertiary EFL teachers' motivation to teach critical thinking and teaching practices.

4.6.2.1 Fragmented Knowledge Leading to Weak Motivation

Firstly, the integrated findings reveal that Bangladeshi tertiary EFL teachers' underdeveloped critical thinking knowledge ($r = .291$, $p = .000 < .01$) is associated with their low motivation. Tertiary EFL teachers' limited motivation emerged from both limited Content Knowledge (CK) and Pedagogical Content Knowledge (PCK) and contextual factors, such as unconducive university policies and curriculum, and IQACs' failure to implement the OBE curriculum. Moreover, their limited autonomy and opportunities for professional development reduce their motivational efforts to teach critical thinking. In addition, students' weak English proficiency diminishes their interest in teaching critical thinking. Furthermore, their negative attitudes toward teaching critical thinking are major demotivating factors.

These findings are consistent with previous empirical evidence and theories. Previous studies revealed the lack of critical thinking knowledge among Bangladeshi teachers (Islam et al., 2021; Ullah et al., 2022). In addition, previous studies ensured that inadequate ICT infrastructure in universities (Chowdhury, 2019) and IQACs' failure to operate to an optimum level (Nahar et al., 2018; Rahnuma, 2020b) restrict Bangladeshi tertiary EFL teachers' critical thinking CK and PCK development and implementation. In this connection, external factors, such as a lack of training and a traditional curriculum, contribute to their limited knowledge and motivation to teach critical thinking were identified (Raqib, 2019; Ullah et al., 2022). Similarly, Indonesian and Palestinian tertiary EFL teachers' limited understanding of critical thinking impedes its effective implementation in their classes (Ayyash, 2022; Defianty & Wilson, 2024).

Moreover, Egyptian tertiary EFL teachers' endeavors to teach critical thinking were hindered by the lack of focus on critical thinking in the curriculum (Latif, 2022). However, their limited autonomy to modify or upgrade textbook content contradicts Esseili et al.'s (2009) suggestion that EFL textbooks should include multicultural content.

Likewise, the findings align with similar knowledge and motivational limitations among tertiary EFL teachers in other countries. Palestinian, Chinese and Colombian tertiary EFL teachers have an ambiguous understanding of critical thinking (Ayyash, 2022; Marin & Pava, 2017; Zhang et al., 2020). Moreover, Iranian EFL teachers feel uneasy teaching critical thinking with innovative approaches, indicating a lack of intrinsic motivation (Khodabakhshzadeh et al., 2017). Additionally, Ullah et al. (2022) found that Bangladeshi undergraduate EFL learners' poor language proficiency is a key reason behind teachers' lack of motivation to teach critical thinking. Similarly, Turkish tertiary EFL teachers' motivation to teach critical thinking is reduced by students' English deficiency (Taraf, 2017). Moreover, Iranian EFL teachers had to deal with negative attitudes while implementing critical thinking in their classes (Alinejad et al., 2021). Studies (Allehyani, 2025; Essia & Khallaf, 2025; Zhao & Jia, 2023) in Asian countries, like China, Oman and Saudi Arabia, show that EFL teachers faced similar external and internal challenges.

These alignments between the study's findings and previous empirical evidence validate the view that Bangladeshi tertiary EFL teachers' fragmented knowledge of critical thinking and subsequent weak motivation to teach it are not an isolated phenomenon but rather reflect a broader teaching concern in higher education across diverse geographical locations. Limited institutional focus on critical thinking development, scarce opportunities for professional development to enhance tertiary EFL teachers' critical thinking CK and PCK and the ineffectiveness of IQAC in implementing the OBE curriculum and subsequent teaching motivation significantly contribute to this relationship. Additionally, their limited self-directed professional skill and knowledge development initiatives prevent them from earning an adequate understanding of critical thinking and its teaching.

Moreover, student-related factors, such as their low English proficiency, compel teachers to focus on strengthening their language skills so that they can cope with English-medium instruction rather than on developing critical thinking. In this connection, the problems' root lies in students' poor language and critical thinking

experiences during their school and college-level education. Therefore, the findings show that teaching critical thinking in the Bangladeshi tertiary EFL context is a complex socio-educational ecosystem in which various institutional and personal factors dynamically intersect. Collectively, these reveal that knowledge is crucial, but knowledge alone is insufficient to create and sustain strong motivation to teach critical thinking.

Secondly, tertiary EFL teachers' collective comprehensive CK of critical thinking adheres to Shulman's (1986, 1987, 2004) proposition that teachers' knowledge includes a deep understanding of the subject matter and the strategies to transform that knowledge into practices, addressing learners' needs, goals and contexts. Particularly, tertiary EFL teachers' views of critical thinking as HOTs comply not only with Bloom's taxonomy (Anderson et al., 2001) but also with the broader concepts (Facione & Facione, 2013). These similarities confirm the acceptability of the theoretical foundations of critical thinking, empirically showing that tertiary EFL teachers acknowledge the established concepts for educational purposes. This happened due to the initiatives to familiarize Bangladeshi tertiary EFL teachers with Bloom's taxonomy through training organized by IQACs. Therefore, the findings reinforce the theoretical underpinning, demonstrating that Bloom's taxonomy is an influential framework for developing tertiary EFL teachers' conceptions of critical thinking. Additionally, the findings corroborate the theory of teachers' knowledge, showing the significance of critical thinking CK and PCK for enhancing teaching motivation.

However, tertiary EFL teachers'fragmented CK of critical thinking, either as a skill or as a disposition and personalized conception, and PCK about materials, instructions, handling unusual circumstances and student-centeredness, at individual levels, resonates the claim that most teachers possess sporadic views of critical thinking and teaching it (Altun & Yildirim, 2023; Felix et al., 2025; Paul, 2005). This similarity confirms the validity of the findings, indicating that individual teachers often lack a workable and holistic understanding of critical thinking. Moreover, this ensures the findings' generalizability, showing that fragmented understanding is a common phenomenon among the broader teacher community. The limitations of their CK stemmed from a narrow focus on critical thinking in teacher education and in formal training. Thus, the findings elaborate on the existing understanding by revealing that the challenge lies not only with tertiary EFL teachers but also with the absence of

systematic training and limited self-directed professional learning through research and collaboration.

Thirdly, tertiary EFL teachers' institutional barriers and personal negative attitudes, which lower their motivation, contrast with the propositions of Self-Determination Theory (SDT). According to SDT, employees do not adhere to a goal or task unless they are made to do so by institutional regulations, support, acknowledgment, and sometimes punishment (Olafsen & Deci, 2020; Ryan & Deci, 2000). Over time, the forced practices become internalized, and employees begin to enjoy them, thereby exerting intrinsic motivation (Ryan & Deci, 2000). In this regard, Elder (2019) suggested that the teaching of critical thinking does not involve the teacher alone but also requires creating an ecosystem, including policies, teacher development facilities, and monitoring, that will foster critical thinking as an essential goal of education.

The theoretical divergence indicates a complex reality underlying the low relationship between Bangladeshi tertiary EFL teachers' critical thinking knowledge and motivation. This indicates that the personal and institutional conditions, including knowledge, skills, support, and policy, in Bangladeshi tertiary EFL settings still involve many factors that limit teachers' desire to pursue autonomy, competence, and relatedness. This happened as teachers' motivation is a less focused concern in Bangladeshi universities (Rahman et al., 2023; Rana et al., 2024; Sultana et al., 2025). Particularly, teachers are often overloaded with academic and administrative responsibilities and research expectations, leading to work-life imbalance. Furthermore, teachers' individual pedagogical efforts and aspirations are usually overlooked and unrecognized. Due to these forced working conditions, in which autonomy, relatedness, and competence are suppressed, Bangladeshi tertiary EFL teachers fail to fully internalize the principles of critical pedagogy. Therefore, the findings expand SDT from a reverse perspective, showing how the equilibrium of external and internal factors leads to the effective execution of innovative teaching, such as critical thinking.

4.6.2.2 Knowledge-guided Teaching Practices

The integrated findings show that Bangladeshi tertiary EFL teachers' critical thinking knowledge moderately influences their critical thinking practices (r = .495, p

= .000 < .01). As part of critical thinking CK, tertiary EFL teachers acknowledged the significance of teaching critical thinking for learners' academic, social, personal and global benefits. However, many of them possessed limited PCK, as demonstrated by their restrictive attitudes toward learner autonomy and critical conversations and a fragmented understanding of materials and instructional strategies. In this connection, their perceived practices indicated inconsistent implementation of materials, strategies, ICT and student-centeredness.

The findings align with existing empirical findings. Ethiopian tertiary EFL teachers' PCK and practices of critical thinking were misaligned (Dessie & Guadu, 2025). In addition, Chinese and Iranian EFL teachers had limited knowledge of critical thinking and rarely implemented it, though they acknowledged the value of teaching it (Knomari et al., 2021; Ghaani & Roslin, 2021; Zhang et al., 2020). The convergence indicates the findings' generalizability across the broader teacher community, suggesting that knowledge may not always translate into practice. Since the tertiary EFL teachers' PCK was developed without formal training, their critical thinking strategies and understanding of the content were developed intuitively, with little emphasis on critical thinking development. In particular, they lack mental preparedness, such as open-mindedness to contradictory topics, and the ability to shift between teacher and student roles to fully internalize the concepts of critical thinking. Additionally, the tertiary EFL teachers' and the learners' traditional, conservative and restrictive cultural and educational background limit the opportunity to execute critical thinking CK and PCK into the classroom. Thus, the findings enrich understanding of the complex interaction between tertiary EFL teachers' knowledge and practices, shaped by their emotional, attitudinal, and contextual factors.

Contrarily, the findings contrast with the theoretical propositions. According to Shulman (1986), teachers' CK and PCK determine the level of their classroom practices. However, the best teaching practices depend on teachers' knowledge, which develops from their interactions with the context (Cochran & Lytle, 1999; Shulman, 1987). Particularly, Cochran and Lytle (1999) argue that teachers' knowledge and practice shape one another. In this regard, EFL teachers in Chinese secondary schools not only possessed adequate CK in critical thinking but also incorporated strategies to teach it (Li, 2023). This discordance suggests a contextual entanglement. A limited focus on critical thinking in university policy and curriculum often restrains EFL teachers from incorporating it in their classes. Moreover, despite their

acknowledgement of the value of teaching critical thinking, conservative socio-cultural norms, hierarchical teacher-student relationships and the teachers' unwillingness to take extra responsibility restrict the proper implementation of their critical thinking CK and PCK. Therefore, the findings expand the theory, revealing that teachers' CK and PCK alone are insufficient to ensure conducive practices. Hence, the theory needs to be reformed to integrate contemporary professional complexities to account for the circumstances in Asian developing economies.

4.6.3 Discussion on RQ3: To What Extent Do Critical Thinking Knowledge, Motivation, and Practices of Bangladeshi Tertiary EFL Teachers Correlate?

The quantitative analysis revealed an intriguing relationship among tertiary EFL teachers' critical thinking knowledge, motivation and practice. This relationship was informed by the KAP model in the innovation diffusion theory (Rogers, 2003), which views motivation as a mandatory mediating factor between knowledge and practice. Viewing the relationship through the lens of the KAP model demonstrates how motivation regulates the relationship between tertiary EFL teachers' critical thinking knowledge and practice. The summary of the relationship is demonstrated in Figure 4.3.

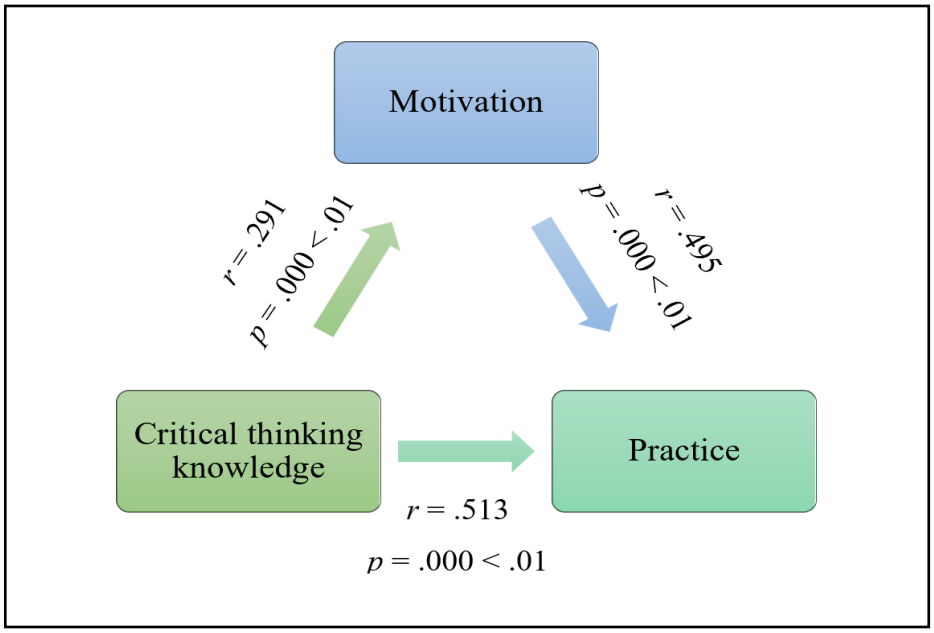

Figure 4.3 The Relationship among Tertiary EFL Teachers' Critical Thinking Knowledge, Motivation and Practice

Figure 4.3 shows that knowledge has a weak positive connection with motivation (r = .291), and motivation has a stronger positive connection with practice (r = .495). Moreover, knowledge has the strongest positive relationship with critical thinking practices (r = .513).

According to Figure 4.7, tertiary EFL teachers' critical thinking knowledge weakly correlates with their motivation to teach critical thinking, whereas their motivation moderately correlates with their practices. These findings conform to previous empirical findings. Amale and Gebretsadik (2024) found a strong correlation between Ethiopian tertiary EFL teachers' self-efficacy beliefs and their critical thinking practices. Similarly, studies in the Pakistani context (Bibi & Hanif, 2023; Parveen & Arif, 2020) show that teacher educators have a limited understanding of critical thinking, while university teachers rarely integrate it into their classes.

This convergence indicates the findings' validity, showing that the relationship among EFL teachers' knowledge, motivation and practices is a common phenomenon. However, the weak positive correlation between knowledge and motivation, and the moderate positive correlation between motivation and practice, indicate that although knowledge is an important factor in ensuring tertiary EFL teachers' critical thinking practices, it alone may not yield high-quality practices unless mediated by motivation. Even well-informed teachers may not apply their knowledge when they lack motivation. This can be explained through the SDT's psychological needs for relatedness, autonomy and competence (Ryan & Deci, 2000). A teacher with greater CK and PCK of critical thinking may feel competent to integrate critical thinking into their instructions. However, knowledge alone is not enough to endure conducive classroom practices. The transformation of knowledge into practices requires their feeling of autonomy to make instructional decisions which will make them integrate critical thinking into their instructions, rather than following prescribed plans. Similarly, their feeling of relatedness contributes to the process since support from colleagues, administration and wide institutional environment can strengthen their desire to incorporate critical thinking into class. Therefore, the stronger relationship between motivation and practice indicates that the satisfaction of these motivational needs drives the transformation of knowledge into classroom practices.

Hence, facilitating their relatedness, autonomy, and competence in critical thinking is imperative to ensure effective classroom practices in critical thinking. Thus, the findings enhance understanding of the mechanisms of knowledge, motivation, and

practice, in which motivation functions as a catalyst rather than an auxiliary aid, underscoring the significance of promoting tertiary EFL teachers' motivation through organizational reform and personal proactiveness. In this regard, the finding confirms the study's conceptual framework, which views motivation as a regulatory factor between tertiary EFL teachers' critical thinking knowledge and practice.

However, findings show that the direct influence of tertiary EFL teachers' critical thinking knowledge on practice is stronger than its indirect influence through motivation. This reveals that though motivation's role in practice is weaker than knowledge, it mediates the relationship between knowledge and practice to some extent. The findings correspond to the partial mediation of Philippine school teachers' motivation between teaching practices and their leadership (Abella & Bacasmot, 2025; Navarez et al., 2024). Similarly, Yemeni school teachers' motivation partially mediated their competency and professional performance (Boset & Asmawi, 2020). Particularly, motivation partially mediated Malaysian school science teachers' critical thinking knowledge and practices, while there was a strong relationship between their knowledge and practices (Zukizah & Jamaluddin, 2025). Moreover, Bangladeshi tertiary educators' knowledge of ICT had a stronger direct connection with their ICT use than their attitudes (Rahman & Rahman, 2015).

The congruence establishes the findings' validity, revealing that tertiary EFL teachers' motivation to teach critical thinking is an important yet supplemental factor between their knowledge and practice. Knowledge has a stronger direct effect on practice because it provides tertiary EFL teachers with the tools, strategies, and goals they can implement without relying on a motivation boost. In contrast, the partial mediation of their motivation reflects a gap between what they know, what they are motivated to do, and what they actually do. Thus, the findings provide insight into the mechanism underlying Bangladeshi tertiary EFL teachers' critical thinking practices, indicating that their knowledge plays the primary role, though motivated teachers are expected to deliver more sustained and effective critical thinking instruction.

On the other hand, the findings contrast with previous empirical evidence. Malaysian preschool teachers' attitudes had a stronger influence on their active learning practices than the influence of knowledge (Qi & Mohamed, 2024). These divergences indicate that the Bangladeshi tertiary EFL context is more exam-oriented, requiring EFL teachers to emphasize knowledge and practice, whereas Chinese and Malaysian teachers receive greater motivational support (Abdullah & Taat, 2025; Li & Xu, 2024).

Thus, the findings indicate the significance of external motivational support, like salary, recognition and creating a motivating environment, which will reinforce tertiary EFL teachers' practices guided by knowledge-based motivation.

Likewise, this finding conforms to the propositions of the KAP model. According to this theory, the indirect effect of knowledge on practice is stronger than its direct effect (Fang & Zhao, 2025; Kang et al., 2024; Ren et al., 2025; Rogers, 2003). However, the theory also indicates that individuals' social realities and organizational structures also play a key role in formulating their knowledge and motivation (Kundu et al., 2021; Lee et al., 2021; Saedi et al., 2023). This theoretical concordance indicates a complex reality in Bangladesh in which teachers' motivation is overlooked and the expectation is that mere knowledge is enough for effective teaching practices. The moderate mediating role of motivation was evident as many external factors, such as institutional impetus, large class size, time constraints, socio-cultural factors, and lack of training, hindered the translation of knowledge into motivation and motivation into practice. In this connection, tertiary EFL teachers primarily rely on their knowledge to practice. Thus, the KAP model reflects the realities of Bangladeshi tertiary EFL education by acknowledging the role of external factors in the relationship among knowledge, motivation and practices. Thus, the findings empirically reinforce the model's applicability across diverse geographical and educational contexts, including in developing countries such as Bangladesh and in the EFL domain.

4.7 Conclusion

Chapter 4 communicates the findings related to the three research questions. Findings from semi-structured classroom observations on RQ 1 revealed that Bangladeshi tertiary EFL teachers' behavior, strategies, instructional practices, and promotion of teacher-student interaction partially support the development of critical thinking. The findings also indicate that the classroom physical environments in the Bangladeshi tertiary EFL context are mostly conducive. In addition, the results of RQ2, based on semi-structured interviews, uncovered comprehensive yet fragmented CK and PCK of critical thinking, resulting from multifaceted institutional, teacher- and student-related, and socio-cultural barriers. The quantitative findings for RQ 3 revealed that Bangladeshi tertiary EFL teachers' knowledge weakly correlates with their motivation to teach critical thinking. On the contrary, their knowledge shows a stronger correlation

with their practices than their motivation does. The synthesis of data confirms a persistent trend: the stronger influence of critical thinking knowledge than of motivation on practices.

The findings are significant for several reasons as they suggest gaps in Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation and practices. The partial alignment between their instructional practices and critical thinking goals indicates a limitation in their skills to promote critical thinking effectively. Moreover, their underdeveloped knowledge of critical thinking indicates a lack of conceptual and pedagogical understanding, limiting their ability to design and implement instructional strategies. Additionally, the weak correlation between their knowledge and motivation indicates that weak knowledge, along with contextual and personal factors, fails to translate into strong motivation to teach critical thinking. Likewise, the moderate correlations between motivation and practices and between knowledge and practices suggest that contextual and personal factors limit the adoption of conducive classroom practices. Overall, the findings suggest a need for comprehensive, systematic professional development and contextual reform to empower Bangladeshi tertiary EFL teachers to teach critical thinking effectively. Thus, the recurring themes: teaching strategies for critical thinking, critical thinking instructions, teacher-student interaction, poor knowledge leads to weak motivation, knowledge-guided practice and interrelationship among knowledge, motivation and practices provide the empirical basis for the development of the framework in the following chapter.

CHAPTER 5
CONCLUSIONS AND IMPLICATIONS

5.1 Overview of the Chapter

This final chapter concludes the thesis by synthesizing the research findings and discussing their broader implications for learners, the national education authorities, and other relevant members of society. Having presented the data analysis in the previous chapter, Chapter 5 aims to answer the core research questions and evaluate the extent to which the study's objectives have been met. The discussion begins with a summary of the empirical results, followed by an exploration of the theoretical and practical contributions of the work. Furthermore, the limitations encountered during the research process are addressed, providing context for the final recommendations. The chapter concludes with suggestions for future scholarly inquiry into the development and implementation of critical pedagogy, teacher training, conflict between language and critical thinking development goals, and socio-cultural influences across diverse geographical contexts.

5.2 Summary of the Study

This section outlines the key findings from the three RQs of the study. The purpose of this section is to map the relevance of the findings to the study's objectives. Moreover, the summary aims to provide an overview of the confirmation or refusal of the hypotheses under RQ 3.

5.2.1 Summary of RQ 1: How Do Bangladeshi Tertiary EFL Teachers Incorporate Critical Thinking into Their Classroom Practices?

RQ 1 explored how Bangladeshi tertiary EFL teachers integrate critical thinking into their classes. The findings revealed that Bangladeshi tertiary EFL teachers' critical thinking practices involve problems with roots in complex contextual factors. The unfavorable lighting, sound, and interior conditions, including furniture arrangement and classroom size, were caused by environmental pollution, increased urban hustle,

and the dominance of teacher-centered education. Despite some instances of noise control and favorable lighting, these discouraging features significantly hinder the possibility of promoting critical thinking.

Moreover, Bangladeshi tertiary EFL teachers demonstrated both conducive and unconducive behaviors, like entering the class with a friendly gesture but showing disrespect and insensitivity to the learners. Secondly, they demonstrated both supportive and unsupportive instructional and feedback gestures. Thirdly, they integrated several interesting materials, while some unfavorable materials were also implemented. However, though they used open-ended questions, their questioning mainly focused on language and LOT development. Fourthly, they modeled HOT for the learners, though they inadequately sought justification from the learners. Fifthly, tertiary EFL teachers facilitated learners' reflections through different strategies. Sixthly, they frequently used many ICT tools, such as multimedia projectors, email, and audiovisual content, in their classrooms. Finally, though tertiary EFL teachers encouraged risk-taking and growth, the practice was irregularly implemented.

Thus, the findings of RQ 1 strongly align with Research Objective (RO) 1, which aimed to explore Bangladeshi tertiary EFL teachers' classroom practices for critical thinking. The findings underscore the teaching behaviors, strategies, instructional aspects, and teacher-student interaction that capture the most obvious features of classroom dynamics. Apart from this, the more implicit factors, such as the classroom physical environment, were also analyzed, as they significantly influence teaching and learning practices. In short, the findings adequately meet RO 1.

5.2.2 Summary of RQ 2: What is the Level of Knowledge of Critical Thinking among Bangladeshi Tertiary EFL Teachers?

RQ 2 investigated Bangladeshi tertiary EFL teachers' knowledge of critical thinking (Content Knowledge and Pedagogical Content Knowledge). Findings indicate that Bangladeshi tertiary EFL teachers conceptualized critical thinking theoretically and individually. Their conception of critical thinking includes aspects of Bloom's taxonomy, such as analyzing, synthesizing, and evaluating, as well as other theoretical elements, including inferencing, truth-seeking, and decision-making. However, many of them personalized the concept of critical thinking, describing it as deep, multi-perspective and unconventional thinking. Notwithstanding their conceptions, both

theoretical and personal, were incomplete, as they viewed critical thinking either as skills or as dispositions rather than as a combination of both.

Bangladeshi tertiary EFL teachers' conception of the connection between critical thinking and English development encircles several aspects. While some viewed the relationship as mutually dependent, others considered learning English independent of critical thinking skills. However, another group of tertiary EFL teachers believed that the development of critical thinking and English proficiency did not require one another. Thus, their perspectives on the relationship between were largely varied and fragmented. Additionally, they underscored the importance of teaching critical thinking to support learners' academic, social, personal, and global development.

Bangladeshi tertiary EFL teachers' PCK of critical thinking encompasses their knowledge of materials, questioning strategies, social learning activities, Information and Communication Technology (ICT) for critical thinking, instructional strategies and challenges. Bangladeshi tertiary EFL teachers' knowledge of materials, questioning, ICT integration, and collaborative activities demonstrated their dynamic, innovative and context-sensitive PCK. However, these perceptions were mostly driven by linguistic and classroom management motifs rather than by the development of critical thinking. Moreover, these PCK bear individual exclusiveness, indicating irregularly and intuitively developed PCK.

Along with these, Bangladeshi tertiary EFL teachers faced several challenges that emerged from the institutions, students, teachers themselves and socio-cultural contexts. They highlighted the limited focus on critical thinking in university policy and curriculum, students' lack of English proficiency and critical thinking backgrounds and teachers' lack of training, psychological limitations and social conservatives and stigmatization of critical thinking. Nevertheless, they indicated the presence of supportive institutional conditions, teachers' professional preparedness, and learners' enthusiasm for critical thinking. Finally, though some teachers took individual measures to minimize barriers to teaching critical thinking, others did not care to address them.

Therefore, the findings of RQ 2 address RO 2, as both of them sought to identify Bangladeshi tertiary EFL teachers' critical thinking knowledge. The findings identified what tertiary EFL teachers know about the conception of critical thinking, revealing the nuances of their understandings. Additionally, their PCK moved beyond the theoretical

concept and captured a classroom-experience-oriented PCK of critical thinking, indicating a dynamic, context-sensitive yet fragmented PCK. Besides, the findings indicated the contextual factors that shape their CK and PCK of critical thinking. Thus, by capturing the breadth and depth of tertiary EFL teachers' CK and PCK, the findings adequately met RO 2.

5.2.3 Summary of RQ 3: To What Extent Do Critical Thinking Knowledge, Motivation, and Practices of Bangladeshi tertiary EFL Teachers Correlate?

RQ 3 investigated the correlation among Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation and practice. The relationships were explored under three hypotheses capturing three distinct connections among these variables. While null Hypothesis 1 and Hypothesis 3 highlighted the absence of any relationship between tertiary EFL teachers' critical thinking knowledge and their motivation and practice, respectively, null Hypothesis 2 highlighted the absence of any relationship between their motivation to teach critical thinking and practices.

The findings indicate a positive but weak correlation between tertiary EFL teachers' critical thinking knowledge and motivation. Likewise, there is a moderate, positive correlation between their motivation and practice. Finally, there is a moderate, positive correlation between their knowledge and practice. Therefore, all the null hypotheses are rejected. Moreover, findings show that Bangladeshi tertiary EFL teachers' critical thinking knowledge is more strongly correlated with their practices than their critical thinking motivation. Collectively, the findings of RQ 3 suggest that Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation and practice are interrelated.

5.3 Framework for EFL Teacher Development in Critical Thinking Instructions

Against the backdrop of the socio-economic complexities of the 4th industrial revolution, critical thinking has become a primary goal of higher education worldwide. Accordingly, Bangladeshi higher education introduced the OBE curriculum across all disciplines, including EFL teaching and learning, underscoring critical thinking as one

of the principal educational outcomes to cope with 21st-century global educational transformations (Milon et al., 2024; Saha & Reza, 2023). Despite this, a large number of Bangladeshi graduates remain unemployed after completing university education due to their lack of critical thinking skills (Khan, 2023; Neazy, 2025; Rizve, 2025).

English, as the global lingua franca, influenced by increased global mobilities and technological advances, is also evolving from a simple communication tool into a more complex one, requiring users to integrate critical thinking into the language (Bianco, 2014; Kramsch, 2014). Hence, EFL teachers need to possess sound knowledge of critical thinking along with linguistic knowledge to prepare the learners to cope with the 21st-century socio-economic complexities. Additionally, they need strong motivation to integrate critical thinking into their classes and upgrade their pedagogical practices, aligning with critical thinking goals. Thus, university teachers are at the center of the higher education revolution of this era, as they implement classroom changes to transform learners' lives. However, Bangladeshi tertiary EFL educators' knowledge, motivation, and practices in critical thinking have remained traditional and teacher-centered to a great extent (Chowdhury, 2016; Islam et al., 2021; Raqib, 2019; Ullah et al., 2022). Bangladeshi tertiary educators have a limited understanding of critical thinking (Islam et al., 2021) while they are insufficiently motivated to teach critical thinking (Ullah et al., 2022) and their pedagogical practices marginally promote learners' critical thinking (Chowdhury, 2016; Jamila & Zubairi, 2022; Siddique, 2020; Raqib, 2019). Nonetheless, insufficient attention has been paid to addressing these issues, as systematic and rigorous research data are limited in the field. Therefore, the study aimed to explore Bangladeshi tertiary EFL teachers' knowledge, motivation, and practices in critical thinking, filling information gaps and addressing problems identified in these fields by introducing the '**Framework for EFL Teacher Development in Critical Thinking Instructions'**.

The framework is an interactive plan for tertiary EFL teachers' professional development in critical thinking teaching. Instead of being a one-sided enterprise, the framework views teachers and institutions as collaborators who continuously contribute to ensuring professional development in critical thinking teaching. This framework addresses tertiary EFL teachers' professional development in critical thinking from a holistic perspective. Consequently, it can mitigate the institutional and personal barriers to professional development for critical thinking. In particular, the focus on teachers' motivational development, along with their critical thinking Content Knowledge (CK),

and Pedagogical Content Knowledge (PCK), can ensure teachers' active contribution to the fruitful implementation of critical pedagogy.

The study's findings inform the framework's pillars. Firstly, a lack of university policies is the principal barrier to teaching critical thinking in EFL classes. The findings indicate that a lack of university policy that highlights critical thinking as an explicit curricular goal reduces teachers' interest in teaching it, as they see this as an additional responsibility. In addition, findings revealed that teachers' and learners' conservative mentality restricts the teaching of critical thinking. Furthermore, findings showed that tertiary EFL teachers' time and energy to enhance their professional expertise to teach critical thinking are reduced by their current workloads. Besides, the findings indicated that IQAC proved inefficient in regulating the implementation of the OBE curriculum. Accordingly, the framework proposes policies to address the aforementioned barriers and facilitate the teaching of critical thinking in EFL classes.

Secondly, the findings indicate limited access to resources, such as journal articles and teaching and learning materials, including curriculum and textbooks, hinder tertiary EFL teachers' professional development and their ability to teach critical thinking. Moreover, the findings showed that tertiary EFL classrooms lack conducive physical features that limit learners' development of critical thinking. In addition, findings show that exam-centered education is a key hindrance to teaching critical thinking. Hence, the framework recommends providing the necessary resources for EFL teachers' professional development and for the teaching of critical thinking.

Thirdly, the results indicate that tertiary EFL teachers' motivation plays a role in transforming their knowledge into practice. However, they lack motivation to teach critical thinking because it is not a primary educational goal in university policies and curricula. Moreover, the overall conservative institutional culture reduces their willingness to teach critical thinking. Additionally, the findings show that tertiary EFL teachers have limited autonomy to integrate critical thinking into the curriculum and teaching. Besides, they receive limited institutional support for teaching critical thinking and for pursuing professional development activities. Furthermore, they put little effort into enhancing their professional competence in teaching critical thinking. Consequently, the framework suggests that universities introduce relevant policies and upgrade existing ones to address these motivational problems and accelerate the teaching of critical thinking.

Fourthly, findings indicate that tertiary EFL teachers possess underdeveloped CK and PCK of critical thinking. Moreover, they lack the skills to systematically incorporate critical thinking into class instruction, as they did not receive any training in this area. Consequently, the framework proposes developing tertiary EFL teachers' critical thinking knowledge and skills through resource development and capacity-building initiatives, such as training.

Fifthly, the findings demonstrate that tertiary EFL teachers' practices align only marginally with critical thinking pedagogy. Their material use, questioning strategies, teacher-student interaction, feedback practices, and modeling critical thinking and problem-solving and decision-making strategies lack focus on critical thinking development. Moreover, they have a restrictive attitude toward critical conversation in class. Therefore, the framework recommends that tertiary EFL teachers update their existing practices to align with critical thinking development goals.

Thus, the framework was developed to explain the phenomenon of Bangladeshi tertiary EFL teachers' lack of professional expertise rather than adopting any existing framework. The components, their relationships, and operational sequences were shaped by tertiary EFL teachers' contextual perceptions, feelings, and experiences. It captures the complex realities in which tertiary EFL teachers' critical thinking knowledge, motivation and practices are shaped by organizational policies, resource supplies and professional learning opportunities.

Additionally, existing literature and theories inform the components of the framework. The framework shows that teacher professional development for improved knowledge, motivation, and practices in critical thinking is an interactive process between the organization and the educators. This basic framework, which was developed based on self—determination theory, involves universities as the agency and teachers as the executors. When the university creates conditions for teaching critical thinking through policy, resource and capacity development (Anderson et al., 2001; Artman et al., 2020; Elder, 2019; Khan, 2008; Ryan & Deci, 2000; Shrestha et al., 2021), the teachers' knowledge and skills will improve and they will be motivated, both extrinsically and intrinsically, to teach critical thinking. The system will be internalized over time, and they will effectively and systematically incorporate critical thinking through self-directed, continuous professional development, self-reflection, and updated instructional practices (Khan, 2008; Ryan & Deci, 2000; Portelli, 1994; Rogers, 2003; Vadivel et al., 2021; Vygotsky, 1978). Overall, the framework, infused

with the KAP model within the innovation-diffusion theory, aims to make a sustainable contribution to Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation, and practices (Rogers, 2003). Figure 5.1 visualizes the framework components and their connections.

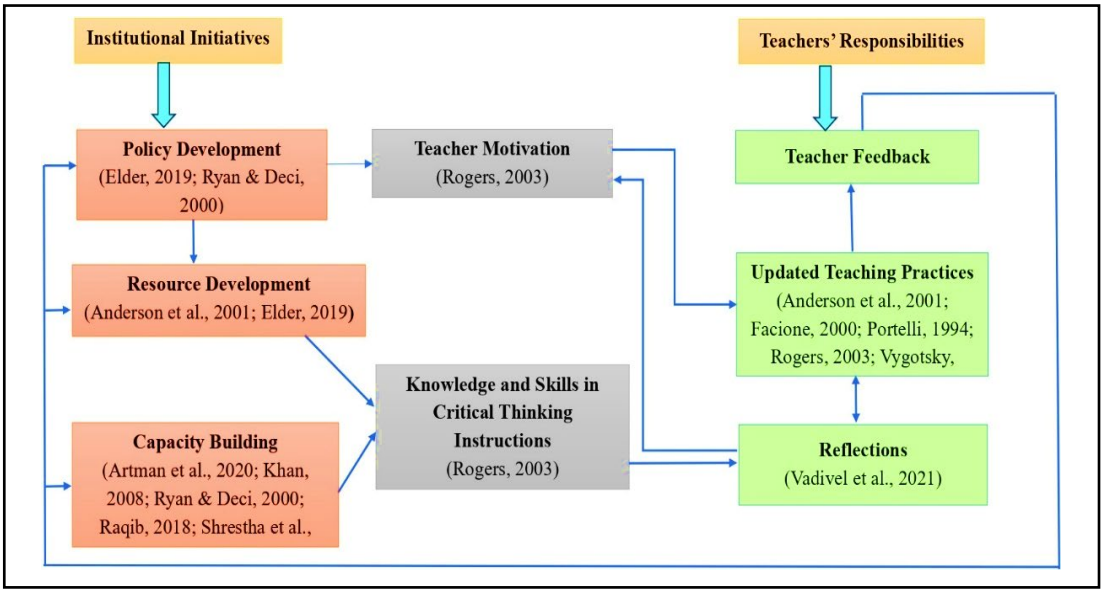

Figure 5.1 Framework for EFL Teacher Development in Critical Thinking Instructions

Figure 5.1 shows that the framework's components can be divided into two groups: institutional initiatives and tertiary EFL teachers' responsibilities. Institutional initiatives include policy development, which results in tertiary EFL teachers' motivation to teach critical thinking and resource development and capacity building, which enhance their critical thinking knowledge and skills. However, tertiary EFL teachers' responsibilities include reflecting on their newly developed knowledge and skills and implementing them in the class and providing feedback to further enhance the institutional policy, develop resources and build capacity.

Policy Development means developing new policies and updating the existing ones to facilitate tertiary EFL teachers' motivation to teach critical thinking. Developing conducive policies will create an institutional environment that supports teaching critical thinking. Specifically, including critical thinking in core university policy works as an external impetus for the teachers to achieve the teaching-learning goal. Thus, university policies are crucial for developing tertiary EFL teachers' motivation to teach critical thinking and for ensuring the implementation of critical

pedagogy. These policies also create the environment to foster EFL teachers' sense of autonomy, relatedness and competence. Hence, university policies are central to this framework, providing clear guidance, expectations, accountability, and shared responsibility to promote critical thinking among Bangladeshi undergraduate EFL learners.

Resource Development refers to providing materials and infrastructural support that create the opportunity to explore different viewpoints and enhance both teachers' and learners' cognitive engagement. This includes access to online resources, technological tools inside the classroom and architectural features. Therefore, resource development is an essential part of this framework because it enables tertiary EFL teachers to meaningfully apply their critical thinking knowledge and skills.

Capacity Building means building teaching competence through training and facilitating self-directed professional development. Hence, capacity building is a core element of the framework, as it will fundamentally prepare teachers to implement critical thinking pedagogy.

Knowledge and Skills indicate tertiary EFL teachers' proper understanding of the conception of critical thinking, understanding of the techniques and strategies for incorporating critical thinking into the classroom, and their ability to effectively translate this knowledge into practice. This knowledge and these skills will be developed in tertiary EFL teachers through institutional training arrangements and the facilitation of EFL teachers' self-directed professional development.

Reflections suggest that tertiary EFL teachers will actively reflect on the newly acquired knowledge and skills in teaching critical thinking, evaluating their relevance and feasibility in their contexts. Through reflection, they will choose appropriate materials and strategies to engage learners in critical thinking. Their reflection will also contribute to their motivation to teach critical thinking. Thus, reflection is an important component of this framework, as it connects tertiary EFL teachers' learning with their pedagogical practices that ensure the effective integration of critical thinking into the classroom.

Motivation signifies tertiary EFL teachers' conscious desire and efforts to teach critical thinking. Their external motivation will be shaped by institutional policies that both demand and facilitate the explicit teaching of critical thinking. Conversely, their internal motivation will stem from self-efficacy beliefs emerging from reflections on their critical knowledge and skills. Tertiary EFL teachers' motivation also involves

their sense of autonomy, relatedness and competence for teaching critical thinking. Their sense of relatedness indicates that they feel a sense of belonging to the institution through its recognition of EFL teachers' efforts and contributions to teaching critical thinking. Moreover, tertiary EFL teachers' sense of autonomy suggests that they internalize institutional expectations and rules to promote learners' critical thinking. Finally, tertiary EFL teachers' competence means that they strive to enhance their intellectual and pragmatic abilities to teach critical thinking. Tertiary EFL teachers' motivation is a key determinant of whether they will integrate critical thinking into the classroom.

Updated Instructional Practices indicate the transformation from teacher-centered, language-focused teaching to student-centered, critical-thinking-integrated language instruction. Tertiary EFL teachers will upgrade their instructional styles and strategies whenever required to attain critical thinking learning goals. They will update this based on their reflections on their practices as part of continuous professional development facilitated by the universities. This is an integral part of their professional development in critical thinking as it allows them to continuously align their teaching practices with their evolving knowledge, experience and learners' needs and institutional expectations.

Teacher Feedback indicates tertiary EFL teachers' evaluations of the professional development opportunities and support provided by the universities. They will provide this feedback based on their classroom experiences. Their feedback will be used to further improve university policies, resources, and capacity development initiatives. Therefore, teacher feedback is significant for maintaining an improvement cycle for the framework.

Figure 5.1 indicates that institutional initiatives flow down from policy development to inform resource development. Policy development motivates teachers, which in turn leads to updated teaching practices. After that, institutional initiatives for resource development and capacity building develop tertiary EFL teachers' knowledge and skills in critical thinking instructions. Following this, teachers reflect on their knowledge and skills in teaching critical thinking, which strengthens their motivation to teach it. This motivation then results in their updated teaching practices for critical thinking. Moreover, the relationship between their reflections and the upgradation of teaching practices is continuous and mutual. Next, teachers provide feedback based on

their classroom experiences to further revise the policies, resources, and capacity-building supports.

The framework is prescriptive, providing clear and workable guidance for universities and tertiary EFL teachers to develop and implement policies, resources, pedagogical practices, and professional development initiatives, rather than simply describing or predicting conditions. Additionally, each item of the framework is sequentially connected, indicating how institutional reforms and EFL teachers' professional development should be enacted. In particular, by incorporating monitoring, reflection, and feedback, the framework becomes a meticulous and actionable plan rather than a mere narration. However, the framework is expected to enhance Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation, and practices; these expectations are rationally developed based on existing theories and the study's findings rather than mere predictions. Briefly, the framework provides a logical and actionable direction for change, specifying stakeholders' roles and their paths and sequences, with shared responsibilities and continuous evaluation of the process to guarantee sustainable development in Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation, and practices.

Implementing the framework requires coordination among multiple stakeholders and involves several stages. Its implementation should begin with reforming policies that mandate critical thinking as a core, explicit learning outcome for programs and EFL courses. After this, universities should create policies to foster a comfortable educational environment that encourages critical thinking across the university premises. A dedicated team, including representatives from the university governing body, faculty members, and students, should develop safe critical dialogue protocols and actively work to implement them. Co-curricular activities with scope for critical conversation should be encouraged. Departments should integrate critical dialogue into routine activities, creating opportunities for teachers and students to exchange opinions. At the same time, physical and digital spaces, like online discussion forums and a critical thinking integrated language lab, should be activated to materialize the critical thinking environment policy.

Then, universities should develop new EFL curricula or upgrade existing ones by establishing a committee comprising delegates from EFL teachers and the IQAC to determine learning outcomes, course materials, assessment criteria, and teaching guidelines to achieve the critical thinking goals. The new curriculum should be piloted

to test feasibility and effectiveness. Based on the findings and teachers' feedback, universities should further revise the curriculum and guide practices through continuous feedback and peer reviews.

Following curriculum development, universities should take systematic capacity-building initiatives to prepare teachers to implement the curriculum changes in the classroom. Simultaneously, universities should reduce the administrative burden on teachers. After this, teachers should reflect on the knowledge and skills gained from the capacity-building initiatives to evaluate and apply them in their classes.

Once university policies, curriculum, and infrastructure are fully implemented, teachers' feedback should continuously inform outcomes and challenges for further development of policies, resources, and professional development initiatives. Additionally, IQAC should be empowered with the necessary manpower, resources, and budget to monitor and review the entire mechanism, identify emerging challenges, and ensure that the implementation aligns with global and institutional realities and learners' needs.

Finally, within these phases, tertiary EFL teachers will continue pursuing self-directed professional development to hone their critical thinking knowledge, motivation and practices. After receiving formal training from the institutions, they will continue to reflect on their knowledge and skills and upgrade their practices through relevant self-directed professional learning. Hence, tertiary EFL teachers' self-directed professional development will be a continuous process within the other dimensions of the framework.

5.3.1 Institutional Initiatives

Within this framework, universities serve as the main facilitators, providing structural, professional, and motivational support to tertiary EFL teachers to effectively integrate critical thinking into the classroom. They will provide this support through policy and resource development and capacity building.

5.3.1.1 Policy Development

Critical thinking should be explicitly underscored as a core educational goal. The universities' missions, visions, and action plans must consider it a strategic priority

and a central, assessable learning outcome. This will inspire accountability and support required to facilitate teaching critical thinking and relevant teacher professional development.

Moreover, universities should create policies that provide platforms and protections for critical dialogue among tertiary EFL teachers and learners. Critical thinking cannot grow without feeling safe, as it often comes with risk-taking and dealing with controversial topics. Specifically, in the Bangladeshi conservative socio-cultural context, teachers and learners consciously avoid critical dialogues. This will create the foundation for critical inquiry within the socio-cultural limitations.

Universities should foster a liberal thought-practicing environment where teachers and learners can express their ideas and plans without fear of threats or harm. The policies should encourage the integration of controversial and sensitive content and discussions, inside and outside the classroom, through a 'critical dialogue' protocol that provides clear guidelines for practicing and protecting critical thinking.

Additionally, policies and actions should be taken to reduce the administrative workloads of tertiary EFL teachers, allowing them to allocate more time and energy to professional development and integrating critical thinking into their classes. This is not only a logistical facilitation but also a motivational drive that will make tertiary EFL teachers feel that teaching critical thinking is not an extra burden but a desirable teaching and learning goal. This will also allow them the required autonomy and develop the competence to nurture the learners' critical thinking. This can be achieved by utilizing technologies to manage classes, such as attendance tracking, providing feedback, data entry, grading, and lesson planning. Moreover, the paperwork should be done by the administrative staff. Most importantly, the class size should be reduced not only to reduce administrative tasks, such as evaluating and counselling, but also to increase attention and effort in teaching critical thinking. This will also allow them enough time to participate in self-directed professional activities.

The Institutional Quality Assurance Cell (IQAC) should be strengthened with adequate funding and human resources to conduct evaluations and guide revisions. It has to train members to perform their roles appropriately. It has to monitor the critical thinking outcomes of the curriculum, compare evolving trends in international EFL curricula, and revise universities' EFL curricula in collaboration with faculty members. Moreover, it should monitor teaching practices to verify alignment between instructional approaches and the institution's critical thinking objectives. This can be

done through developing evaluation tools, coordinating departmental monitoring, analyzing evidence and providing feedback and recommendations.

5.3.1.2 Resource Development

Universities should develop appropriate resources, such as curricula, materials, and infrastructure, to facilitate the teaching of critical thinking in EFL classes. The EFL curriculum should be revised to clearly indicate critical thinking as the course outcome. Since Bangladeshi education revolves around exams and results, critical thinking should be explicitly incorporated into the EFL exam questions and test evaluations. Leveraging the washback effect to design and assess tests will promote tertiary EFL teachers' sense of relevance and competence in effectively incorporating critical thinking.

Moreover, the curriculum should guide the development of textbooks that explicitly facilitate critical thinking in EFL classes. Without this, the tertiary EFL teachers with fragmented CK and PCK of critical thinking will remain without a tool to incorporate critical thinking into their teaching. The textbooks should go beyond focusing on English proficiency development and include controversial, multicultural, literary, and contextually grounded texts that invite critical analysis and evaluation. Additionally, the textbook should include activities to involve problem-solving, decision-making, and reasoning. Similarly, speaking and listening materials and tasks should involve critical thinking. While doing so, the textbooks and other materials should equally emphasize critical thinking dispositions to uphold the courage of tertiary EFL teachers and learners in critical dialogues and to foster a student-centered learning environment. Most importantly, tasks need to be designed to facilitate social learning, such as project-based tasks, debating, and collaborative tasks.

Additionally, universities should equip classrooms with modern instructional and learning technologies. They should include interactive boards, high-speed internet connection and online collaborative platforms to promote inquiry-based and social learning. Moreover, they should develop well-resourced physical and digital libraries to access research journals, and state-of-the-art teaching and learning content that facilitate critical thinking instructions and learning. They should establish critical thinking language labs with spaces for practicing problem-solving, debating and project-based activities, going beyond the limitations of classroom formalities.

Furthermore, they should allocate adequate funds to maintain and update these technologies.

Furthermore, universities should ensure architectural sensitivity and furniture flexibility to create a relaxing, cognitively conducive classroom physical environment. They should ensure adequate natural light, ventilation and noise control that facilitate greater cognitive engagement. This can be done by utilizing a building structure that ensures maximum daylight access, adequate and efficient air flow and noise controlling mechanisms and technologies and adjustable interior designs. In addition, they should use flexible furniture and spatial openness to help engage teachers and learners in diverse constructivist activities, such as collaborative, inquiry-based and project-based learning. This can be done by using movable and rearrangeable furniture.

5.3.1.3 Capacity Building

Universities should take action to enhance tertiary EFL teachers' knowledge and skills to teach critical thinking. To build capacity among Bangladeshi tertiary EFL teachers, the universities should mandate and support professional development initiatives. They can arrange in-house training programs where colleagues can share their knowledge and expertise. They can also arrange workshops, conferences, and seminars to not only transfer the CK but also provide guidance on implementing critical pedagogy. The training should equip tertiary EFL teachers with the knowledge and skills to conduct constructivist, student-centered classes. In addition, these should focus on enhancing the tertiary EFL teachers' organized understanding of adopting, designing and implementing materials for teaching critical thinking. Moreover, they should train EFL teachers to use questioning as a key teaching strategy and ICT as a fitting tool, supporting adjustments within the limitations of the current systems. Furthermore, they should develop EFL teachers' knowledge and skills to harness modern technologies as powerful tools for teaching critical thinking. Additionally, they should introduce peer coaching by pairing novice EFL teachers with the experienced ones. The former will have the opportunity to observe, provide feedback, and adopt best practices to promote critical thinking.

Apart from this, the authority should mandate self-directed professional development activities focused on critical thinking. They may require tertiary EFL teachers to attend training, workshops, seminars, and conferences, and to demonstrate

research productivity to achieve a salary increase or promotion. In this regard, universities should facilitate and support EFL teachers' self-directed professional development endeavors. Particularly, universities should allocate adequate funds to support EFL teachers' participation in high-quality conferences, seminars, webinars and research projects. They can also introduce rewards for achieving professional development. This will motivate teachers to strive for competence in CK and PCK.

5.3.2 Teachers' Role in the Framework

The tertiary EFL teachers will work as the executors of the policies, teaching resources and capacity-building outcomes facilitated by the institutions. They will implement these by preparing psychologically, implementing a constructive teaching approach, using effective strategies, reflective teaching practices and participating in self-directed, continuous professional development activities.

5.3.2.1 Fostering Tertiary EFL Teachers' Open-mindedness

The teachers should abandon the traditional, rigid mentality. They should develop mental flexibility to welcome students' freedom to voice their thoughts, ask questions and take responsibility for their learning. They should get rid of the cultural and social boundaries to accept and encourage controversial discussions. Since controversial dialogues are restricted in the Bangladeshi context, they should refrain from making judgmental and hurtful comments on the learners' ideas. Moreover, they should develop a sense of respect for the learners' views and thoughts as valid contributors to the learning process.

5.3.2.2 Adopting Constructivist Teaching Practices

Bangladeshi tertiary EFL teachers should shift their role as controllers of the classroom dynamics to facilitators. The framework requires them to allow the students to take responsibility for their own learning and guide and support them whenever needed. Regarding this, they need to incorporate collaborative activities that promote problem-solving, decision-making and HOTs. They need to incorporate debates, case studies, project-based activities, simulations and role-plays to engage learners in critical

thinking. Moreover, they are required to leverage technological support to increase student engagement in HOTs, facilitate interactive learning, and provide access to authentic, culturally and contextually relevant materials.

5.3.2.3 Engaging in Reflective and Self-Directed Professional Development

Realizing the knowledge and skills from professional development training and activities requires internalizing them through deep reflection, self-evaluation, and self-development. The framework requires them to reflect on their latest teaching practices to identify their strengths and weaknesses and to verify the alignment between institutional policies on critical pedagogy and the impact of their practices. Specifically, they are required to reflect on their teaching approach, strategies, and their own behaviors and thoughts to identify areas for improvement in cultivating learners' critical thinking.

Tertiary EFL teachers are also required to reflect on their self-directed professional development activities to identify gaps and set targeted goals to enhance their knowledge, motivation, and skills in teaching critical thinking. They can keep reflective journals, use student evaluations and self-assessment, and participate in peer observation to gain an understanding of their teaching effectiveness, identify best practices, and implement them in their own practice.

5.3.2.4 Integrating Effective Questioning and Language Strategies

Tertiary EFL teachers are required to use effective teaching strategies to develop learners' critical thinking. They should use questioning to engage learners in reflective and analytical thinking. The framework requires them design activities that include open-ended and referential questions. Moreover, when engaging low-proficiency students in critical thinking, they should use scaffolding systematically and deliberately increase the difficulty of thinking. They have to use graphic expressions, like picture prompts to facilitate both language and critical thinking of these learners. Furthermore, they are required to use code-switching strategically to clarify complex ideas and gradually rely less on their mother tongue support to build their confidence in English and critical thinking. They are required to choose materials that inherently invite critical

thinking and discussion, such as literary texts, current-issue newspaper articles, and editorials that provoke analysis, evaluation, and opinion formation.

5.3.2.5 Engaging in Critical Thinking Professional Development

Bangladeshi tertiary EFL teachers should engage themselves in professional development activities that not only promote their own critical thinking but also their CK and PCK of critical thinking. They should attend workshops, training, conferences, seminars and webinars that highlight teachers' knowledge development and innovative strategies for teaching critical thinking. Particularly, they are required to engage in more research activities to hone their problem-solving, decision-making, and critical thinking skills, as well as their HOTs skills. In addition, they are required to participate in collaborative research activities to build professional networks, exchange ideas and practices, and strengthen their CK, PCK, and critical thinking practices.

5.3.3 Contribution of the Framework to Tertiary EFL Teachers' Professional Development for Critical Thinking

The framework fills a major gap in the literature by providing a comprehensive plan for in-service tertiary EFL teachers' professional development in critical thinking instructions. There is a lack of a framework that focuses on tertiary EFL teachers' professional development in critical thinking intructions. The existing studies proposed frameworks for in-service tertiary EFL teachers' professional development in technology use (Nazari et al., 2019) and blended learning (Vo et al., 2025), while others focused on general professional development strategies, like reflective practices (Uştuk & Costa, 2021), self-directed professional development (Bayram & Canaran, 2018), collaboration (Kanokorn et al., 2014) and overall professional competence development of tertiary EFL teachers (Marey et al., 2022; Ngo et al., 2022). In addition, most frameworks highlighted the professional development of pre-university-level EFL teachers (Moorhouse et al., 2024; Nguyen & Sit, 2024). Moreover, many professional development frameworks have been developed for pre-service EFL teachers (Kaçar, 2022; Li, 2025).

Besides, though Vanderlinde et al. 's (2016) framework involves both teachers and institutions as partners in teacher professional development, it focuses only on

general pedagogical performance rather than on professional development for critical thinking instructions. Likewise, Rahman's (2019) framework for teacher professional development is comprehensive, as it encompasses broader links such as socio-cultural factors, policies, the institutional environment, and teachers' individual characteristics. However, this is aimed at primary school teachers and general professional development.

Besides, professional development frameworks for Bangladeshi EFL teachers do not focus on tertiary EFL teachers' competence building in critical thinking instructions. Cross et al.'s (2022) framework highlights the professional development of Bangladeshi school teachers. Although the Evidence-Based Teacher Development (EBTD) involves a structured circle of reflection, feedback, and classroom practices, it is mainly aimed at enhancing EFL teachers' general pedagogical performance and does not focus on teaching critical thinking (EBTD, 2025).

Thus, the framework offers a new and context-responsive tool. It connects tertiary EFL teachers' professional development domains with institutional structures and systems. It transforms the abstract concepts of professional development in critical thinking knowledge, motivation and practices into actionable measures. The framework is also a diagnostic mechanism for universities to identify issues in policies, curriculum, resources, and teachers' knowledge, motivation, and abilities that impede the integration of critical thinking into EFL classes. Moreover, it works as a coordination tool for university policymakers, IQAC, curriculum and materials designers and developers and teachers to share responsibilities in the process of tertiary EFL teachers' professional development in critical thinking instructions. Additionally, it serves as a template for designing training for tertiary EFL teachers and assessment modules aligned to critical thinking pedagogy. Furthermore, it can be used as an effective tool to evaluate the alignment between institutional goals and teaching competencies and performances. Therefore, the framework serves as a practical, systematic, and viable tool for tertiary EFL teachers' professional development to effectively integrate critical thinking into their classes.

5.3.4 Scope of the Framework

The framework is designed to ensure holistic professional development for in-service tertiary EFL teachers to systematically and effectively incorporate critical

thinking into their classes. Additionally, the framework covers institutional and individual factors that directly determine tertiary EFL teachers' integration of critical thinking into their classes. These aspects include institutional support structures, professional learning facilities and classroom pedagogical changes. Moreover, the framework guides the development of critical thinking-integrated curriculum, focusing on curricular goals, materials and infrastructural developments. Besides, it provides specific guidelines for fostering self-directed professional development and critical thinking, highlighting strategies such as questioning and student-centered instruction. Furthermore, it applies to similar tertiary EFL conditions. Particularly, it applies to general EFL education across all disciplines at the university level.

However, several aspects are out of the scope of this framework. This framework does not apply to all educational levels. Nor does it apply to pre-service tertiary EFL teachers. Moreover, this framework does not specify any particular curriculum for teaching critical thinking. In addition, it does not suggest any particular self-directed professional development activity. Furthermore, it does not involve the socio-cultural aspects that may influence the teaching of critical thinking in tertiary EFL settings.

5.4 Contributions of the Study

The study makes a significant contribution to the field of tertiary EFL teachers' critical thinking knowledge, motivation, and practice development. The contributions range from a practical to a theoretical understanding of the complex connection among these variables. Thus, the findings contribute to the conceptual framework. Additionally, its methodological contribution lies in the use of a sequential mixed-method design. Apart from this, it enriched the contextual understanding of the problem under discussion.

5.4.1 Theoretical Contributions

The study substantially contributes to the theoretical framework. The interrelationship among tertiary EFL teachers' critical thinking knowledge, motivation and practices was derived from the KAP model in the innovation diffusion theory. Within this overarching framework, the three variables were supported by relevant

theoretical underpinnings, leading to methodological decisions. Along with the KAP model, the study contributed to variable-specific theories, including the theory of teacher knowledge, Bloom's taxonomy, self-determination theory, constructivism, and a theoretical discussion of critical thinking instruction. Thus, the study's contribution to its conceptual framework is explained through shedding light on its contribution to the theoretical framework.

Firstly, the study employed the KAP model view Bangladeshi tertiary EFL teachers' knowledge, motivation and practices as interconnected concepts. The study extends the theory by showing that, in a contextually restricted setting, the conditional relationship between knowledge, motivation, and practice may not operate linearly but can be shifted by external factors. Secondly, the study used Shulman's (1986) theory of teacher knowledge to explore tertiary EFL teachers' critical thinking knowledge. The findings expand the theory, indicating that teachers' knowledge alone is insufficient to determine their conducive practices. Nevertheless, teachers' CK and PCK significantly determine their motivation to teach.

Thirdly, the study used Bloom's taxonomy as the theoretical basis for tertiary EFL teachers' CK for critical thinking. The study's findings empirically strengthened this theory, showing the growing awareness of Bloom's taxonomy as a conceptual framework for critical thinking. Moreover, the study extended the theory, revealing that it lacks the contextual nuances that hinder its application in overpopulated, exam-centered educational settings, where teachers lack proficiency in effectively implementing it. Fourthly, the study incorporated SDT to explore Bangladeshi tertiary EFL teachers' motivation to teach critical thinking. The findings extended the theory, unfolding that in an unfavorable institutional environment, where policy, institutional goals and support, and teachers' extrinsic and intrinsic motivation cannot flourish, teachers cannot pursue autonomy, competence, and relevance.

Fifthly, the study developed a theoretical basis for critical thinking instructional practices based on the theoretical discussions of Facione (1990, 2000, 2011) and Halpern (2014). These theories of critical thinking were used to explicate critical thinking teaching strategies and behaviors. The study enriched the theoretical suggestions empirically showing that the facilitation of student reflection, open-ended questioning, problem-solving and teachers' HOT modeling as effective for promoting critical thinking. Additionally, it shows that context-specific teaching strategies are fruitful in developing learners' critical thinking. Besides, the study extends Portelli's

(1994) proposition on supportive teaching behaviors for promoting critical thinking, specifying friendly greetings as a universally practiced teaching gesture that facilitates learners' development of critical thinking.

Finally, the study integrated Vygotsky's (1978) constructivist theory to explore tertiary EFL teachers' critical thinking instructional practices. Within the constructivist framework, ICT integration and the facilitation of students' opinions are student-centered instructional strategies that promote critical thinking. Moreover, collaborative activities as a constructivist strategy can be employed even in resource-constrained and crowded classes. Particularly, the growing acceptance and applicability of this theory were demonstrated in tertiary EFL teachers' application of positive feedback. However, the study identified some gaps in constructivist theory. The theory fails to capture the contemporary contextual complexities of Bangladeshi tertiary EFL settings, where multiple structural, systematic and socio-cultural factors lead to the existing practices of judgmental, discouraging and unhelpful feedback and insufficient implementation of problem-solving activities and student-centered instruction . This implies that the theory was developed in Western contexts, where many of the barriers, such as large classes, conservative social values, and contemporary educational limitations, did not exist. Thus, the study extends the theories that underpine this research, highlighting both their applicability and their contextual gaps. This will guide scholars in revisiting the theories with targeted areas of improvement.

5.4.2 Methodological Contributions

Methodologically, the study contributes to the field of EFL research by demonstrating the utility of a hybrid thematic analysis. Although there are many discussions of the use of hybrid thematic analysis (Proudfoot, 2022; Fereday & Muir-Cochrane, 2006; Swain, 2018), its application remains limited. Moreover, the majority of the existing studies (Abasaid & Ferreira, 2022; Alasmari, 2022; Adhikari & Pandey, 2024; Essia & Khallaf, 2025; Ilyas & Istaryatiningtias, 2025; Ilyas et al., 2025; Kirko & Woldearegawi, 2024; Lynda, 2023; Marin & Pava, 2017; Mrabti et al., 2023; Nguyen, 2022; Ullah et al., 2022; Yamin et al., 2022; Zhang et al., 2020) on tertiary EFL teachers' knowledge and practices of critical thinking, involving both qualitative (monomethod) and mixed methods, employed inductive thematic analysis. Even Prommak's (2019) PhD thesis on Thai tertiary EFL teachers' knowledge and practices

of critical thinking employed inductive thematic analysis. Similarly, studies on tertiary EFL teachers' motivation to teach critical thinking. This indicates a dearth of deductive thematic analysis and hybrid thematic analysis practices. Hence, by applying this data analysis approach, the study demonstrates how deductive and inductive coding processes can be integrated systematically to generate contextually connected and nuanced findings. In doing so, the study extends the theoretical discussions on hybrid thematic analysis by practically applying this. In addition, this analytical approach enhanced the credibility and depth of the findings by connecting them with the existing theoretical constructs while remaining open to the emerging themes from participants' exclusive thoughts, feelings and experiences.

Additionally, the study makes a methodological contribution by developing a transparent data saturation protocol, offering future researchers a clear operational matrix to definitively assess and document code saturation. Though existing methodological discussions emphasize data saturation in qualitative studies (Fusch & Ness, 2015; Guest et al., 2006; Saunders et al., 2017), real examples of saturation analysis are limited. Moreover, inductive thematic data saturation is available in medical research (Apers et al., 2016; Frunză & Sandu, 2017; Powell & Carlton, 2023), but it is rarely practiced in EFL-related research. Likewise, while theoretical discussions on deductive code saturation are available (Fereday & Muir-Cochrane, 2006; Hennink et al., 2017), its practical application is scarce. Therefore, by applying inductive thematic saturation and deductive code saturation in the tertiary EFL research context, the study practically demonstrates how data saturation can be operationalized in hybrid thematic analysis. This approach strengthens analytical transparency and rigor and enhances the trustworthiness of the findings.

Moreover, the use of an exploratory sequential design mixed methods is a significant methodological contribution in the field of EFL research. Most of the studies used a monomethod to explore EFL teachers' knowledge and practices of critical thinking (Abasaid & Ferreira, 2022; Adhikari & Pandey, 2024; Bibi & Hanif, 2023; Ilyas & Istaryatiningtias, 2025; Ilyas et al., 2025; Lynda, 2023; Marin & Pava, 2017; Mrabti et al., 2023; Nguyen, 2022; Prommak, 2019; Toshpulatova & Kinjemuratova, 2020; Yamin et al., 2022). Likewise, tertiary EFL teaches' motivation to teach critical thinking was investigated using a monomethod (Küçükoğlu, 2013). However, the use of mixed methods to explore this field allows a comprehensive understanding of not only tertiary EFL teachers' knowledge and practices of critical thinking but also their

motivation to integrate critical thinking into their instructions. The mixed data generated through the exploratory sequential design emboldens the study by facilitating triangulation, validation and complementary findings. Accordingly, the study methodologically contributes to the EFL research context by modeling an exploratory sequential mixed method design that yields richer and more contextually connected insights into tertiary EFL teachers' knowledge, motivation and practices of critical thinking.

Furthermore, the methodological rigor in integrating qualitative and quantitative approaches constitutes the methodological contribution of the study. Existing mixed-method studies on EFL teachers' understanding and practices of critical thinking (Alasmari, 2022; Essia & Khallaf, 2025; Kirko & Woldearegawi, 2024; Knomari et al., 2021; Ullah et al., 2022; Zhang et al., 2020) lack methodological rigor because the transition from qualitative to quantitative or vice versa was not transparent, as they did not inform how one of the methods informed or guided the other. For example, they did not inform if the qualitative phase guided the generation of quantitative research questions and instruments. Neither did they systematically triangulate the findings from qualitative and quantitative approaches. On the contrary, the present study maintained methodological rigor by systematically generating RQ 3 and the survey questionnaire based on the findings of RQ 1 and RQ 2. Thus, the study contributes methodologically to EFL research by exemplifying the rigorous, transparent and systematic implementation of exploratory sequential design through RQ integration and instrumentation.

Besides, the present study methodologically contributes to the research on tertiary EFL teachers' knowledge and practices of critical thinking by rigorously and systematically triangulating qualitative and quantitative findings to ensure the findings' credibility. Previous mixed-method studies on tertiary EFL teachers' knowledge and practices of critical thinking lack the data triangulation required to ensure convergence and validation of findings (Alasmari, 2022; Essia & Khallaf, 2025; Kirko & Woldearegawi, 2024; Ullah et al., 2022). The integration of multiple data sources also reduced methodological bias and enhanced interpretive accuracy. Thus, this methodological practice contributes to EFL research by providing a more rigorous, transparent and replicable model for conducting mixed methods research on EFL teachers' knowledge, motivation and practices.

Finally, this study offers a distinct methodological contribution to the EFL research context by establishing a highly transparent framework for validity and reliability, thereby addressing a recognized need for greater methodological replication and rigor in exploring tertiary EFL teachers' knowledge, motivation and practices of critical thinking. In most of the studies (Adhikari & Pandey, 2024; Alasmari, 2022; Anggraeny & Khongput, 2022; Essia & Khallaf, 2025; Ilyas & Istaryatiningtias, 2025; Ilyas et al., 2025; Kirko & Woldearegawi, 2024; Knomari et al., 2021; Küçükoğlu, 2013; Lynda, 2023; Marin & Pava, 2017; Mrabti et al., 2023; Nguyen, 2022; Toshpulatova & Kinjemuratova, 2020; Ullah et al., 2022; Yamin et al., 2022; Zhang et al., 2020) on tertiary EFL teachers' knowledge, motivation and practices of critical thinking, including both monomethod and mixed methods, the validity and reliability of instruments are absent. Contrarily, the present study ensured the instruments' validity and reliability by performing construct validity, face validity, inter-rater reliability, peer-debriefing, scale reliability and self-reflexivity. Therefore, the study methodologically contributes to the EFL research domain by setting a strong methodological standard. The implementation of the validity and reliability measures enhanced the trustworthiness of the research instruments. Particularly, on the backdrop of the common research practices, lacking validity and reliability measures, the study provides a methodological model for future researchers.

5.4.3 Contextual Contributions

The study makes a significant contextual contribution by addressing the empirical scarcity of research situated within the Bangladeshi higher education ecosystem. By examining this context, the study illuminates how the teaching and learning of critical thinking operate within a sociocultural framework characterized by teacher-centered pedagogy, examination-oriented learning practices, hierarchical classroom relationships, and conservative educational values. Although Ullah et al. (2022) investigated Bangladeshi tertiary EFL teachers' knowledge, motivation and practice of critical thinking in writing proficiency, the study lacks a comprehensive exploration of the contextual and pedagogical factors that hinder teachers' integration of critical thinking across all language skill-based instructions. In the Bangladeshi context, teachers' inclination to traditional, teacher-centered, lecture-based instructions, exam-oriented educational system and socio-cultural restrictions

significantly influence tertiary EFL teachers' integration of critical thinking. By examining the broader instructional domain, the study provides a deeper understanding of the context that encompasses EFL instruction irrespective of skills taught. Apart from this, it addresses the gap in the literature regarding the issue of tertiary EFL teachers' motivation to teach critical thinking not only in the Bangladeshi context but also in the global periphery.

Additionally, the study makes a significant contextual contribution by focusing on QS-ranked universities in Bangladesh. In doing so, it provides unique insights into how higher education institutions in an emerging Global South educational context navigate the dual pressures of global marketization metrics and localized institutional mandates in Dhaka, the capital city of Bangladesh. Since most of the existing studies (Abasaid & Ferreira, 2022; Alasmari, 2022; Adhikari & Pandey, 2024; Bibi & Hanif, 2023; Essia & Khallaf, 2025; Ilyas & Istaryatiningtias, 2025; Ilyas et al., 2025; Kirko & Woldearegawi, 2024; Lynda, 2023; Marin & Pava, 2017; Mrabti et al., 2023; Nguyen, 2022; Prommak, 2020; Ullah et al., 2022; Yamin et al., 2022; Zhang et al., 2020) selected participants from universities without considering those universities' ranking, there remains a scarcity of empirical evidence on how EFL teachers, particularly in QS-ranked universities in Dhaka, perceive, feel and practice critical thinking. The QS-ranked universities situated in Dhaka are the top-ranked and the most resource-rich universities in the country. Moreover, these universities made their place in the ranking based on their research productivity. By examining critical thinking knowledge, motivation and practices of EFL teachers in these universities, the study provides context-specific insights into the teachers' professional preparedness for incorporating critical thinking into the classroom. Also, the study develops a strong understanding that, even in comparatively advantaged and academically competitive tertiary EFL settings, the teaching and learning of critical thinking is hindered by multifaceted challenges. Despite the challenges, the teachers in these universities engage in research activities that not only enhance their own critical thinking skills and dispositions but also deepen their knowledge, motivation, and practices of critical thinking. Being part of QS-ranked universities, they strive to retain their positions through research productivity. Nevertheless, the strife to secure a position in the QS ranking and being part of the global academic community cannot undermine the issues rooted in the overall education system and socio-cultural factors that facilitate tertiary EFL teachers' professional development and pedagogical practices of critical thinking.

Therefore, the study's contributions to the contextual understanding of teaching critical thinking are not limited to under-resourced and low or no-ranking universities. Rather, the problems and challenges persist in well-resourced and globally aligned universities that are expected to promote learners' critical thinking. This contextual understanding indicates that the problems of teaching critical thinking in Bangladeshi universities are rooted in the education system rather than resources.

Moreover, the study makes contextual contributions by focusing on the classrooms' architectural and physical features in the Bangladeshi tertiary EFL context. Studies (Anggraeny & Khongputb, 2022; Assaly & Jabarin, 2021; Kanavoz & Akbaş, 2017; Knomari et al., 2021; Prommak, 2020; Zainudin et al., 2019) that observed classrooms to identify critical thinking practices overlooked classroom physical features that influence teaching and learning of critical thinking. Hence, the current study extends the contextual understanding of critical thinking practices of Bangladeshi tertiary EFL teachers, demonstrating how class size, seating arrangements, spatial organization, technological facilities, noise and temperature conditions shape their instructional decisions and practices. Findings show that the physical environment, like furniture flexibility and class size, hinders the opportunities to integrate collaborative activities in class. By integrating these under-researched institutional and environmental dimensions, the study provides a deeper and more holistic understanding of the contextual barriers to teaching critical thinking in the Bangladeshi tertiary EFL context.

5.4.4 Pedagogical Contributions

The study significantly contributes to the context by highlighting the subtlety of tertiary EFL teachers' critical thinking knowledge, motivation and practice. Firstly, the study indicates that despite being the major influential factor, knowledge may not lead to conducive practices as the transformation is filtered through various socio-educational, institutional and personal hindrances. Moreover, the knowledge itself remains incomplete due to the limited focus on critical thinking in teacher education and training programs, resulting in informal knowledge development. Consequently, they lack pedagogical preparedness and mental orientation for teaching critical thinking. Additionally, the study contributes to understanding the motivational issues faced by Bangladeshi tertiary EFL teachers. In the Bangladeshi tertiary EFL context,

teachers' motivation has remained under-focused in terms of institutional support and system development. Accordingly, knowledge plays the key role in their pedagogical practices.

Moreover, the study generates a deep understanding of Bangladeshi tertiary EFL teachers' critical thinking instructional practices. The study highlights that Bangladeshi tertiary EFL teachers' demeaning behavior towards learners is persistent due to the hegemony of a teacher-centered educational system and teachers' similar experiences during their own learning phases. Thus, the study identifies a labyrinth that contributes to tertiary EFL teachers' insufficient critical thinking knowledge, motivation, and practices.

Besides, the study helps better comprehend the context with a nuanced focus on teachers' classroom practices. While the insufficient practice of seeking justification is a common phenomenon in the South Asian region, Bangladeshi tertiary EFL classes are still dominated by closed-ended questions, which substantially hinder learners' critical thinking development. In addition, students' opinions and questions are inadequately facilitated in class, limiting opportunities to express their critical voices. These practices are mostly fueled by conservative socio-cultural systems and non-critical-thinking educational experiences among both teachers and learners. In this connection, though they implemented problem-solving and facilitated learners' reflections, these practices were used as classroom management tools and implemented intuitively rather than as a systematic approach to teach critical thinking. Thus, the study indicates that Bangladeshi tertiary EFL teachers' pedagogical practices need to be honed through targeted training and self-directed professional development activities.

Furthermore, the study contributes to the understanding of critical thinking instructional practices, highlighting student-related factors that determine the teaching decisions. Since Bangladeshi undergraduate students lack adequate English proficiency to cope with English-medium education at universities, teachers often aim to equip them with language skills to address linguistic challenges. This often diverts their focus from teaching critical thinking and their interest in teaching critical thinking. The problem, therefore, traces back to the school- and college-level EFL education in Bangladesh, which fails to prepare prospective university students with the language and basic critical thinking skills to smoothly cope with higher-level thinking in universities.

However, the study reveals some existing opportunities to further critical thinking teaching practices in Bangladesh. Bangladeshi tertiary EFL teachers demonstrated that increasing understanding, interest and implementation of educational technology in their classes. In addition, they displayed growing perceptions of problem-solving through their integration of these activities, driven by their desire to sustain their reputation as high-ranking universities. Bangladeshi undergraduate EFL learners' critical thinking can be effectively enhanced by systematically harnessing these developments.

Therefore, the study pinpoints the areas for improvement in Bangladeshi tertiary EFL teachers' critical thinking practices, allowing teachers and all the stakeholders to take initiatives to effectively integrate critical thinking. The study also indicates the need for educational reform at the pre-university stage in Bangladesh.

5.5 Implications of the Study

As the findings suggest, teaching critical thinking requires active contributions from all stakeholders, from students to members of broader society. The efforts from all of them will create a socio-educational ecology that fosters the teaching of critical thinking.

5.5.1 Implications for the Learners

Bangladeshi undergraduate EFL learners have a responsibility to support their teachers' efforts to promote their critical thinking. These responsibilities include out-of-class activities, such as extended reading and self-directed language development, that go beyond the tertiary EFL teachers' assigned duties.

5.5.1.1 Active Learning through Asking Thought-provoking Questions

The learners should ask their teachers and peers thought-provoking questions. They should actively engage with the content by asking questions that go beyond the classroom content and context. They should emphasize these questions over simply academic performance-related questions. These questions will not only promote their EFL competencies but also their HOTs. Moreover, this practice will facilitate the

teaching of critical thinking by engaging them in problem-solving and decision-making.

5.5.1.2 Independent and Self-reflective Language Learning

EFL learners should practice language learning independently rather than rely too much on teachers to enhance opportunities to teach critical thinking in EFL classes. They should engage in authentic English communication through online platforms, listening practices, and vocabulary building. By becoming independent language learners, they will not only develop their language proficiency but also their ability to analyze, interpret and create meaning. This will remove language barriers to providing higher-level cognitive instruction in the EFL class and facilitate teacher-supported development of critical thinking. In addition, the learners should reflect on their learning progress, strengths, weaknesses and needs to strengthen both language proficiency and critical thinking.

5.5.1.3 Extended Reading

Teaching critical thinking may not be fruitful if learners lack adequate background knowledge which is mostly developed through their real-world knowledge. As a result, the learners should practice extended reading outside the classroom so that they can meaningfully interact between their schemata and the content. This will work as a foundation for teaching critical thinking. Tertiary EFL teachers will be able to design and implement HOTs activities without having to lay the groundwork or compensate for learners' limited background knowledge. This will also facilitate the integration of critical thinking instruction by strengthening learners' English vocabulary and communicative competence.

5.5.1.4 Out-of-Class Critical Thinking Engagement

The EFL learners should engage in critical thinking outside the classroom to make critical thinking instructions more fruitful. They should be involved in constructive and critical dialogues with their peers, families, and social communities to sharpen their critical thinking skills and maintain the dispositions inspired by tertiary

EFL teachers. In this way, critical thinking instructions will extend beyond the classroom, where they will apply the skills and dispositions nurtured inside the classroom. They can utilize technological tools, such as online communication platforms to share critical views, analyze and interpret content and context and uphold critical thinking dispositions, like tolerance, and organized and systematic thinking. This practice will facilitate critical thinking instructions by fortifying authentic, continuous and socially connected practices.

5.5.2 Implications for the National Education Authorities

The Bangladeshi government has a crucial role to play in ensuring effective teaching practices for developing Bangladeshi undergraduate EFL learners' critical thinking. Since Bangladeshi undergraduate learners struggle to engage in critical thinking due to limited exposure to it at the secondary and higher secondary levels, the government must develop educational plans to integrate critical thinking into the EFL curriculum at these levels. Although the government introduced the creative curriculum, its implementation failed utterly due to resource limitations and a lack of teacher training. They should develop textbooks and train the EFL teachers in schools and colleges to empower them to teach critical thinking. Moreover, they should establish an IQAC to support and monitor the implementation of the curriculum.

In addition, UGC should mandate and facilitate flexible in-service teacher education programs to enhance tertiary EFL teachers' critical thinking CK and PCK, aligning with the state-of-the-art instructional practices in language education. Since traditional rigid training programs often conflict with teachers' work schedules, they should include flexible class hours, as in online courses offered by many Western universities (Saïd Business School, 2026). The course content should include a clear and theoretically grounded explanation of critical thinking, accompanied by specific instructional strategies adaptable to EFL contexts. Moreover, there should be opportunities for peer collaboration and professional development facilities, like critical thinking labs, where teachers can experiment with new teaching strategies and materials.

In Bangladesh, critical thinking is widely viewed as anti-cultural and anti-traditional practice, preventing tertiary EFL teachers and learners from engaging in conscious critical dialogue and from developing curricula and materials that facilitate

it. Hence, the Bangladeshi government should proactively raise public awareness of the academic and professional value of critical thinking. They can conduct social awareness campaigns through media, like television, radio, newspapers and social media. They can arrange community-based workshops and seminars on the necessity and tactics of participating in critical dialogue in educational settings for parents, guardians and social value gatekeepers, like religious delegates, local leaders and influential people, to foster open-minded cultures that support critical thinking. In addition, the government should foster freedom of expression by creating supportive policies that protect open discussions and allow tertiary EFL teachers and students to practice questioning and diverse perspectives without the fear of any social, political and institutional harmful consequences.

5.5.3 Implications for the Stakeholders

Apart from the direct stakeholders in the university's EFL teaching for critical thinking, the broader community, including parents, guardians, and social leaders, has a responsibility to build a socially safe environment for critical thinking practices on the university premises. They should respect the expressions of different viewpoints and settle any heated disputes with constructive and healthy conversations rather than condemnation, suppression and possible unrest. In this connection, they should avoid discouraging challenging questions from children and learners, gradually developing an ecosystem that fosters open-mindedness, curiosity, creativity, mutual respect, and democratic dialogue, which are essential for enhancing a culture of critical thinking in universities.

5.6 Further Studies

The study has produced valuable insights into Bangladeshi tertiary EFL teachers' critical thinking knowledge, motivation and practice. However, some areas are beyond the scope of the study and require further investigation. The study's findings may not be widely generalized as it highlighted urban tertiary EFL teaches which differ from rural and suburban settings in terms of socioeconomic conditions and institutional culture. Moreover, the study's focus on the QS-ranked universities and exclusion of non-QS-ranked universities may limit the generalization of the findings due to the

differences in institutional culture and priorities. Additionally, the restricted representativeness of the qualitative sampling may limit the extent to which the findings reflect the broader EFL teaching context. Besides, the cross-sectional data collection limits the study's findings. Finally, the limited time for data collection, along with academic pressure, may have influenced the participants' responses at the point of data collection.

Firstly, the study indicated that tertiary EFL teachers' practices prioritized linguistic outcomes and classroom management over critical thinking. Hence, further studies should explore the tension between their linguistic concerns and desire to promote critical thinking. Comparative research across disciplines, institutions, and proficiency levels can explain how English-medium educational and curricular demands limit or enhance instructional practices for critical thinking. The findings of these studies will identify contextual factors by comparing disciplines, institutions, and learners' levels, and will guide teaching practices and policy development to address the individual needs of each context. Particularly, these studies will help develop context-sensitive materials, instructional approaches and strategies.

Secondly, the study shows the necessity of in-service tertiary EFL teachers' critical thinking knowledge and skills development through targeted training programs. Hence, intervention studies should be carried out by designing and implementing in-service teacher training programs to equip teachers with the knowledge and skills to teach critical thinking.

Thirdly, the study indicates that socio-cultural factors significantly influence tertiary EFL teachers' critical thinking practices. Hence, cross-cultural studies between Bangladeshi tertiary EFL teachers and teachers from other South Asian countries should be conducted to identify whether the socio-cultural issue is country-specific or a common pattern across the region.

Fourthly, the study highlights the role of the classroom physical environment for teaching critical thinking. Therefore, further experimental studies should be conducted to determine how class size, furniture layouts and environmental factors facilitate teaching critical thinking.

Finally, the study underscores the impact of curriculum design in motivating teachers to integrate critical thinking. Further experimental studies should design and implement an EFL curriculum that explicitly includes critical thinking in its outcomes and provides activities and materials to teach it.

5.7 Chapter Summary

Chapter 5 presents a comprehensive plan to ensure effective teaching of critical thinking in the Bangladeshi tertiary EFL context. This chapter proposes an ecosystem enabling teaching critical thinking as a responsibility of the whole community. Universities and tertiary EFL teachers are the core implementers of the "**Framework for EFL Teacher Development in Critical Thinking Instructions,"** by ensuring institutional support and participating in self-directed professional development. Additionally, the undergraduate EFL learners are required to engage in substantial self-directed language learning and critical thinking development to effectively participate in classroom critical dialogues and implement classroom guidance not only in the classroom but also in broader spheres of their lives.

The existence of the framework enhances tertiary EFL education by offering a systematic, measurable, and workable structure for tertiary EFL teachers' professional development. It clarifies that tertiary EFL teachers' professional development for critical thinking cannot be addressed with a single approach from any particular stakeholder. Rather, it requires a coordinated action plan to transform the abstract concepts into concrete actions. Moreover, the framework works as a basis for future research to investigate the sequential relationships among its components to determine which interventions yield the greatest improvements in tertiary EFL teachers' critical thinking knowledge, motivation and practices. Therefore, the framework contributes to a more purposeful, targeted and evidence-based direction for tertiary EFL teachers' professional development for critical thinking.

Apart from these core stakeholders, the national education authority, as an overarching and expanded body of the ecosystem, needs to reform pre-university education to foster critical thinking development, facilitate in-service tertiary EFL teacher education, and create a social atmosphere that supports critical thinking teaching. Finally, parents, leaders and religious representatives who significantly shape learners' mindsets need to facilitate teaching critical thinking by explicitly acknowledging its value and teaching it.

Overall, the study's framework and implications will ensure that Bangladeshi undergraduates develop strong critical thinking skills and dispositions to secure their place in the job market. This will in return significantly contribute to the socio-economic development of the country. Hence, it is expected that all stakeholders in the

framework and its implications will work together to create a sustainable culture of critical thinking in tertiary education.

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APPENDICES

APPENDIX 1

Semi-structured Interview Protocol

Examining EFL Teachers' Knowledge, Motivation, and Practices of Critical Thinking in Bangladeshi Tertiary Institutions

Time of interview:

Date:

Place:

Interviewer:

Interviewee (Pseudonym):

Brief description of the project:

In this age of information affluence and increasing complexity of life and communication, critical thinking is an essential skill that learners of every discipline need to master. Many challenges accompany the urge to teach and learn critical thinking skills. One of these is the teachers' lack of knowledge about critical thinking, its teaching, and the skills needed to foster critical thinking skills. Teachers are the key personnel in equipping learners for 21st-century living. Hence, researchers, including those in the field of English as a Foreign Language (EFL) teaching and learning across the globe, are showing their concerns in identifying teacher issues and solving them.

In the above connection, the present study thus attempts to explore Bangladeshi EFL teachers' perceptions and practices of critical thinking. The study adopts a mixed-method design for the purpose. Interviews, classroom observation, and a questionnaire survey will be conducted to answer the research questions. 12 EFL faculty members from different public and private universities will be selected for the qualitative study, and 103 faculty members will be selected for the quantitative study. Data will be analyzed at multiple levels to comprehensively understand the context under exploration. The study's findings will be helpful not only to the teacher but also to

teacher educators and EFL education planners. In addition, the researcher plans to make some recommendations based on the findings.

Demographic Information

1. What is your age?
2. What is the highest educational degree you received?
3. How long have you been teaching?

Broad Topic *(Content Knowledge)***: Knowledge of Critical Thinking**

Sub-Topic 1: Conception of Critical Thinking

1. Tell me your idea about critical thinking.

Sub-Topic 2: Importance of Teaching Critical Thinking

1. Tell me the importance of teaching critical thinking to undergraduate students in the present context of Bangladesh.
2. In your opinion, can teaching critical thinking help students learn English better? *If yes, why and how? If not, why?*

Broad Topic *(Pedagogical Content Knowledge)***: Knowledge of Teaching Critical Thinking**

Sub-Topic 1: Knowledge of Teaching Materials for Critical Thinking

1. Do you integrate critical thinking in your class? Why/ why not?
2. In your opinion, what materials are the most effective for teaching critical thinking in EFL class? *Why do you think so?*
3. What types of teaching materials do you typically use in your class? *Can you name some?*
4. What type of thinking do these materials encourage in your students? *For example, do they focus on understanding, remembering, or promoting higher-order thinking?*

5. Do these materials help students engage in problem-solving and decision-making skills in the classroom? *If yes, how? If not, why?*

Sub-Topic 2: Knowledge of Questioning for Teaching Critical Thinking

1. Do you think questioning is an effective way to teach critical thinking? *If not, why? If yes, why?*
2. How can a teacher use questioning to engage students in critical thinking?
3. Do you intentionally ask questions that require critical thinking? *If not, why? If yes, what factors guide you in choosing these questions?*
4. Do you ask questions that encourage critical thinking among students with basic-level proficiency? *If not, why? If yes, why?*
5. How often do you ask higher-order questions to basic-level proficiency students?
6. Do you encourage students to ask questions that reflect their critical thinking? *If yes/not, why?*
7. How often do they ask questions to you and their peers?
8. Do you allow students to share personal or sensitive judgments on the materials? *If not, why? If yes, how do you ensure a safe environment for them to share their personal and sensitive judgments?*

Sub-Topic 3: Knowledge about Using Social Learning Activities

1. Do you use collaborative activities in your class? *If not, why? If yes, why? Can you name some collaborative activities that you use in your class?*
2. What is the primary goal of using collaborative activities in your class? Is it for developing critical thinking or something else?
3. Do you think collaborative activities improve critical thinking? *If not, why? If yes, why?*
4. How do collaborative activities impact the students' critical thinking?

Sub-Topic 4: Knowledge of Using ICT for Teaching Critical Thinking

1. Do you use ICT in your class? *If not, why? If yes, what are they? Why do you use them?*

2. What is the main aim behind using ICT in your class? *Is it for developing critical thinking or language skills?*
3. Do you think ICT integration into EFL teaching helps students think critically? *If yes, why and how? If not, why?*

Sub-Topic 5: Knowledge of Teaching Instructions for Developing Critical Thinking

1. Do you think students should talk more than the teacher in an EFL class? *If not, why? If yes, why?*
2. How does students' talking more than their teacher influence their critical thinking development?
3. Do you think detailed and structured instructions and regular feedback are good for developing students' critical thinking? *If yes, why and how? If not, why?*
4. Do you follow a structured or flexible approach to instruction in your class? *If not, why? If yes, why do you use the approach?*
5. How does your instruction style impact students' critical thinking?

Sub-Topic 6: Knowledge about Challenges of Teaching Critical Thinking in Bangladeshi Tertiary EFL Context

1. Please list some student-related issues in teaching critical thinking to Bangladeshi undergraduate EFL students.
2. Please list some teacher-related issues in teaching critical thinking to Bangladeshi undergraduate EFL students.
3. Please list some academic system-related teaching critical thinking to Bangladeshi undergraduate EFL students.
4. Do you face any of them? What are they?
5. Do you try to consciously address these problems? *If yes, why and how? If not, why?*

APPENDIX 2

Semi-structured Classroom Observation Protocol

Examining EFL Teachers' Knowledge, Motivation, and Practices of Critical Thinking in Bangladeshi Tertiary Institutions

Date:
Place:
Length of observation:
Observer:
Observed participant (Pseudonym):

Brief description of the project:

In this age of information affluence and increasing complexity of life and communication, critical thinking is treated as an essential skill that learners of every discipline need to master. The urge to learn critical thinking skills is accompanied by many challenges, one of which is teachers' lack of knowledge about critical thinking, its teaching, and the necessary skills to foster critical thinking skills. Teachers are the key personnel in equipping learners for 21st-century living. Hence, researchers, including those in English as a Foreign Language (EFL) teaching and learning across the globe, are showing their concerns in identifying and solving teacher issues.

In the above connection, the present study thus attempts to explore Bangladeshi EFL teachers' perceptions and practices of critical thinking. The study adopts a mixed-method design for this purpose. Interviews, classroom observation, and a questionnaire survey will be conducted to answer the research questions. 12 EFL faculty members from different public and private universities will be selected for the qualitative study, and 103 faculty members will be selected for the quantitative study. Data will be analyzed at multiple levels to comprehensively understand the context under exploration. The study's findings will be helpful not only to the teacher but also to teacher educators and EFL education planners. In addition, the researcher plans to make

some recommendations based on the findings.

Purposes of Classroom Observation:

During the observation, the researcher will take detailed notes on the following points:

1. Observe classroom events related to the development of critical thinking
2. Record factual information about the classroom events, e.g., Teachers' behavior that creates an un-threatened classroom environment, activities and strategies that engage students in collaborative, thought-provoking learning, teacher's instruction that facilitates critical thinking, teacher-student interaction.
3. Record personal interpretation of the observed points.

Instructions for the participants:

1. Please sign the informed consent form before participating in the observation.
2. Please conduct your classes as usual.
3. Please inform the researcher about any kind of discomfort you feel before the observation.

Description of the physical environment of the class:

Drawing/taking pictures of the setting:

Observed Topic 1: Teachers' behavior that creates an un-threatened classroom environment	**Yes**	**No**	**Notes**
1. The teacher makes a friendly gesture while entering the class.			
2. The teacher has supportive gestures while giving instructions.			
3. The teacher has positive gestures while giving corrective feedback.			

4. The teacher demonstrates respect and empathy			
5. The teacher encourages risk-taking and growth			

Observed Topic 2: Activities and strategies that engage students in collaborative, thought-provoking learning	**Yes**	**No**	**Notes**
1. The teacher uses ICT in class			
2. The teacher uses interesting materials in the class			
3. The teacher uses open-ended questions.			
4. The teacher consistently asks students to justify their answers or arguments with evidence			
5. Teachers consistently ask students to justify their answers or arguments with evidence, modeling the behavior during the instructions			
6. Teachers create opportunities for students to reflect on their learning, processes, and conclusions, demonstrating how reflection leads to deeper understanding.			
7. The teacher explicitly demonstrates their thought processes, such as how they analyze a problem or evaluate different outcomes.			

Observed Topic 3: Teachers' instruction that facilitates critical thinking	**Yes**	**No**	**Notes**
1. The teacher provides clear instructions in the class.			
2. The teacher helps students whenever needed			
3. The teacher encourages students to ask questions, investigate problems, and seek their own answers.			
4. The teacher involves students in extended, multi-step projects that require research, planning, and execution.			
5. The teacher uses questions that have multiple valid answers to encourage deeper thinking.			

Observed Topic 4: Teacher-student interaction	Yes	No	Notes
1. The teacher allows students to express their opinions freely.			
2. The teacher accepts questions from students positively.			
3. Students talk most of the time in the class.			
4. The teacher provides constructive feedback			
5. The teacher allows students to discuss the topic among themselves.			

APPENDIX 3

Survey Questionnaire

Project Title: Examining EFL Teachers' Knowledge, Motivation, and Practices of Critical Thinking in Bangladeshi Tertiary Institutions

Dear Sir/Madam,

I am Nousin Laila Bristi, student ID 2022314579, a PhD candidate in Applied Language Studies (LG950) at Universiti Teknologi MARA, Malaysia.

This survey aims to explore Bangladeshi tertiary EFL teachers' expertise in teaching critical thinking.

Your participation in this study is voluntary. Thus, you reserve the right to decline participation or withdraw at any point of the study. By completing the survey, you are providing your voluntary consent to participate. Please answer **all** questions.

If you have any questions regarding this research, please contact me at 8801716419876.

Note: *The questionnaire has 4 short sections with closed-ended questions and should not take more than 15-20 minutes.*

Thank you for participating in the survey.

REC Approval No.: REC/08/2024 (PG/MR/412)

Part A: Demographic Information

Kindly indicate your answers by ticking the appropriate option.

1. My gender is

☐ Male

☐ Female

2. My age range is

☐ 23 – 35 years

☐ 36 – 45 years

☐ 46- 55+ years

3. My years of teaching English as a Foreign Language range from

☐ 0 – 2 years

☐ 3 – 7 years

☐ 8 -12 years

☐ 13 – 20+ years

4. The highest degree I have achieved

☐ Post Doctorate

☐ PhD

☐ Master's

☐ Bachelor’s Degree

5. I am affiliated with

☐ Public university

☐ Private University

☐ I confirm that I have answered all **5 demographic** questions in this section. *I have counted my responses to ensure none are missed.*

Part B: Knowledge

Please choose the response on the scale below that best corresponds to your answer and tick the box next to it.

1 = Strongly Disagree 2 = Disagree 3 = Slightly Disagree 4 = Neutral 5 = Slightly Agree 6 = Agree 7 = Strongly Agree

Example: Critical thinking is important.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☑ 6 ☐ 7

Conception of Critical Thinking

1. Critical thinking means analyzing, evaluating and creating information.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

2. Critical thinking involves problem-solving and decision-making.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

3. Critical thinking means truth-seeking, tolerance and unbiasedness.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

4. Critical thinking requires creativity and reflection.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

5. Critical thinking is viewing things from multiple perspectives.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

6. Critical thinking is a 21st-century skill.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

7. Undergraduate students require critical thinking to become autonomous and independent learners.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

8. Critical thinking is required for undergraduates' academic success.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

9. Critical thinking is crucial for career success.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

10. Undergraduates need to develop critical thinking to perform their social responsibilities.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

11. Undergraduates need to develop critical thinking to contribute to national development, such as achieving the Sustainable Development Goals.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Knowledge of Teaching Critical Thinking

12. Authentic materials (newspaper, articles) can promote critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

13. Digital and audiovisual content help teach critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

14. Culturally relevant topics effectively stimulate learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

15. Group and pair work promote learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

16. Debate and problem-based activities help instigate learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

17. WH and HOT questions are crucial for promoting critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

18. Teacher-developed materials promote critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

19. Tertiary EFL textbooks are appropriate for developing critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

20. Students' evaluation of materials promotes critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

21. Student-centered instruction is essential for promoting critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

22. Constructivist instructional approaches are required to promote critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

23. Constructive feedback is essential for teaching critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

24. Teachers' flexibility in accepting diverse perspectives facilitates learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

☐ I confirm that I have answered all **24 knowledge** questions in this section. *I have counted my responses to ensure none are missed.*

Part C: Motivation

Please choose the response on the scale below that best corresponds to your answer and tick the box next to it.

1 = Strongly Disagree 2 = Disagree 3 = Slightly Disagree 4 = Neutral 5 = Slightly Agree 6 = Agree 7 = Strongly Agree

Example: Critical thinking is important.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☑ 6 ☐ 7

Relatedness

1. My institution highly values the teaching of critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

2. My institution constantly monitors the integration of critical thinking in class.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

3. The curriculum inspires me to integrate critical thinking into my class.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

4. My institution provides financial support for professional development activities, such as publishing research articles, attending seminars, and conferences.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

5. My institution arranges training to enhance my teaching prowess for promoting students' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

6. My institution rewards professional achievements.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

7. My institution ensures the necessary classroom infrastructure (e.g., ICT) for teaching critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

8. Class size and time allocation in my institution allow teaching critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Autonomy

9. I can choose or adapt materials for my class.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

10. I can use my preferred instructional style for promoting critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

11. I can adjust course content whenever needed.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

12. My workload allows me time and energy to put effort into teaching critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

13. My opinions are valued in institutional decision-making.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Competence

14. I have the knowledge and skills to teach critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

15. I received adequate education and training to teach critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

16. My students have enough linguistic and cognitive capability to think critically.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

17. My students are enthusiastic and motivated to think critically.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

18. I can manage socio-cultural issues for developing critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

☐ I confirm that I have answered all **18 motivation** questions in this section. *I have counted my responses to ensure none are missed.*

Part D: Practices

Please choose the response on the scale below that best corresponds to your answer and tick the box next to it.

1 = Strongly Disagree 2 = Disagree 3 = Slightly Disagree 4 = Neutral 5 = Slightly Agree 6 = Agree 7 = Strongly Agree

Example: Critical thinking is important.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☑ 6 ☐ 7

Teaching Strategies

1. I use collaborative activities, like group work, pair work, debate, and role play, to promote critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

2. I integrate ICT tools, such as projectors, mobile phones and online platforms to facilitate critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

3. I use interesting materials, such as literature and controversial topics to stimulate critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

4. I use authentic resources like newspapers and articles to stimulate students' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

5. I use textbooks to promote critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

6. I use cultural and affective content to stimulate learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

7. I design and use my own materials to promote learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

8. I use project-based activities to stimulate learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

9. I use open-ended and HOT questions to teach critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

10. I use justification strategies, such as stimulating schemata, seeking justification, and prompting self-evaluation.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

11. I model Higher-Order Thinking, such as reasoning, reflection, and metacognition to stimulate learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

12. I allow my students to evaluate the materials.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

13. I encourage students to lead discussions and activities to promote self-directed learning.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

Teaching Behaviors

14. I build rapport with the students using welcoming and supportive gestures (Smiling, friendly tone) to increase their critical thinking, reducing anxiety.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

15. I sincerely help my students whenever they need help in class.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

16. I don't set any restrictions when receiving students' opinions or answers.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

17. I encourage diverse perspectives from my students.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

18. I work as a facilitator during classroom interaction between peers or between me and the students.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

19. I deliver structured and clear guidance using examples and visual aids to prompt critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

20. I encourage students to take risks by promoting their autonomy.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

21. I welcome questions from students and respond to them with adequate details and clarity.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

22. I respect students' contributions and handle errors sensitively.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

23. I provide constructive feedback (guidance-focused, scaffolding and developmental feedback) to motivate learners' critical thinking.

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7

☐ I confirm that I have answered all **23 practice** questions in this section. *I have counted my responses to ensure none are missed.*

☐ **Final Check:** I confirm that I have answered all **70** questions in this questionnaire. *I have counted and reviewed my responses carefully.*

Thank you for your time and participation. Your feedback is greatly appreciated.

APPENDIX 4

Self-Reflective Form

Participant:

Description of the event	
1. Who are the key people? 2. What happened? 3. What was the location? 4. What was the time? 5. How long did it take? 6. How was the external environment?	
Analysis and Interpretation	
1. What did I feel? 2. Why did I feel like this? 3. What are the most important features? 4. What went well? 5. What went bad? 6. What theories and literature are connected to this event? 7. How did my self-training influence the event?	
Outcome	
1. What have I learned from this reflection? 2. What would I change in me? 3. Why is it important? 4. What should I change during the following interview? 5. How am I informed about this?	

APPENDIX 5

Sample Self-Reflective Form

Interview Self-reflection

Description of the event	
1. Who are the key people? 2. What happened? 3. What was the location? 4. What was the time? 5. How long did it take? **6.** How was the external environment?	1. The interviewee and I 2. I conducted the interview using the protocol. We discussed the points. However, the interviewee was in a hurry as he had another meeting after the interview. Yet, he responded to all the questions. 3. It took place at the Zoom meeting platform. However, I attended the meeting from my home and the interviewee from his home. 4. The meeting started at 9:40 pm. 5. It took 51 minutes 6. The external environment in my home was quiet and comfortable.
Analysis and Interpretation	
1. What did I feel? 2. Why did I feel like this? 3. What are the most important features? 4. What went well? 5. What went bad? 6. What theories and literature are connected to this event? **7.** How did my self-training influence the event?	1. I felt good. 2. The respondent answered with the exact concept. I had to ask further questions only a few times. 3. The interviewee was knowledgeable about the topic. 4. The interview was easy to track as the interviewee talked precisely. 5. Nothing. 6. Grice's (1975) four maxims. The responses were well-structured, reasonably long, mostly relevant, and highly organized. 7. I realized that a knowledgeable participant is easy to interview and I don't need to navigate much.

Classroom Observation Self-reflection

Description of the event	
1. Who are the key people? 2. What happened? 3. What was the location? 4. What was the time? 5. How long did it take? **6.** How was the external environment?	1. The researcher, the teacher and the students 2. The researcher and the teacher entered the class together. The teacher introduced the researcher to the students. After that, the researcher took her seat at the back of the class and set the camera for video recording. The researcher took field notes silently while the class was going on. The researcher did not participate in any of the class activities. After observing the class, the researcher and the teacher left the class together. 3. The observation happened in room number 412 at the Arts Building at Jahangirnagar University. 4. The observation started from 11:35 am on 9 March 2025 5. It lasted 1 hour. 6. The class was furnished traditionally with the teacher's place in the front and then two columns of wooden benches. Also, the class was equipped with computer connection, whiteboard, overhead projector, projection screen, wall-mount speakers, AC, electric lights and fans. The lighting of the class was done by the electric lights as the windows at the back of the class were covered with heavy curtains.
Analysis and Interpretation	
1. What did I feel? 2. Why did I feel like this? 3. What are the most important features? 4. What went well? 5. What went bad? 6. What theories and literature are connected to this event?	1. I was a bit nervous and excited 2. This was my first observation for my main study. Moreover, as I was writing with pen and paper after many days, I could not write quite as fast to capture small details in the field notes. 3. The teacher and the students behaved naturally without feeling concerned about

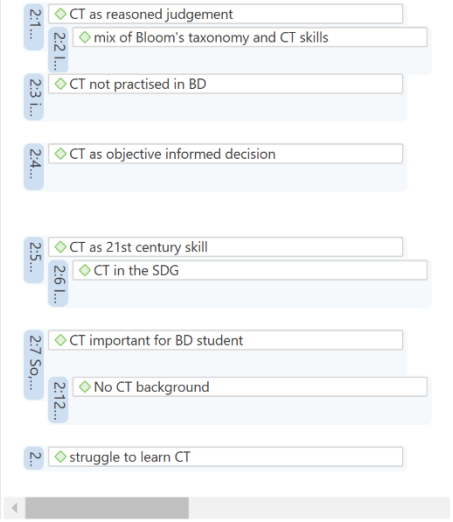
APPENDIX 6

Sample First Cycle Coding

Interview First Cycle Coding

ME: How long have you been teaching?
MUNALISA: It has been 5 years that I have been teaching.
ME: Now we are going to start the main discussion of the interview. First of all, it's about the conception of critical thinking. So, tell me your idea about critical thinking.
MUNALISA: Okay, to me critical thinking is being able to make reasoned judgments. It is being able to connect ideas, evaluate, and make inferences from whatever information we have. Critical thinking will depend on context. For example, in the Bangladeshi context, since there is not much practice to actively promote critical thinking, I think it will vary from how each department or each faculty in their capacity exercises critical thinking. But generally speaking, it would be being able to make reasoned judgments and be able to make objective informed decisions.
ME: Okay, tell me the importance of teaching critical thinking to undergraduate students in the present context of Bangladesh.
MUNALISA: Critical thinking is one of those 21st-century skills that students are supposed to have. It's also in the mandate of SDGs that students should have critical thinking skills. And there are also the four Cs. I think one of them is critical thinking and creative thinking and there are many others, communicative competence, maybe those are also there. So, critical thinking seems to be very important in the current context of every undergraduate student, not only in Bangladesh. But in the Bangladeshi context, since students are very sheltered from the SSC to HSC levels, they have been in a cocooned environment.

And when they finally come to university, it is quite a culture shock. So just to in isolation introducing them with critical thinking would be a mistake in my opinion. Critical thinking would have to be gradually embedded and synthesized into their



Classroom Observation First Cycle Coding

- ***The teacher is searching for material in the email***
- ***Students are entering the classroom***

ZONOON: As-Salaam-Alaikum and good morning, everyone. I hope you are doing good. You all have already punched your card, right? So let's have the class topics today on the board and then you will understand what we are going to do. ***(writing on the board)***

- ***Students are entering the classroom***

So, you have these three topics for today and we have to cover up in one hour's time. The last person should close the door.

- ***Opening the textbook Intensive English I on the screen***

Now, keep reflecting on what we did in the last class, I will need one person to actually remind us in short what we did, the topics, the class topics, like this and then we will move on to practicing, excuse me. Who would like to tell us what we did in the last class? Anybody feel free, just the three topics, maybe class topics and that will be fine. So, anybody from anywhere, those who are present, quickly.

GIRL1: True-false activity.

ZONOON: True or false. I gave you a home task.

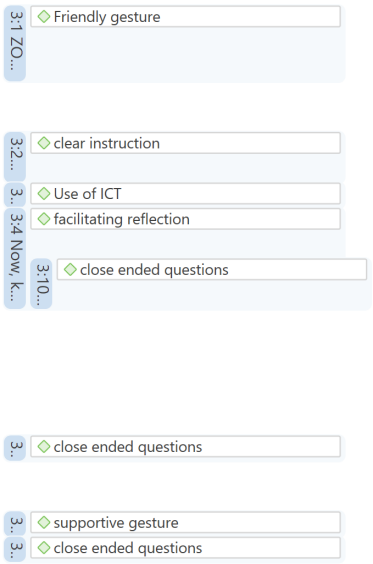
BOY1: Linking words.

ZONOON: We practiced linking words in the last class. And there were three that you were supposed to do today. Anything else?

- ***Standing in front of the teacher's table.***
- ***Straight posture***
- ***Lively tone***

Only this, nothing about the reading comprehension passage?

- ***Using hand gestures***
- ***Students are looking at the teacher and having straight posture***



APPENDIX 7

Sample Transcripts

Interview Sample Transcript

ME: How long have you been teaching?
FARHAN: I have been teaching since 2011, so it's almost 13 years plus. It's been more than 13 years.
ME: Now we are going to talk about the main parts of the interview. Firstly, it is about the knowledge of critical thinking. Tell me your idea about critical thinking.
FARHAN: Should I describe it from the student's perspective or the teacher's?
ME: How do you define critical thinking?
FARHAN: To me, someone possesses critical thinking if that person can maybe he or she can analyze something, interpret something, and then make a judgment based on his or her analysis and interpretation. So in simple language, I define critical thinking just in this way.
ME: Tell me the importance of teaching critical thinking to undergraduate students in the present context of Bangladesh.
FARHAN: I mean it's not about the English students, I mean the students who study in general. What I think as a teacher, what I have observed in Bangladesh that most of the students, I mean maybe you have observed that a good number of students, passed HSC, but only one-third or half of them pursue graduation. Even among the graduates, I mean the students, like we have 8,000 students in my university.

What we observe is that, like the college students who come here just after passing HSC and we see them in the first year. When we ask them something a simple question, for example, what do you think, we see that they're very hesitant to express about what they think. So I grew a perception that maybe they haven't developed enough critical thinking ability in their school and colleges.

Maybe they followed the typical curriculum, typical teaching, learning. So I strongly feel that since they have a very poor background in terms ofthe critical thinking ability they possess, we should cultivate critical thinking among the undergraduate students since they do not come up with that.
ME: So why do the undergraduates need critical thinking?
FARHAN: I share with my students that who is a graduate? Or what characteristics should a graduate possess? I believe that the graduates should be able to analyze.They should be able to solve a problem. If I talk aboutan engineer, as an engineer, they should be able to interpret something very rationally.They should be able to make judgment. What should they do in a given circumstance? So I feel that for making efficient and effective decisions, they should have critical thinking ability.
ME: What if they do not have this critical thinking ability?
FARHAN: I think they will be graduates, but they will perform very average in their jobs.
I believe that they might not be able to perform as they could if they had critical thinking ability.

Classroom Observation Sample Transcript

SONY: Therapeutic interventions, mindfulness practices ***(Writing them down on the table)***. Anything else? Some other things can assist it, like societal validation. It also works in case of unlearning a traumatic past ***(Writing this down on the table)***.
BOY1: Reclaiming autonomy?
SONY: Yes, so it is a process of reclaiming autonomy or freedom. Yes, and some more issues are also discussed at the very last paragraph or last extract that says that it is a process of reclaiming autonomy, which is very dynamic in process and that demands patience, resilience and most importantly, self-compassion. So, these things can also assist in case of unlearning trauma. So, the passage is about unlearning trauma or unlearning traumatic past and these are the very prescriptions actually offered to us by the writer so that we can practice them and utilize them in case of getting the recovery from our very bad memories.

Is there anything which is related to why in the passage?
BOY1: Rewiring the brain. Second paragraph.

- ***Most of the students were just looking at the whiteboard and the teacher***

SONY: Sorry, second paragraph. Neurological studies reveal that trauma rewires the brain, creating rigid patterns of thought that anticipate disruption ***(Reading out from the screen)***. So, to mitigate those sorts of disruptions, loss, or bad or ill feelings, it is important to get out of these sorts of traumatic experiences so that we can become regular in our life and we can become happy in our life. So, well, you can just take that thing in a phrase as well to avoid … ***(Writing on the table)***.

GIRL1: Sir, isn't this falls under the fact that reclaiming autonomy?

- ***During this question-and-answer session, the teacher moved between the whiteboard and the dais.***
- ***Some of the students nodded their heads while the teacher was explaining the questions and the answers.***
- ***The teacher used frequent hand gestures while explaining.***
- ***While giving feedback, the tone was neutral.***

SONY: Yes, this is a process basically, and it is a very dynamic process as the passage says. This is a dynamic process of reclaiming autonomy or freedom, and it is a process of recovery, I mean self-recovery. This process is very neurological, this process is very psychological, which we cannot see with our eyes, but which we actually can feel with our mind. That is why this is very abstract in nature, and this is very critical and, of course, tough to deal with.

APPENDIX 8

Sample Codebook

Classroom Observation Sample Codebook

Theme 1: Teacher behaviors that promote a safe and supportive classroom			
Sub-theme 1 The teacher makes a friendly gesture while entering the class.			
Documents	**Quotation**	**Deductive code**	**Subcode**
Classroom Observation 3 - Borsha	Good afternoon, everyone. How are you? •Students have not respondec	Friendly gesture	warm entry greeting
Classroom Observation 1 - Sony	The teacher started the class by greeting the students with a smiling fac	Friendly gesture	warm entry greeting
Classroom Observation 5 - Zonoon	ZONOON: As-Salaam-Alaikum and good morning, everyone. I hope you	Friendly gesture	respectful and warm entry greeti
Classroom Observation 6 - Tahmina	The teacher greeted the students•The students also greeted the teache	Friendly gesture	warm entry greeting
Classroom Observation 2 - Rahin	The teacher greets the students	Friendly gesture	warm entry greeting
Classroom Observation 3 - Borsha	The teacher greeted the students	Friendly gesture	warm entry greeting
Sub-thme 2 The teacher has supportive gestures while giving instructions			
Documents	**Quotation**	**Deductive code**	**Subcode**
Classroom Observation 3 - Borsha	(smiling)	supportive gesture	(smiling)
Classroom Observation 3 - Borsha	The teacher was making eye contact with the students	supportive gesture	inclusive eye contact
Classroom Observation 3 - Borsha	(marking the outline on the whiteboard)	supportive gesture	visual emphasis on the content v
Classroom Observation 3 - Borsha	(marking the topic on the whiteboard)	supportive gesture	visual emphasis on the content v
Classroom Observation 3 - Borsha	(making eye contact on all sides	supportive gesture	inclusive eye contact
Classroom Observation 3 - Borsha	Moving around the class	supportive gesture	supportive classroom movemen
Classroom Observation 3 - Borsha	(light tone)	supportive gesture	(light tone)
Classroom Observation 1 - Sony	(There was a soft smile on his face.)	supportive gesture	(smiling)
Classroom Observation 1 - Sony	(Smiling)	supportive gesture	(smiling)
Classroom Observation 1 - Sony	(pointing his eyes to the ceiling	supportive gesture	illustrative gesture
Classroom Observation 1 - Sony	smiling)	supportive gesture	(smiling)
Classroom Observation 1 - Sony	(smiling	supportive gesture	(smiling)
Classroom Observation 1 - Sony	using hand gesture)	supportive gesture	hand gestures
Classroom Observation 1 - Sony	(neutral tone	supportive gesture	neutral tone
Classroom Observation 1 - Sony	a soft smile)	supportive gesture	(smiling)
Classroom Observation 1 - Sony	(casual posture	supportive gesture	(casual posture
Classroom Observation 1 - Sony	and soft smile on face)	supportive gesture	(smiling)
Classroom Observation 5 - Zonoon	Standing in front of the students' seats	supportive gesture	standing near students
Classroom Observation 5 - Zonoon	Light movements	supportive gesture	Light movements
Classroom Observation 5 - Zonoon	hand gestures	supportive gesture	hand gestures
Classroom Observation 5 - Zonoon	The teacher was displaying his phone camera	supportive gesture	using realia

Interview Sample Codebook

Theme 1 (Content Knowledge): Knowledge of Critical Thinking				
Sub-theme 1: *Conception of Critical Thinking*				
Theoretical conception of CT				
Document	**Quotation**	**Inductive Codes**		**Deductive Codes**
Interview 5 - Sumaiya	If a person doesn't have the ability to think critically, he	CT as unbaisedness		CT as Dispositions
Interview 5 - Sumaiya	if a person is critical in his or her thinking, then they ca	CT as truth seeking		CT as Dispositions
Interview 5 - Sumaiya	A person should value the available information that is	CT as unbaisedness		CT as Dispositions
Interview 5 - Sumaiya	He or she must gather some information about it, so as	CT as unbaisedness		CT as Dispositions
Interview 9 - Borsha	I think critical thinking is the ability to analyze or critic	Bloom's taxonomy		CT as higher order thinking in Bloom's taxonor
Interview 1 - Munalisa	It is being able to connect ideas, evaluate, and make in	mix of Bloom's taxonomy and CT skills		CT as higher order thinking in Bloom's taxonc
Interview 3 - Farhan	To me, someone possesses critical thinking if that pers	mix of Bloom's taxonomy and CT skills		CT as higher order thinking in Bloom's taxonc
Interview 2 - Progga	To me critical thinking is when someone can analyze o	mix of Bloom's taxonomy and CT skills		CT as higher order thinking in Bloom's taxonc
Interview 4 - Clent Moss	It is about analyzing, synthesizing, and hypothesizing.	mix of Bloom's taxonomy and CT skills		CT as higher order thinking in Bloom's taxonc
Interview 12 - Rahin	In my view, critical thinking involves different abilities	mix of Bloom's taxonomy and CT skills		CT as higher order thinking in Bloom's taxonc
Interview 6 - Raihan	Critical thinking is the ability to analyze any text or sor	mix of Bloom's taxonomy and CT skills		CT as higher order thinking in Bloom's taxonc
Interview 8 - Rochester	It is a comprehensive package, I think because without	mix of Bloom's taxonomy and CT skills		CT as higher order thinking in Bloom's taxonc
Interview 10 - Zonoon	critical thinking is fully critical and creative	CT as creative thinking		CT as other higher order thinking skills
Interview 5 - Sumaiya	Critical thinking is creative thinking.	CT as creative thinking		CT as other higher order thinking skills
Interview 10 - Zonoon	it's a matter of creativity.	CT as creativity		CT as other higher order thinking skills
Interview 10 - Zonoon	Also, it helps in decision-making.	CT as decision making		CT as other higher order thinking skills
Interview 9 - Borsha	It is the Objective analysis to make some rational judgi	CT as objective and rational judgement		CT as other higher order thinking skills
Interview 1 - Munalisa	objective informed decisions	CT as objective informed decision		CT as other higher order thinking skills
Interview 10 - Zonoon	And it's a problem-solving strategy.	CT as problem solvig strategy		CT as other higher order thinking skills
Interview 1 - Munalisa	to me critical thinking is being able to make reasoned j	CT as reasoned judgement		CT as other higher order thinking skills
Interview 10 - Zonoon	Critical thinking is not general thinking. It's thinking b	CT as reflective thinkning		CT as other higher order thinking skills
Personal Conceptions of CT (Inductive Codes)				
Document	**Quotation**	**Inductive Codes**	**Uniqu**	**Categorizing**
Interview 1 - Munalisa	Critical thinking is one of those 21st-century skills that	CT as 21st century skill	CT as	Personal conceptions of CT
Interview 4 - Clent Moss	It is about seeing one thing from a different set of angle	CT as a multi-perspective thinking	CT as a multi-perspective thinking	
Interview 4 - Clent Moss	I think critical thinking is related to different perspectiv	CT as a multi-perspective thinking	CT as deep thinking	

APPENDIX 9

Sample Teachers' Informed Consent Form (Signed)

Informed Consent Form

Title: An Examination of EFL Teachers' Knowledge, Motivation and Practices of Critical Thinking in Tertiary Institutions in Bangladesh

Time of the interview: 10 : 35 am
Place: Room : 105, IVBAT Campus
Date : 25.1.25
Interviewer: Nousin Laila Bristi
Interviewee (Pseudonym): Progga

Here is the information provided to help you to decide your willingness to participate in the present study. Please be informed that you are free to decide not to participate in the study or withdraw yourself from the study at any time. Your decision will not affect your relationship with the department, the teacher, or the university.

The study aims to explore Bangladeshi EFL teachers' perceptions and practices of critical thinking in their classes. Data will be collected through interviews and classroom observations. Two reading comprehension classes will be observed each for one hour. After that, questionnaire data will be collected.

Please feel free to ask any questions about the study before or during data collection. I would be pleased to share the study's findings with you after the research is completed. The confidentiality of your personal information, like your name, email, and phone number, will be maintained strictly. This information will not be connected to the study's findings in any way, and only the researchers will know your identity.

No known risks, threats, or discomforts are associated with this study. The expected benefits of your participation in the study are the information regarding teacher knowledge, motivation, and critical thinking practices in Bangladeshi EFL classes. If the study is submitted for publication, it will ensure that their privacy is protected.

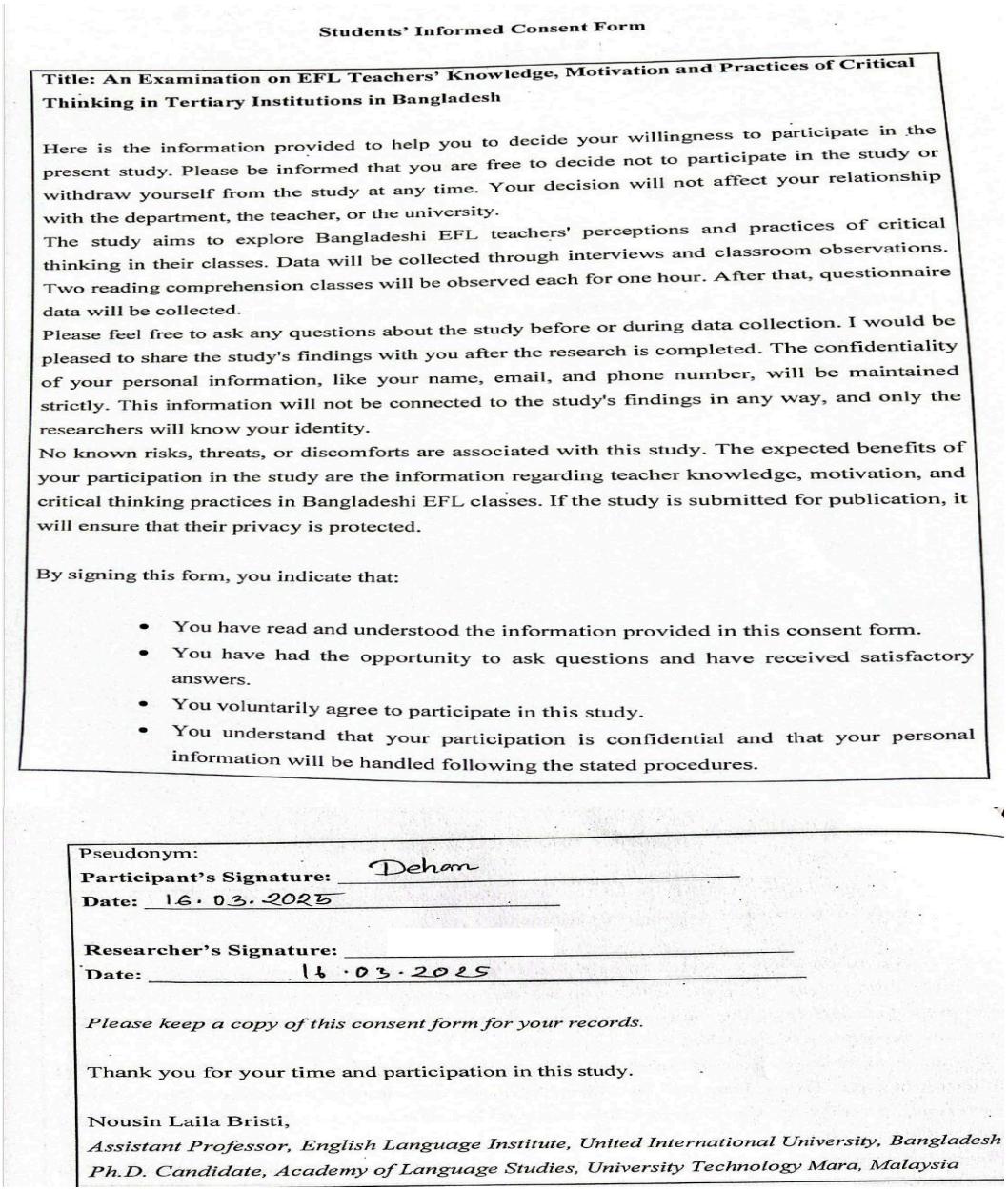
By signing this form, you indicate that:

- You have read and understood the information provided in this consent form.
- You have had the opportunity to ask questions and have received satisfactory answers.
- You voluntarily agree to participate in this study.
- You understand that your participation is confidential and that your personal information will be handled following the stated procedures.
-

Pseudonym: Progga
Participant's Signature: _____
Date: 25/01/25

APPENDIX 10

Sample Students' Informed Consent Form (Signed)



Students' Informed Consent Form

Title: An Examination on EFL Teachers' Knowledge, Motivation and Practices of Critical Thinking in Tertiary Institutions in Bangladesh

Here is the information provided to help you to decide your willingness to participate in the present study. Please be informed that you are free to decide not to participate in the study or withdraw yourself from the study at any time. Your decision will not affect your relationship with the department, the teacher, or the university.

The study aims to explore Bangladeshi EFL teachers' perceptions and practices of critical thinking in their classes. Data will be collected through interviews and classroom observations. Two reading comprehension classes will be observed each for one hour. After that, questionnaire data will be collected.

Please feel free to ask any questions about the study before or during data collection. I would be pleased to share the study's findings with you after the research is completed. The confidentiality of your personal information, like your name, email, and phone number, will be maintained strictly. This information will not be connected to the study's findings in any way, and only the researchers will know your identity.

No known risks, threats, or discomforts are associated with this study. The expected benefits of your participation in the study are the information regarding teacher knowledge, motivation, and critical thinking practices in Bangladeshi EFL classes. If the study is submitted for publication, it will ensure that their privacy is protected.

By signing this form, you indicate that:

- You have read and understood the information provided in this consent form.
- You have had the opportunity to ask questions and have received satisfactory answers.
- You voluntarily agree to participate in this study.
- You understand that your participation is confidential and that your personal information will be handled following the stated procedures.

Pseudonym:
Participant's Signature: Dehon
Date: 16.03.2025

Researcher's Signature: _____
Date: 16.03.2025

Please keep a copy of this consent form for your records.

Thank you for your time and participation in this study.

Nousin Laila Bristi,
Assistant Professor, English Language Institute, United International University, Bangladesh
Ph.D. Candidate, Academy of Language Studies, University Technology Mara, Malaysia

APPENDIX 11

Interrater Evaluation Form for Classroom Observation Protocol

Classroom observation protocol

Examining EFL Teachers' Knowledge, Motivation, and Practices of Critical Thinking in Bangladeshi Tertiary Institutions

Name of the expert (Pseudonym):

_____

Designation:

_____

Institution:

_____

Email/ Phone number:

_____

Expert's signature: _____

Date: _____

Brief description of the project:

In this age of information affluence and increasing complexity of life and communication, critical thinking is treated as an essential skill that learners of every discipline need to master. The urge to learn critical thinking skills is accompanied by many challenges, one of which is teachers' lack of knowledge about critical thinking, its teaching, and the necessary skills to foster critical thinking skills. Teachers are the key personnel in equipping learners for 21st-century living. Hence, researchers, including those in English as a Foreign Language (EFL) teaching and learning across the globe, are showing their concerns in identifying and solving teacher issues.

In the above connection, the present study thus attempts to explore Bangladeshi EFL teachers' perceptions and practices of critical thinking. The study adopts a mixed-method design for the purpose. Interviews, classroom observation, and a questionnaire survey will be conducted to answer the research questions. 12 EFL faculty members from different public and private universities will be selected for the qualitative study, and 103 faculty members will be selected for the quantitative study. Data will be analyzed at multiple levels to comprehensively understand the context under exploration. The study's findings will be helpful not only to the teacher but also to teacher educators and EFL education planners. In addition, the researcher plans to make some recommendations based on the findings.

Purposes of Classroom Observation:

During the observation, the researcher will take detailed notes on the following points:

4. Observe classroom events related to the development of critical thinking
5. Record factual information about the classroom events, e.g., Teachers' behavior that creates an un-threatened classroom environment, activities and strategies that engage students in collaborative, thought-provoking learning, teacher's instruction that facilitates critical thinking, teacher-student interaction
6. Record personal interpretation of the observed points

Please rate the observation items using the following values

Perfect – 5 Excellent – 4Good – 3 Fair – 2 Poor - 1

Observed Topics		**1**	**2**	**3**	**4**	**5**
Teachers' behavior that creates an un-threatened classroom environment	1. The teacher makes a friendly gesture while entering the class.					
	2. The teacher has supportive gestures while giving instructions.					
	3. The teacher has positive gestures while giving corrective					

	feedback.					
Activities and strategies that engage students in collaborative, thought-provoking learning	1. The teacher uses ICT in class					
	2. The teacher uses interesting materials in the class					
	3. The teacher uses open-ended questions.					
	4. The teacher allows students to discuss the topic among themselves.					
Teachers' instruction that facilitates critical thinking	1. The teacher provides clear instructions in the class.					
	2. Teacher helps students whenever needed					
	3. The teacher provides constructive feedback					
Teacher-student interaction	1. The teacher allows students to express their opinions freely.					
	2. The teacher accepts questions from students positively.					
	3. Students talk most of the time in the class.					

APPENDIX 12

Interrater Evaluation Form for Questionnaire

Questionnaire Evaluation Scale

Project Title: Examining EFL Teachers' Knowledge, Motivation, and Practices of Critical Thinking in Bangladeshi Tertiary Institutions

Name of the rater:

_____

Designation:

_____

Institution:

_____

Email/ Phone number:

_____

Rater's signature: _____

Date: _____

Brief description of the project:

In this age of information affluence and increasing complexity of life and communication, critical thinking is treated as an essential skill that learners of every discipline need to master. The urge to learn critical thinking skills is accompanied by many challenges, one of which is teachers' lack of knowledge about critical thinking, its teaching, and the necessary skills to foster critical thinking skills. Teachers are the key personnel in equipping learners for 21st-century living. Hence, researchers, including those in English as a Foreign Language (EFL) teaching and learning across the globe, are showing their concerns in identifying and solving teacher issues.

In the above connection, the present study thus attempts to explore Bangladeshi EFL teachers' perceptions and practices of critical thinking. The study adopts a mixed-method design for the purpose. Interviews, classroom observation, and a questionnaire survey will be conducted to answer the research questions. 12 EFL faculty members from different public and private universities will be selected for the qualitative study, and 66 faculty members will be selected for the quantitative study. Data will be analyzed at multiple levels to comprehensively understand the context under exploration. The study's findings will be helpful not only to the teacher but also to teacher educators and EFL education planners. In addition, the researcher plans to make some recommendations based on the findings.

Objectives of the questionnaire:

- The questionnaire will be used to collect data on Bangladeshi tertiary EFL teachers' knowledge, motivation and perceived practices of critical thinking.
- The knowledge and perceived practice items of the questionnaire have been developed based on the conception of critical thinking (section- 2.3), Bloom's taxonomy of educational objectives (section – 2.4) and social constructivism (section - 2.5) whereas the motivation items have been developed based on the self-determination theory (section - 2.6).

Please rate the questionnaire items using the given values

Perfect – 5

Excellent – 4

Good – 3

Fair – 2

Poor – 1

KNOWLEDGE							
Item categories	**Serial**	**Items**	**Values**				
			1	**2**	**3**	**4**	**5**
Conception of critical thinking	1.	Critical thinking is thinking for problem-solving.					
	2.	Critical thinking is aimed for decision-making.					
	3.	Critical thinking means logical thinking.					
	4.	Critical thinking indicates random thinking.					
	5.	Inferencing is a part of critical thinking.					
	6.	One needs to be curious to think critically.					
	7.	A critical thinker needs to be a reflective thinker.					
	8.	A critical thinker must think in an organized way.					
	9.	One needs to have tolerance for different opinions to think critically.					
	10.	One needs to stay unbiased about different viewpoints while thinking critically.					
	11.	Multicultural awareness is important for critical thinking.					
	12.	Creativity is necessary for thinking critically.					
	13.	A critical thinker must be an ethical and honest person.					

	14.	A critical thinker is ready to change his/her thoughts based on the true information.					
	15.	A critical thinker is a confident thinker.					
Knowledge of teaching critical thinking	16.	It is impossible to teach critical thinking.					
	17.	Critical thinking is important for English learners.					
	18.	WH- questioning can engage learners in critical thinking.					
	19.	Contradictory topics invite the learners' critical thinking.					
	20.	I think multicultural topics are helpful in developing critical thinking skills.					
	21.	Debating activity can enhance learners' critical thinking.					
	22.	Problem-based activities are good for teaching critical thinking.					
	23.	Technology can help me to teach critical thinking.					
	24.	Group or pair work are effective for developing learners' critical thinking.					
	25.	Sharing personal comments on the contents can enhance learners' critical thinking.					
	26.	Student-centered classes are necessary for developing learners' critical thinking.					

	27.	A teacher has to flexibly accept students' different viewpoints to encourage their critical thinking.					
	28.	A teacher must allow students to ask questions to support critical thinking.					
	29.	A teacher must frankly respond to the learners' questions to support critical thinking.					
	30.	A teacher must have positive attitudes to the learners' critical thinking abilities,					

APPENDIX 13

Sample Member Checking Acknowledgement Form

Member Checking Acknowledgment Form

Researcher Name: Nousin Laila Bristi
Participant Name: Sony (Pseudonym)
Classroom Observation Date: 9.3.2025
Classroom Observation Time: 11:35 am – 12:50 pm
Classroom Observation Report Sent: 31.5.2025
Date Reviewed: 1/ 06/2025

Purpose:
To confirm the accuracy of the interview transcript and the semi-structured classroom observation report as part of the research process.

Feedback/Comments: It was a great experience to be a part of this research project. I wish all the best to the researcher toward a successful academic endeavor.

Confirmation Statement:
I confirm that I have reviewed the interview transcript provided by Nousin Laila Bristi and verify its accuracy to the best of my knowledge. Any corrections or clarifications I have provided above represent my intended meaning. Also, I confirm that the ethical standards have been maintained by ensuring the participant's privacy.

Participant Signature: ____ _____
Date: _____01.06.2025_____

Researcher Signature: _____
Date: 01-06-2025 _____

APPENDIX 14

Sample of Reviewer Comments on Research Instruments

Semi-structured Interview Protocol

Sub-topic 1: Conception of critical thinking	
Old Questions	**New questions**
1. Tell me your idea about critical thinking.	a. Tell me your idea about critical thinking.
2. Tell me about the importance of teaching critical thinking in the present world.	b. Tell me the importance of teaching critical thinking to undergraduate students in the contexts of the present world.
3. Do you think critical thinking should be taught in EFL class? Why/ why not?	c. In your opinion, can teaching critical thinking help students learn English better? *If yes, why and how? If not, why?*

Commented [MA2]: present context of Bangladesh

Broad topic 2 – Knowledge of teaching critical thinking

Sub-topic 1: Teaching Materials	
Old questions	**New questions**
1. Do you integrate critical thinking in your class? Why/ why not?	**a. Eliminated**
2. What kind of materials should be used to teach critical thinking? Please explain their characteristics.	*b.* In your opinion, what materials are the most effective for teaching critical thinking in EFL class? *Why do you think so?*
3. What types of teaching materials do you use in your class?	c. What types of teaching materials do you typically use in your class? *Can you name some?*
4. What kind of thinking do these materials require?	d. What type of thinking do these materials encourage in your students? *For example, do they focus on understanding, remembering, or promoting higher-order thinking?*
5. Are these materials designed to engage students in problem-solving and decision-making? Please explain.	*e.* Do these materials help students practice problem-solving and decision-making skills? *If yes, how? If not, why?*

Commented [MA3]: If someone does not teach critical thinking in their EFL class, how are they expected to attempt this question?

Commented [MA4]: engage in

Commented [MA5]: skills in classroom

Survey Questionnaire



Dr. Md Tarikul Islam Wed, Sep 3, 1:56 PM (4 days ago)

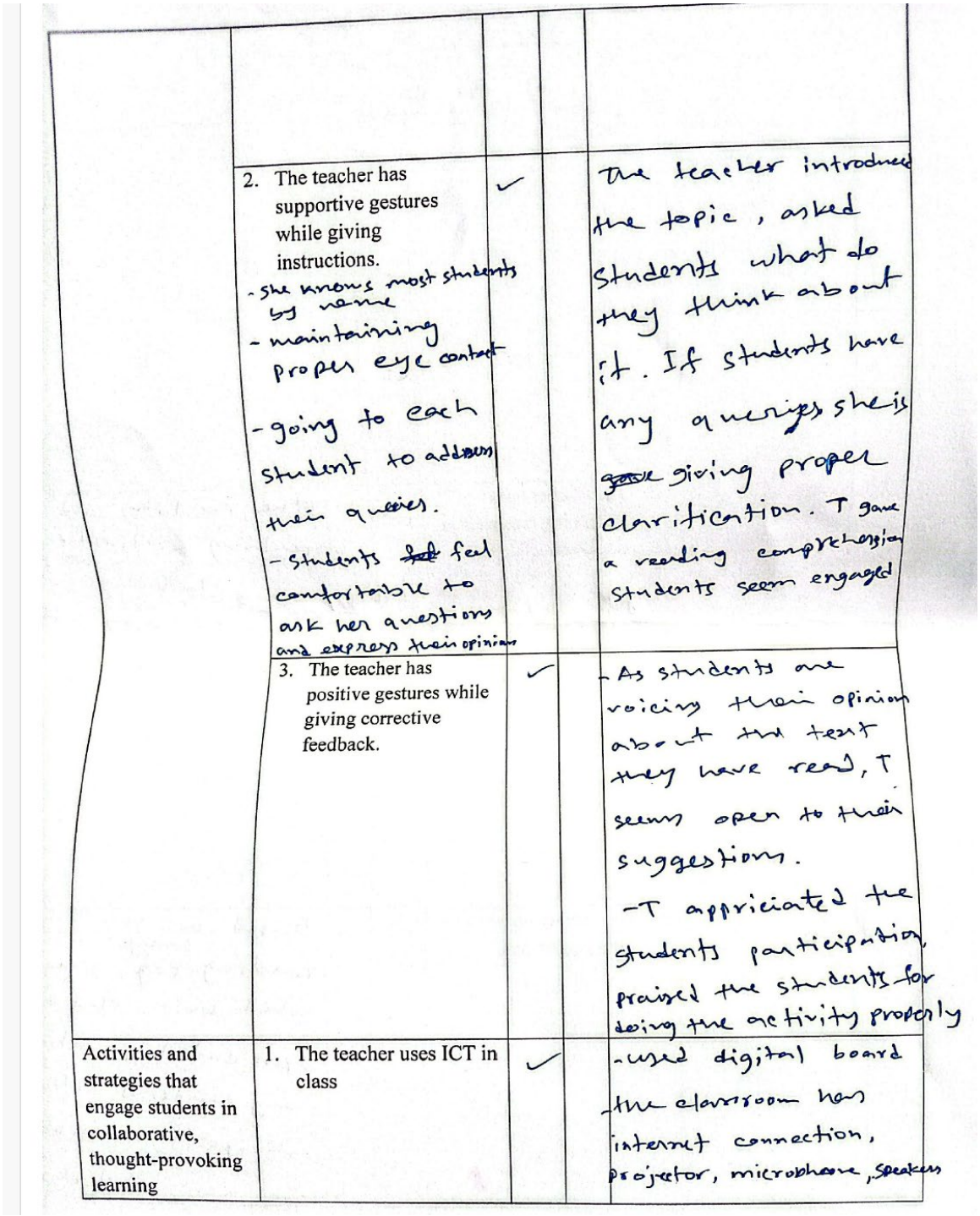
to me

Dear Madam,
Thanks for giving me the opportunities.
I have gone through the questionnaire which is perfectly okay for collecting data.

Thanks and Regards
Dr. Md Tarikul Islam

APPENDIX 15

Sample Peer Debriefing Notes



	2. The teacher has supportive gestures while giving instructions. - she knows most students by name - maintaining proper eye contact - going to each student to address their queries. - Students ~~feel~~ feel comfortable to ask her questions and express their opinion	✓		The teacher introduced the topic, asked students what do they think about it. If students have any queries she is ~~gave~~ giving proper clarification. T gave a reading comprehension students seem engaged
	3. The teacher has positive gestures while giving corrective feedback.	✓		- As students are voicing their opinion about the text they have read, T seems open to their suggestions. - T appriciated the students participation, praised the students for doing the activity properly
Activities and strategies that engage students in collaborative, thought-provoking learning	1. The teacher uses ICT in class	✓		- used digital board - the classroom has internet connection, projector, microphone, speakers

APPENDIX 16

Qualitative Themes and Questionnaire Items Map

Qualitative Theme Mapping with Questionnaire
Part B- Knowledge

Knowledge of critical thinking (Content Knowledge)				
Conception of critical thinking (New items)	**Connection with Literature-based (Existing) version**	**Sub-theme/Micro theme**	**Connected qualitative findings (interview)**	**Justification statement for the selection from qualitative findings**
K1. Critical thinking means analyzing, evaluating and creating information.	No (1,2,3,5)	Conception of CT	4.4.1.1	This micro-theme was selected because participants consistently defined CT in terms of Bloom's higher-order thinking processes, which show teachers' awareness of analysis, evaluation, and creation as core critical thinking skills.
K2. Critical thinking involves problem-solving and decision-making.	Yes (1,2)	Conception of CT	4.4.1.1	This is derived since teachers described critical thinking as a problem-solving and decision-making strategy beyond general thinking, making it contextually relevant for EFL teaching.
K3. Critical thinking means truth-seeking, tolerance and unbiasedness.	Yes (9, 10, 14)	Conception of CT	4.4.1.1	This reflects participants' emphasis on critical thinking dispositions, such as truth-seeking and unbiased judgment. Since critical thinking dispositions are crucial components of critical thinking, this has been included for broader identification.
K4. Critical thinking requires creativity and reflection.	Yes (7, 12)	Conception of CT	4.4.1.1	Teachers indicated critical thinking as creativity and reflectivity as part of broader Higher-Order Thinking, making this item crucial for capturing their nuanced definition of critical thinking.
K5. Critical thinking is viewing things from multiple perspectives.	No	Conception of CT	4.4.1.1	This was derived from teachers' contextualized understanding of critical thinking as multi-perspective thinking, indicating how they encourage learners to look at issues from diverse viewpoints.
K6. Critical thinking is a 21st-century skill.	No	Conception of CT	4.4.1.1	This item was selected because teachers identified critical thinking as a core 21st-century skill required to

APPENDIX 17

Ethical Approval Letter from UiTM

UNIVERSITI TEKNOLOGI MARA
Pejabat
Timbalan Naib Canselor
(Penyelidikan dan Inovasi)

Reference : 600-TNCPI (5/1/6)
Our reference : REC/08/2024 (PG/MR/412)
Date : 1445H صفر 17
22 August 2024

Ms Nousin Laila Bristi - 2022314579
(Supervisor: Assoc. Prof. Dr Latisha Asmaak Shafie)
Academy of Language Studies
UiTM Perlis Branch
Arau Campus
02600 Arau
PERLIS

سلام عليكم ورحمة الله وبركاته and Greetings

Ms

APPROVAL LETTER - UiTM RESEARCH ETHICS COMMITTEE

Thank you for submitting your research proposal to the Research Ethics Committee (REC). After considering your application, the Committee approved your proposal titled "An Examination on EFL Teacher's Knowledge, Motivation and Practices of Critical Thinking in Tertiary Institutions in Bangladesh" in Dhaka, Bangladesh. Details of the approval are as follows:

Ref. number:	REC/08/2024 (PG/MR/412)
Approval Period:	22 August 2024 until 31 March 2026
Authorised personnel:	1. Nousin Laila Bristi 2. Assoc. Prof. Dr Latisha Asmaak Shafie

The UiTM Research Ethics Committee operates in accordance to the ICH Good Clinical Practice Guidelines, Malaysian Good Clinical Practice Guidelines and the Declaration of Helsinki. The approval of this project is conditional upon your continuing compliance with these guidelines and declaration.

We draw to your attention the requirement that a report on this research, must be submitted every 12 months from the date of the approval or on the completion of the project, whichever occurs first. Failure to submit reports will result in withdrawal of consent for the project to proceed. Amendments, if any, to the study documents are to be submitted to the REC for approval.

If you require further information, please contact the REC Secretariat at 03-55448069/03-55442794 or email at recsecretariat@uitm.edu.my.

اوسها، تقوى، موليا
"MALAYSIA MADANI"
"BERKHIDMAT UNTUK NEGARA"

Yours sincerely,

(EMERITUS PROFESSOR DATO' DR RAYMOND AZMAN ALI)
Chairman
UiTM Research Ethics Committee

c.c.: Deputy Rector (PJIM&A), UiTM Perlis Branch

Universiti Teknologi MARA
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40450 Shah Alam, Selangor, MALAYSIA
Tel: (+603) 5544 2004/2255
Faks: (+603) 5544 2070

ISO 9001:2015 No. Sijil: 10120156
UiTM di hatiku

APPENDIX 18

Ethical Approval Letter from United International University

United International University

Date: January 11, 2025

Project Title: An Examination on EFL Teachers' Knowledge, Motivation and Practices of Critical Thinking in Tertiary Institutions in Bangladesh

Name of the Investigators: Ms. Nousin Laila Bristi, Dr. Latisha Asmaak Shafie, Dr. Hafizah Binti Hajimia and Prof. Dr. Md Kamrul Hasan

IREB Reference No.: IREB-2025-005

Ethical Approval

This is to certify that the research project entitled **"An Examination on EFL Teachers' Knowledge, Motivation and Practices of Critical Thinking in Tertiary Institutions in Bangladesh"** presented by **Ms. Nousin Laila Bristi, Dr. Latisha Asmaak Shafie, Dr. Hafizah Binti Hajimia** and **Prof. Dr. Md Kamrul Hasan** was reviewed by Institutional Research Ethics Board of United International University (UIU) and was found to be compliant with Ethical Standards of UIU.

Professor Dr. M. Rezwan Khan
Chairman
Institutional Research Ethics Board

UIU Campus: United City, Madani Avenue, Dhaka-1212, Bangladesh, Tel: +880 9604 848848, Email: info@uiu.ac.bd, Website: **www.uiu.ac.bd**

Quest for Excellence Quest for Excellence Quest for Excellence Quest for Excellence
Quest for Excellence Quest for Excellence Quest for Excellence Quest for Excellence

AUTHOR'S PROFILE



Nousin Laila Bristi obtained her Bachelor of Arts (Hons.) in English in 2009 with a distinguished position of second class ninth, followed by a Master's of Arts (MA) in Applied Linguistics and ELT in 2011 with a distinguished position of second class sixth from the University of Dhaka. Currently, she is an Assistant Professor in the Department of English at United International University in Dhaka, Bangladesh. The overarching focus of her thesis is Bangladeshi tertiary EFL teachers' professional development in critical thinking instructions. Specifically, the thesis highlights Bangladeshi tertiary EFL teacher development in knowledge, motivation and practices of critical thinking. She has published her research works in prestigious Scopus- and Web of Science-indexed journals. Her research interests include professional development, psycholinguistics, sociolinguistics, educational technology and English Language Teaching.

LIST OF PUBLICATIONS:

Bristi, N. L., Shafie, L. A., Hajimia, H. B., & Hasan, M. K. (2025). A systematic literature review of empirical studies on tertiary EFL teachers' motivation and demotivation. *Cogent Education*, *12*(1), 2470564. Doi: https://doi.org/10.1080/2331186X.2025.2470564 (Indexed in **Web of Science, Emerging Sources Citation Index: Scopus**- indexed; **Q2**, **H**-Index: **43**; **Cite Score 2024: 2.9; Impact Factor in 2024: 2.1**) [Publisher: **Taylor & Francis**]

Bristi, N. L., Shafie, L. A., Hajimia, H. B., & Hasan, M. K. (2025). Decoding EFL learners' intention to use ChatGPT for academic writing: Cognitive and emotional

drivers. *International Journal of Learning, Teaching and Educational Research*, *24*(3), 1-28. Doi: https://doi.org/10.26803/ijlter.24.2.1 **(Scopus-indexed; Q3; H-index: 20; Cite Score 2024: 2.2)** [Publisher: **Society for Research & Knowledge Management**]