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Chapter 1

Introduction

This book aims to unravel the nature and nurture of critical thinking (CT) in English as foreign language (EFL) writing by investigating EFL writing teachers' conceptions of CT, their endeavours to integrate CT in EFL writing within their situated contexts, the possible impact on student learning of CT and EFL writing, and the range of individual and contextual factors influencing the teaching and learning of CT in EFL writing classrooms. The introductory chapter firstly depicts the background of the study and underscores the research gaps. It then presents the objectives, research design, as well as the significance of the study, and concludes with an outline of the book.

1.1 Background of the study

With the rise of CT movement (Nosich, 2012, 2022; Paul, 1985) and the writing-across-the-curriculum movement (Bazerman et al., 2005; Bean, 2011; Bean & Melzer, 2021) in the 1970s, there has been growing worldwide recognition of the importance and urgency to improve student learning of CT and writing among researchers, policymakers, practitioners, and employers (Ananiadou & Claro, 2009; Casner-Lotto & Barrington, 2006; Chu et al., 2017; OECD, 2015; Petek & Bedir, 2018; Siegel, 1980; Trilling & Fadel, 2009; World Bank, 2015). This section first delineates the central role of CT in education especially in second language (L2) contexts and the urgency of fostering CT among students. Following that, it depicts the status quo of research on the integration of CT in L2 writing and highlights the research gaps towards the end.

1.1.1 The exigency of CT education around the world

As important higher-order thinking, CT is generally understood as rational, fair-minded, and reflective thinking which facilitates sound judgment and provokes a quest for intellectual excellence in the service of both individual and common good (e.g., Ennis, 2018; Facione, 1990; Halx & Reybold, 2005; Paul & Elder, 2001). It is seen as pivotal to academic achievement, workplace success and global citizenship in the era of information deluge and knowledge explosion (Chu et al., 2017; Dwyer & Eigenauer, 2017; Fisher, 2011). It has received substantial attention from researchers, policymakers, and practitioners in the education reform. At the research level, theorists and educators are dedicated to defining CT (Bailin et al., 1999; Facione, 1990; Paul & Elder, 2008) and exploring effective strategies to teach and assess CT (e.g., Abrami et al., 2015; Ennis, 1993, 2018). At the policy level, CT is explicitly included as a core outcome of education at all levels and an essential graduate attribute in many countries and regions (e.g., AAC&U, 2005, 2011; British Columbia Ministry of Education, n.d.; HEQC, 1996; Ministry of Education of Singapore, 2009; White, 2004). At the instructional level, teachers around the world are found to show substantial respect for the notion of CT (Choy & Cheah, 2009; Stapleton, 2011; Tuzlukova, Al Busaidi, & Burns, 2017). They are also encouraged to teach CT through stand-alone CT courses and/or integrating CT into the subject matter instruction (e.g., Ennis, 1989; Kurfiss, 1988; Moon, 2008; Petek & Bedir, 2018).

Despite the acknowledged importance of CT, it is found that many students have not satisfactorily improved their CT in the university (AAC&U, 2005; Casner-Lotto & Barrington, 2005; Flores et al., 2012; NCEEN, 1983; Pascarella & Terenzini, 2005; Staib, 2003; Walsh & Paul, 1986). For instance, Arum and Roksa (2011) tracked the educational development of American college students from 2005 until 2009, discovering that 45% of students made no significant improvement in CT during the first two years of college and 36% showed no significant improvement after four years of college study. The findings are consistent with other research which suggests that CT is rarely taught in universities due to some individual and contextual factors, e.g.,

conceptual confusion about CT and lack of teacher preparation (Halx & Reybold, 2005; Paul, Elder, & Bartell, 1997; Staib, 2003; Stedman & Adams, 2012; Tsui, 2002). They are also supported by others who maintain that CT is neither developed as a by-product of students' natural maturing process (Cargas, Williams, & Rosenberg, 2017; Walsh & Paul, 1986) nor that of standard instruction in a content area (Halpern, 2014).

In addition, most research on CT has been conducted in English-speaking countries where students speak English as their first language (Pu & Evans, 2019; Thompson, 2002). It was not until the 1990s that CT was introduced to L2 education partly due to the increased enrolment of international students in English-speaking countries who were required to demonstrate CT, especially in academic writing (Bennett, 2018; Pu & Evans, 2019). In EFL contexts, however, the appropriateness of CT instruction has been highly controversial (Atkinson, 1997; Davidson, 1998; Stapleton, 2001, 2002). Even though CT has now generally been considered as “a basic human survival mechanism” (Casanave, 2004, p. 206), CT has oftentimes been regarded as a challenge for EFL (especially Asian) learners and teachers due to their sociocultural and linguistic backgrounds as well as educational experience (Bennett, 2018; Egege & Kutieleh, 2004; Manalo et al., 2013; Shaheen, 2016; Zou & Lee, 2021). Research conducted in EFL contexts also suggests that EFL teachers generally take a surface approach to teaching and rarely focus on the cultivation and development of students' CT in classrooms (Mok, 2009; Tang, 2016; Veliz & Veliz-Campos, 2019; Zhang, Yuan, & He, 2020). The exigency of CT education especially in EFL contexts requires further efforts to improve teachers' ability to teach CT and to enhance students' ability to think critically, which provides fresh impetus for the present study.

1.1.2 An increasing emphasis on CT education in China

In China, the ideas of CT education were firstly applied to the field of education in the middle 1990s when there were growing appeals to substitute quality-oriented education for examination-oriented education and foster

thinking skills among Chinese students (Dong, 2015). Over the last decade, developing students' CT has been one top priority in the overall education reform agenda across China (Dong, 2015; State Council, 2017; Ministry of Education of the People's Republic of China, 2018). For instance, the Outline of China's National Plan for Medium-and-Long-Term Education Reform and Development (2010-2020) issued in 2010 accentuated the exigency of creating favourable conditions to foster students' thinking (Ministry of Education of the People's Republic of China, 2010). In 2016, CT was explicitly included as one core competence all Chinese students should develop (Lin, 2017). More recently, the National 13th Five-Year Plan for Educational Development reiterated the importance of developing students' logical thinking and critical thinking in primary, secondary and post-secondary education (State Council, 2017). Along with the growing appeals to develop students' CT in China, CT is gradually taught to students either through stand-alone CT courses or being integrated into subject-matter courses (Dong, 2015; Wang, Liyanage, & Walker, 2019).

Ever since Huang (1998) raised the issue of "absence of CT" among English learners in China, CT has received unprecedented attention among EFL researchers and administrators (Chen et al., 2018; Zhang et al., 2020). For instance, the new national curriculum standards include CT as one essential graduate attribute (Ministry of Education of the People's Republic of China, 2018) and suggest that university EFL programs combine CT training and language acquisition. The Guidelines on College English Teaching also highlights the importance of integrating CT in EFL classrooms to empower non-English majors to engage in their disciplinary studies and academic research in English (Ministry of Education of the People's Republic of China, 2020). Nevertheless, the growing local research has shown that the EFL learners in China as a whole are weak in CT (Chen et al., 2018; Wen, 2012). It is also reported that CT is peripheral to tertiary English language education and EFL teachers are not well prepared for CT instruction in China (Li, 2016; Tang, 2016; Zhang et al., 2020). Against this background, there has been much

scholarly discussion about how to effectively integrate CT in English language education at conferences (e.g., the 2nd Symposium on National Foreign Language Education Reform and Development) and in academic journals. A number of teaching initiatives have also been proposed to integrate CT in English language classrooms, especially in EFL writing classrooms (e.g., Zou, Su, & Chen, 2021).

1.1.3 A surge of interest in integrating CT in L2 writing instruction

As a special mode of communication, learning and thinking (Biber & Conrad, 2009; Emig, 1977), writing plays an increasingly more important role in the teaching, learning and assessment of CT. Intrinsically related to CT, writing has been construed as a process and product of critical thoughts (Bean, 2011; Bean & Melzer, 2021) and the development of CT and writing goes in tandem (Chaffee & Carlson, 2015; Lin, 2018; Paul & Elder, 2013). Given the reciprocal relationship between CT and writing, much scholarly and pedagogical attention has been devoted to exploring effective ways to infuse CT in writing instruction to facilitate their concurrent development (Cottrell, 2017; Hatcher, 1999). To date, a wide range of “best practice” advice has been proposed to integrate CT in writing instruction, e.g., instruction in reasoning, explicit inclusion of CT elements in writing rubrics, and revision-oriented comments (e.g., Bean & Melzer, 2021; Hillocks, 2010; McLaughlin & Moore, 2012; Zou et al., 2021).

Specific to L2 writing context, there is also a surge of interest in integrating CT in the teaching, learning, and assessment of L2 writing in the past decade partly as a result of the introduction of CT to L2 education in the 1990s (Pally, 1997; Pu & Evans, 2019; Silva, 2016). An increasing number of researchers and teachers start to discuss the feasibility of teaching and assessing CT in L2 contexts especially in EFL writing classrooms (Barnawi, 2011; Mehta & Al-Mahrooqi, 2015) and explore effective strategies to incorporate CT in L2 writing instruction (Dong, 2018; Liu & Stapleton, 2014; Tanaka & Gilliland,

2017). In China, for instance, various attempts have been made to integrate CT in stand-alone EFL writing courses and writing-intensive courses (e.g., English Reading and Writing), as evidenced by the rapid growth of scholarly articles and discussions, official documents, and research projects on the teaching and assessment of CT in EFL writing (e.g., Chen et al., 2018; Dong, 2018; Zou et al., 2021). This small body of research and teaching inquiries overall evince the possibility and potential of integrating CT in L2 writing for student learning of both CT and L2 writing (e.g., Liu & Stapleton, 2014). More importantly, they provide a wide array of strategies and techniques for teachers who intend to join the venue. However, there still exist some gaps and questions to be resolved in the existing literature in order to maximize the benefits of integrating CT in L2 especially EFL writing instruction.

Firstly, despite the trend of conceptualizing CT as a combination of generic abilities and subject-specific knowledge and experience (e.g., Davies, 2006), the existing research on CT in L2 writing has mainly defined CT in a generic sense, with scant attention given to the features of L2 writing (except Dong, 2018). Where the generic CT and L2 writing-specific mode meet and converge is still “open for conjecture” (Davies, 2013, p.535) and needs further attention in the third wave of CT movement. There is a need to take “a disciplined approach to CT” (Jones, 2015, p. 169) to develop “more comprehensive definitions” (Thonney & Montgomery, 2019, p. 174) as well as to examine what exactly is meant by CT and how it is articulated, taught, and enacted in particular disciplinary contexts (Jones, 2009, 2015) by investigating and interviewing multiple representatives from the specific discipline (i.e., L2 writing). Such practitioners’ knowledge, being “linked with practice,” “detailed, concrete, and specific,” and “integrated” (Hiebert, Gallimore, & Stigler, 2002, p. 6), can not only contribute to the third-wave conceptualization of CT (Paul, 2011), but also benefit CT education—one of the “major unsolved problems of pedagogy” (Kuhn & Dean, 2004, p. 269).

Secondly, although previous studies on the integration of CT in L2 writing have overwhelmingly highlighted its positive influence on student learning of

CT and/or L2 writing (e.g., Chason et al., 2017), scant attention has been paid to what actually occurs in the classrooms when L2 teachers integrate CT in their writing instruction. Little is known about how L2 teachers actually understand CT and integrate CT in L2 writing instruction, what impact teachers' attempts to integrate CT in L2 writing have on student learning of CT and L2 writing, and how their practice is shaped by their sociocultural contexts. Such inquiries can on the one hand generate a holistic and in-depth understanding of the teaching and learning of CT in L2 writing classrooms, and on the other hand throw light on the exigency of CT education in L2 contexts (Mok, 2009; see Section 1.1.1).

Thirdly, similar to the previous research on CT in general and that on CT in L2 contexts in particular, the studies on the integration of CT in L2 writing instruction do not display much variation in research design, with majorities of them being experimental (Alnofaie, 2013) and showing “an overwhelming reliance on quantitative data” (Tsui, 2002, p. 742). Admittedly, the group of (quasi-) experimental research enables researchers to identify the causal relationship between a particular instructional strategy and student learning of CT and/or L2 writing and to provide a suite of instructional strategies for teachers to integrate CT in L2 writing instruction. Its potential limitations also warrant attention, such as the insensitivity to ethical tensions in educational research, negligence of the complexity in actual classroom teaching and learning, as well as inapplicability to local contexts and individual cases (e.g., Taylor, 2014; Tudor, 2003). This in turn requires an alternative inquiry paradigm and research design to obtain an in-depth, holistic understanding of teachers' attempts at integrating CT in L2 writing within their situated contexts.

To fill the research gaps above, the present study utilizes a naturalistic inquiry to unravel the nature and nurture of CT in L2 writing by investigating how CT is actually understood, taught and learnt in naturalistic EFL writing classrooms.

1.2 Objectives and research design

Informed by the existing literature on CT and L2 writing, the present study aims to explore CT in EFL writing in educational reality by examining how CT is understood, taught, and learnt in naturalistic settings. Specifically, it sets out to address the following research questions.

1) How do the EFL teachers understand CT and CT in EFL writing? How do they implement CT instruction in their tertiary EFL writing classrooms in China?

2) At the end of CT instruction in the EFL writing classrooms, how well do students fare in their learning of CT and EFL writing?

3) What are the factors that may influence the teaching and learning of CT in EFL writing classrooms in China?

To address the research questions above, the present study adopted a naturalistic inquiry paradigm and employed a multiple-case research design. Three EFL tertiary writing teachers in China who demonstrated a strong commitment to CT instruction and who received professional input on CT and/or experimented CT instruction in their EFL classrooms, as well as the students enrolled in their EFL writing courses, were invited to participate in the study. The understanding, teaching, and learning of CT in EFL writing were examined through the triangulation of multiple sources of data, including semi-structured interviews with teachers, students, and department heads, classroom observations (with field notes), pre- and post-study writing tests and questionnaire surveys, and a variety of documents (e.g., PowerPoint slides, syllabus, students' writing assignments).

1.3 Significance of this study

The present study, which examines how CT is actually understood, taught and learnt in three naturalistic EFL writing classrooms, has theoretical, methodological, and pedagogical significance as follows.

Theoretically, this study enriches our knowledge of the complex, multifaceted nature of CT in EFL writing through top-down and bottom-up theorizing. The conception of CT in L2 writing was firstly examined by synthesizing the existing literature on the generic CT abilities (e.g., Ennis, 1985; Facione, 1990; Paul & Elder, 2008) and disciplinary features of L2 writing (e.g., Byrnes, 2013; Flower & Hayes, 1981). This top-down theorizing approach allows us to outline the general features and principles of CT in L2 writing in academic tribes. Then a bottom-up approach was employed to involve teachers in the research enterprise to obtain a more nuanced understanding of what CT in EFL writing is, based on information obtained from real classroom contexts. The value of the bottom-up approach lies in that “the way that individual teachers conceive of a concept... becomes, in effect, its normative form—and such conceptions in their situational collectivity then become the habitus with which students must contend” (Moore, 2011a, p. 56). Focusing on three committed and respectable EFL writing teachers with experience and/or training in CT instruction, this study treats seriously the CT-related knowledge produced by teachers in their classroom inquiries as educational knowledge (Zeichner, 1995) and it is likely to unveil the “normative form” of CT in EFL writing in its everyday use. In this sense, the two theorizing approaches together enable us to unpack the features of CT in EFL writing with greater pedagogical relevance and contribute to the third-wave theorization of CT in CT movement.

Methodologically, this study expands the methodological scope of the existing research on CT in L2 writing instruction in which quantitative methods and (quasi-) experimental research designs take preponderance. Based on a naturalistic inquiry paradigm, this study goes beyond the predominant methodology in the existing literature and adopted a case study approach with a multiple-case design to collect both qualitative and quantitative evidence. Through such an inquiry, this study enables us to engage teachers “in close contact with knowledge building in their field” (Kuhn & Dean, 2004, p. 269), “climb inside the ‘black box’” (Erlandson et al., 1993, p. 68) of integrating CT in EFL writing, and uncover the complexity and multiple realities embedded in

the integration of CT in EFL writing classrooms (Guba & Lincoln, 1994; Merriam, 1998; Thomas, 2016).

Pedagogically, by uncovering the actual processes and outcomes of integrating CT in EFL writing instruction in situated contexts, this study can yield useful implications concerning the implementation of CT instruction in EFL writing classrooms for different stakeholders, e.g., EFL writing teachers, teacher educators, and department heads in China and other similar contexts. Firstly, by looking at three committed and respectable teachers of CT in EFL writing who worked in different tertiary contexts, this study is able to reveal to EFL writing teachers the possibility, potential, and challenges associated with the integration of CT in EFL writing and provide them with a host of pedagogical strategies to implement CT in their own writing classrooms. In particular, at the classroom level, it can reveal some tangible strategies which teachers and students find effective in facilitating student learning of CT and/or EFL writing and which may be applicable to other writing classrooms. Secondly, the information gathered from this study can provide insights for teacher education programs to empower EFL teachers to integrate CT in their writing instruction with a particular focus on the teaching and assessment strategies applicable to EFL writing classrooms as well as the strategies to deal with various internal and external constraints which prevent them from the full implementation of CT instruction. Thirdly, by identifying the facilitative and impeding factors influencing the teaching and learning of CT, this study can generate useful implications for educational administrators, policymakers, and textbook publishers in terms of how to foster a deliberate collective effort to support EFL teachers in integrating CT in their writing instruction.

1.4 Outline of the book

This book is comprised of 11 chapters. Chapter 1 introduces the background, statement of research problems, the purpose, research design, and the significance of the present study. It also presents the overall organization of

this book.

Chapter 2 examines the nature of CT. It starts with a potted history of CT, and then scrutinizes its definitions and components, and discusses the generalizability debate on it. Following that, this chapter examines its generalizability and proposes a working definition of CT for this study.

Chapter 3 zooms in on CT in L2 writing. It examines the cognitive, social, and linguistic facets of L2 writing as well as the reciprocal relationship between CT and L2 writing. Given the close link between CT and writing, it critically revisits the previous conceptions of CT in L2 writing and presents a working definition for CT in L2 writing.

Chapter 4 moves on to an in-depth discussion on the teaching, learning, and assessment of CT in L2 writing. Starting with an overview of important questions and approaches concerning how to teach and assess CT in general, this chapter looks closely at the strategies for teaching and assessing CT in L2 writing and influencing factors, and identifies the unresolved issues in the exiting literature.

Chapter 5 concerns the methodological issues of this study. Following the introduction of research questions, it explains the rationales of choosing naturalistic inquiry and case study research to investigate the integration of CT in EFL writing. Then the procedure for selecting research participants and a detailed portrayal of their biographical information are presented. After that, the process of data collection and analysis are explained. It then discusses my role as a researcher in the study. The chapter ends with the discussion of the issues of trustworthiness and research ethics.

Chapters 6, 7 and 8 report the three participating teachers' idiosyncratic understanding of CT, their approaches to implement CT instruction in EFL writing classrooms, and the possible impact on student learning of CT and EFL writing. The results overall point to a combinatory view on CT in EFL writing (e.g., Davies, 2013; Kennedy et al., 1991). Informed by the teachers' conceptions, they adopted a host of strategies to integrate CT in EFL writing respectively, which were found beneficial to student learning in this study.

Chapter 9 delineates the various factors affecting the teaching and learning of CT in EFL writing based on the careful examination of the three naturalistic EFL writing classrooms. It was found that teachers' beliefs, and professional knowledge, students' learning experience, linguistic background, and topical knowledge, institutional policy, collegial support, as well as the affordances and impediments from the wider educational context have played a pivotal role in shaping the teaching and learning of CT in EFL writing classrooms.

Chapter 10 discusses the major findings in relation to the theory, research, and practice in the field of CT and L2 writing. It examines the complex and multifaceted nature of CT in EFL writing by illuminating its prominent features and multiple facets, with a view to obtaining a more nuanced conception of CT in EFL writing. Then, it discusses the strategies for integrating CT in the teaching, learning, and assessment of EFL writing. This chapter ends with a detailed discussion on the ecological system of integrating CT in EFL writing by examining the range of internal and external factors involved.

The last chapter, Chapter 11, wraps up the whole study. Following the summary of the major research findings, it discusses the major limitations and contributions of this study. Then, it proposes some practical implications for CT education and EFL writing education as well as directions for future research.

Chapter 2

Critical thinking

As one of the most widely discussed concepts in education, CT has gained an increasing prominence in education (AAC&U, 2011; Davies & Barnett, 2015). But beyond consensus on the importance of CT, there exist many disagreements and disputes. Two central issues concern what CT is and how general it is (e.g., Davies, 2006; Ennis, 1985; McPeck, 1981; Moon, 2008; Moore, 2011a). Revolving around the definition questions of CT, this chapter presents a synopsis of the existing literature on the nature of CT. It starts with a historical review on CT, and then scrutinizes its definitions, components, and generalizability, which provides a general picture of CT and has important implications for the research on CT in L2 writing.

2.1 A historical review of CT

The word “critical,” stemming etymologically from Greek “κριτικός” (i.e., discerning judgment) and “κριτήριον” (i.e., standards), refers to the ability to make judgments with reference to certain standards. The idea of CT can be traced back to at least the times of Greeks, especially to Socrates and his practice of using “Socratic dialogue” to probe profoundly into those non-rational claims of knowledge as well as to guide his students to inquire what it meant to lead a wise and virtuous life (Moore, 2011b; Paul, 1985). CT “lurks intriguingly behind and about much of the thinking” (Moon, 2008, p. 5) in education and educational reforms, such as Socrates’s “examined life” (see Moore, 2011a), Cicero’s *multiplex ratio* and *ars* (see Moatti, 2015), Montaigne’s

“understanding and judgment” (1956, p. 125), and Dewey’s “reflective thinking” (1933, p. 9). It was not until the rise of the broad CT movement in the past five decades that this “buried” idea was given an explicit name.

For the majority of the idea’s history... CT has been “buried,” a conception in practice without an explicit name. Most recently, however, it has undergone something of an awakening, a coming-out, a first major social expression, signalling perhaps a turning-point in its history.
(The National Council for Excellence in Critical Thinking, n.d.)

Ever since the “coming-out” of the concept of CT, three waves of understanding, researching, and teaching CT have been identified in CT movement (Davies & Barnett, 2015; Paul, 2011). The first wave, beginning in the 1970s and predominated by philosophers and their concerns, was primarily based on the theory of logic, argumentation, and reasoning. CT was largely equivalent to the identification, analysis, and evaluation of arguments and logical structures as well as avoidance of fallacies of reasoning. In this vein, knowledge and skills concerning argumentation, logic, and reasoning were essential to produce good critical thinkers. Thus, a number of individual courses in CT or informal logic were introduced in the curriculum. Its influence can still be observed today, with many generalist CT and informal logic courses offered around the world (Davies & Barnett, 2015). The second wave occurred in the 1980s and emphasized CT in relation to attitudes, emotions, creativity, ideologies, the media, and so on. Rather than conceptualizing CT as argumentation, it had a much wider agenda and included a diversity of standpoints, such as cognitive psychology, critical pedagogy, feminism, and other discipline-specific approaches to CT (e.g., CT in business organization and management). As for CT instruction, reformers began to shift their attention from “How should one design an isolated CT course for college students?” to “How can CT be integrated into instruction across all subjects and all grade levels?” (Paul, 2011). The third wave of CT movement, according to Paul (2011), “represents a commitment to transcend the predominant

weaknesses of the first two waves (rigor without comprehensiveness, on the one hand, and comprehensiveness without rigor, on the other).” Although Paul (2011) sees this wave is “only just now beginning to emerge,” he argues for a comprehensive theory of CT, which does justice to the earlier emphasis on argumentation and logic, accommodates other important human traits (e.g., emotion), and encompasses both universal and context-specific elements.

To sum up, the idea of CT has a long history and has attracted much attention in education especially in the past five decades. Nevertheless, after years of dedicated scholarly work in different disciplines, CT remains “a source of confusion” (Moon, 2008, p. 19). There is a pressing need for understanding the nature of CT and taking a step further in the direction of the third wave of CT movement.

2.2 What CT is

The construct of CT has been regarded abstract, complex and multi-dimensional (Bensley et al., 2016; Kuhn, 2018; Moore, 2013). While researchers and practitioners have strived to define and deconstruct CT from multiple perspectives ever since its emergence, the existing literature points to a disparity in its definitions and components, which are revisited in this section to clarify the nature of CT.

2.2.1 Definitions of CT

A number of academics have devoted themselves to developing a clear understanding of CT and establishing an overarching definition of this term, among which three major approaches can be identified in the literature—philosophy, psychology and education (Lai, 2011; Lewis & Smith, 1993; Sternberg, 1986). Table 2.1 summarizes the major definitions of CT in the existing literature.

Table 2.1 Definitions of CT in philosophy, psychology, and education

Philosophy	Psychology	Education
<ul style="list-style-type: none"> • an embodiment of the ideal of rationality (Siegel, 1980, p. 8); • the appropriate use of reflective skepticism within the problem area under consideration (McPeck, 1981, p. 7); • reflective and reasonable thinking that is focused on deciding what to believe or do (Ennis, 1985, p. 45); • skilful, responsible thinking that facilitates good judgment, because it relies upon criteria, is self-correcting, and is sensitive to context (Lipman, 1988, p. 39); • purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or conceptual considerations upon which that judgment is based (Facione, 1990, p. 2); 	<ul style="list-style-type: none"> • the mental processes, strategies, and representations people use to solve problems, make decisions, and learn new concepts (Sternberg, 1986, p. 3); • the propensity and skills to engage in activity with reflective skepticism focused on deciding what to believe or do (Halonen, 1995, p. 76); • seeing both sides of an issue, being open to new evidence that disconfirms your ideas, reasoning dispassionately, demanding that claims be backed by evidence, deducing and inferring conclusions from available facts, solving problems, and so forth (Willingham, 2008, p. 21); 	<ul style="list-style-type: none"> • analysis, synthesis and evaluation (Bloom, 1956); • an investigation whose purpose is to explore a situation, phenomenon, question, or problem to arrive at a hypothesis or conclusion about it that integrates all available information and that can therefore be convincingly justified (Kurfiss, 1988, p. 2); • take new information and interrelate and/or rearrange and extend this information to achieve a purpose or find possible answers in perplexing situations (Lewis & Smith, 1993, p. 136); • thinking which discerns an indivisible solidarity between the world and the people and admits of no dichotomy between them; thinking which perceives reality as process, as transformation, rather than as a static entity; thinking which does not separate itself from action, but constantly immerses itself in temporality without fear of the risks involved (Freire, 2005, p. 92);

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Philosophy	Psychology	Education
<ul style="list-style-type: none"> • disciplined, self-directed thinking that exemplifies the perfections of thinking appropriate to a particular mode or domain of thought (Paul, 1992, p. 9); • a normative enterprise in which... we apply appropriate criteria and standards to what we or others say (Bailin et al., 1999, p. 285); • the art of analysing and evaluating thinking with a view to improving it (Paul & Elder, 2008, p. 2). 	<ul style="list-style-type: none"> • thinking that is purposeful, reasoned, and goal-directed—the kind of thinking involved in solving problems, formulating inferences, calculating likelihoods, and making decisions, when the thinker is using skills that are thoughtful and effective for the particular context and type of thinking task (Halpern, 2014, p. 8). 	<ul style="list-style-type: none"> • involving students reflecting on their knowledge and simultaneously developing powers of CT; critical self-reflection, and critical action—and thereby developing (as a result) critical being (Davies & Barnett, 2015, p. 15).

The multiplying interpretations and divergent definitions from philosophical, psychological, and educational perspectives suggest a lack of unifying understanding of CT, which may lead to a conceptual confusion among researchers and teachers (e.g., Wright, 2002). Specifically, philosophers highlight the qualities of ideal critical thinkers and focus on the application of formal logical systems; psychologists emphasize how people actually think and delineate the types of behaviours, skills or procedures critical thinkers perform on particular occasions (Lai, 2011; Lewis & Smith, 1993); and the educational perspective on CT is often the mixture of the two above, but it is sometimes too vague to guide instruction and assessment, as its epistemological status is not clear and it has not been tested vigorously (Sternberg, 1986).

Despite their respective focuses on qualities and mental processes, one theme keeps popping up among the various threads in the above definitions: judgment, a term in a broad sense referring to “every outcome of inquiry” (Lipman, 2003, p. 210). Indeed, CT involves judgment of some kind, as indicated by the cognate thinking activity in most definitions, e.g., “deciding what to believe,” “judgment (judging),” “skepticism (being skeptical),” “analysing and evaluating thinking,” “solving problems,” “formulating inferences,” “arriving at a hypothesis or conclusion,” “finding possible answers,” “discern,” etc. Also common to most definitions is a sense that this judgment has some distinctive quality, denoted by the range of qualifying adjectives/nouns associated with the activity, e.g., “rationality,” “reasonable,” “reflective,” “disciplined,” “responsible,” “appropriate to a particular mode,” and so forth. Three key themes arise from the mixed collection of terms. Firstly, the desired kind of judgments are basically rational and fair ones, as indicated by “rationality,” “reasonable,” and “reasoned,” “disciplined,” “responsible” and “normative.” Namely, only thinking which meets certain rational and fair criteria can be viewed as “good judgment” (Lipman, 1988, p. 39) or “perfections of thinking” (Paul, 1992, p. 9). Secondly, these judgments arise from some intentional thinking activity, as denoted by “reflective,” “self-regulatory,” “self-directed,” “self-correcting” and “purposeful.” While much of our thinking unrolls uncritically, it becomes critical only when

thinkers intentionally examine their own thinking with a view to correcting and improving it. In this sense, CT entails a reflective stance on thinking (Moon, 2008) and a constant pursuit of intellectual excellence in the service of both individual and common good. Thirdly, the desired type of judgments needs to be context-sensitive, as indicated by “sensitive to context,” “appropriate to a particular mode or domain of thought,” “within the problem area under consideration,” and “thoughtful and effective for the particular context and type of thinking task.” It can be seen that most definitions above contain elements of the first two themes—CT is rational, fair-minded, and self-regulatory thinking which aims to facilitate good judgment and achieve intellectual excellence. While the third theme—the contextual element—is less consensual (see Section 2.1.3), the dichotomy between generalist and specificist views has been gradually questioned. A growing number of researchers (e.g., Davies, 2006, 2013) have argued for the coexistence of generic CT and discipline-specific discourses or modes of CT.

2.2.2 Components of CT

Apart from the kernel definitions above, some researchers have devoted themselves to identifying constitutive elements involved in the broad CT activity, with a view to “clarifying the concept theoretically” and “establishing a framework for the teaching and assessing of CT” (Moore, 2011a, p. 18). As shown in the existing literature (e.g., Ennis, 1962; Siegel, 1991; Paul & Elder, 2001), CT entails the development and orchestration of three interrelated components: CT skills, CT dispositions, and CT criteria (see Figure 2.1).

Firstly, CT skills encompass a host of cognitive elements involved in argumentation, reasoning, and judgment-making (e.g., Bloom, 1956; Ennis, 2018). For instance, Ennis (1985) proposes the following four general sets of CT skills: basic clarification (e.g., ask and answer clarification questions), bases for a decision (e.g., judge the credibility of a source), inference (e.g., deduce), and advanced clarification (e.g., judge definitions). The Delphi project (Facione, 1990) also offers a list of CT skills, including interpretation, analysis, evaluation, inference, and self-regulation. In contrast, Paul and Elder (2001) identify the

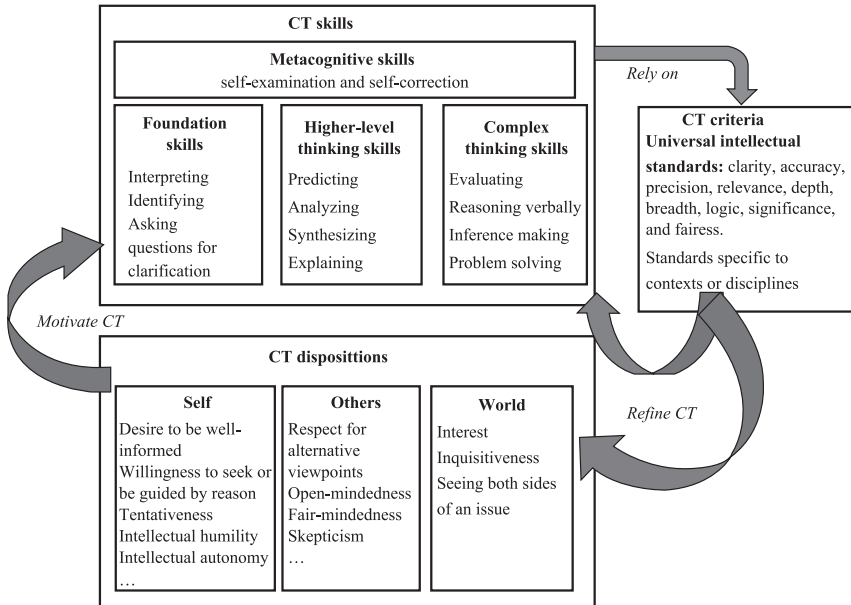


Figure 2.1 Components of CT (e.g., Davies, 2015; Ennis, 2018; Halonen, 1995)

eight elements of thought of reasoning process: purpose, questions at issue, information, interpretation and inference, concepts, assumptions, implications and consequences, and point of view. For them, the process of applying them to particular contexts brings light to a cluster of CT abilities to identify, clarify, analyse, and evaluate these elements. Davies (2015) summarizes the various taxonomies of CT skills and puts them into four categories according to their sophistication level: foundation skills, higher-level thinking skills, complex thinking skills, and metacognition. Foundation skills refer to those requiring the least cognitive resources in the taxonomy of CT skills, including interpreting, identifying, and asking questions for clarification. Higher-level thinking skills demonstrate more sophistication than the foundation ones, including analysing, synthesizing, explaining, and predicting. Complex thinking skills are more sophisticated, including evaluating, reasoning verbally, making inferences, and problem solving. The metacognitive skills involve self-consciously monitoring and refining CT activities and their results, including

self-examination and self-correction on the basis of CT criteria (Facione, 1990; Lipman, 2003).

Secondly, CT dispositions emphasize the affective facet, characterized by a constellation of attitudes, intellectual traits, habits of mind, and character attributes which animate, motivate and modulate CT skills (Davies, 2015; Ennis, 1985; Facione, 1990, 2000; Freire, 2005; Siegel, 1988). Researchers have proposed taxonomies of dispositions germane to CT. For instance, Facione (1990) maintains that good critical thinkers are “habitually disposed to engage in, and to encourage others to engage in, critical judgment” (p. 2), and can be characterized by such dispositions as being inquisitive, well-informed, trustful of reason, open-minded, flexible, fair-minded, honest in personal bias, prudent in making judgments, willing to revise views, diligent in seeking relevant information, reasonable in selecting and applying criteria, and persistent in working with complexities and difficulties. Paul and Elder (2001) likewise propose eight intellectual traits that are highly valued by fair-minded critical thinkers: fair-mindedness, intellectual humility, intellectual courage, intellectual empathy, intellectual integrity, intellectual perseverance, confidence in reason, and intellectual autonomy. After reviewing the extensive compendia of dispositions in the CT scholarship, Davies (2015) sorts out the most common dispositions and puts them into three groups: 1) dispositions in relation to self, including desire to be well-informed, willingness to seek or be guided by reason, tentativeness, tolerance of ambiguity, intellectual autonomy, intellectual humility, intellectual courage, integrity, empathy, perseverance, and holding ethical standards; 2) dispositions in relation to others, including respect for alternative viewpoints, open-mindedness, fair-mindedness, appreciation of individual differences, and scepticism; and 3) dispositions in relation to the world, including interest, inquisitiveness, and seeing both sides of an issue.

Thirdly, CT criteria refer to the intellectual standards that people strive to fulfil and standards which assess the level of thinking quality they have achieved (Bailin et al., 1999; Lipman, 2003; Paul & Elder, 2001). Just as Lipman (2003) suggests, CT “is reliable thinking that both employs criteria and that can be

assessed by appeal to criteria” (p. 212). On the one hand, critical thinkers habitually apply CT criteria to their thinking so as to take a rational command of their cognitive processes, develop CT dispositions, and refine the quality of thinking (Elder & Paul, 2008; Fisher, 2011; Halpern, 1998; Lipman, 1988, 2003). On the other hand, CT criteria are helpful in assessing the quality of thinking, deciding the level of CT, and evaluating the outcome of CT instruction (Bailin et al., 1999; Lipman, 2003; Moon, 2008). Based on their level of generalizability, CT criteria can fall under two categories: universal intellectual standards (or megacriteria) and standards specific to contexts and/or disciplines (Elder & Paul, 2008; Lipman, 2003). Particularly, Elder and Paul (2008) propose nine universal intellectual standards as the evaluation criteria of CT and the goals for learners to attain in all disciplines: clarity, accuracy, precision, relevance, depth, breadth, logic, significance, and fairness. Rooted in daily language, the standards can also be contextualized within different disciplines, such as L2 writing (Dong, 2018; Elder & Paul, 2008).

2.3 How general CT is

As noted earlier in Section 2.2.1, in the pursuit of a definition of CT, researchers have devoted a good deal of attention to its generalizability—whether CT is universal across disciplines or specific to disciplines or somewhere in between (e.g., Ennis, 1985, 1987; McPeck, 1981). This issue is of great theoretical and practical importance, as the stance one adopts affect how CT is taught and assessed (Norris, 1992). This section revisits the generalisability debate on CT and elaborates on the combinatory view on CT.

2.3.1 The generalist versus specifist debate

Protagonists in the extant debate on the generalizability of CT tend to fall into two groups: generalist and specifist.

The generalist view holds that CT is non-discipline-specific and can be taught independently of the disciplines. CT thus can be distilled down to a

universal set of skills, dispositions, and/or criteria, ones that can be taught systematically and applicable across all disciplines or domains (e.g., Ennis, 1985, 1989; Facione, 1990; Lipman, 2003; Siegel, 1991). For instance, a major proponent of the generalist view—Ennis (1985) defines CT as “reasonable reflective thinking that is focused on deciding what to believe or do” (p. 46) and compiles a taxonomy of general CT dispositions and CT abilities, which has greatly contributed to the standard approach to CT instruction in the US and formed the organizing principles for many CT programs (McPeck, 1990; Moore, 2004). Although the generalists later acknowledge that CT (especially CT criteria) may be applied variably to different situations, they insist that there exist a set of generic CT abilities and dispositions across a broad range of contexts and circumstances (Ennis, 1989) and critical thinkers can acquire and rationally, systematically apply them to the situation at hand (Moore, 2011).

In contrast, the specifist view denies any such general ability. Researchers insist that CT is subject-specific and cannot be separated from the context to which it is applied (Atkinson, 1997; McPeck, 1981), as “thinking is always thinking about something” (McPeck, 1981, p. 3).

It is a matter of conceptual truth that thinking is always *thinking about X*, and that X can never be “everything in general” but must always be something in particular... It follows from this that it makes no sense to talk about CT as a distinct subject and that it therefore cannot profitably be taught as such. To the extent that CT is not about a specific subject X, it is both conceptually and practically empty. The statement “I teach CT”, *simpliciter*, is vacuous because there is no generalized skill properly called CT.

(McPeck, 1981, pp. 4-5)

It implies that generic CT detached from subject areas cannot conceptually exist and dismisses the possibility of a set of universal CT skills (but he does not extend the subject-specificity to the dispositional dimension). It thus would be futile to develop stand-alone courses to enhance students’ generic CT abilities.

Instead, CT can only be best developed through prolonged immersion in the study of specific subject areas (McPeck, 1981, 1990). Similarly emphasizing the “internal logic” (McPeck, 1981, p. 32) of each discipline, Moore (2004, 2011a, 2011b, 2013) compares academics’ ideas about CT in different disciplines (e.g., philosophy and cultural studies) and concludes that CT is not a “broad universal generic skill” (2004, p. 3), but “a multiplicity of practices... rooted in the quite individual nature of different disciplinary language (and thinking) games” (2011b, p. 271). While the specifist view helps to encompass a variety of disciplinary modes of CT, its emphasis on subject-specific differences may reduce the clarity of CT ideas and hinder students from transferring CT from one context to another (Davies, 2006).

The generalizability debate has prompted substantial reflection on the extent to which CT is generalizable or subject-specific. Instead of adhering to the dichotomy of generalist versus specifist views, recent literature has pointed to a combinatory, integrated view on CT (e.g., Bailin & Siegel, 2003; Ennis, 2018), which will be discussed in the ensuing section.

2.3.2 A combinatory, integrated view on CT

Although the generalizability debate continues, researchers have realized that the traditional either-or dilemma of CT is “a fallacy of false alternatives” (Davies, 2006, p. 180) and opted for the combinatory, integrated view on CT.

The third and often overlooked view is that CT is a combination of using a set of general disposition and abilities, along with specific experience and knowledge within a particular area of concern—in school, often the subject-matter area.

(Kennedy, Fisher, & Ennis, 1991, pp. 15-16)

The combinatory view has highlighted the compatibility and interdependence between generic CT and the subject-matter features, which has been supported by an increasing number of researchers (e.g., Bailin & Siegel, 2003; Dong, 2018; Jones, 2015; Ten Dam & Volman, 2004; Thonney &

Montgomery, 2019). It sees the generalist and specificist views of CT as complementary contributors to a complete understanding of CT. As observed by Ikuenobe (2001), the context-free, general principles of logic and CT are “necessary... but not sufficient” (p. 20), and the context-dependent, specificist view is “unsatisfactory, because it is necessary to have an objective set of rational standards that can be rationally agreed on to unpack the notion” (p. 24). Combining these two views on the one hand helps to “[outline] the principles of good reasoning *simpliciter*” and “assess reasoning independently of the vagaries of the linguistic discourse we express arguments in” (Davies, 2006, p. 179), and on the other hand depicts how the general principles are used and deployed in the service of disciplines (Davies, 2006). In this sense, researchers not only need to treat the generic CT as fundamental at certain levels (Davies, 2013, p. 534), but they also should “systematically [acknowledge] the essential role of subject-specific content knowledge in any educationally adequate effort to foster students’ CT” (Bailin & Siegel, 2003, p.184). For instance, the terms “CT in Zhongwen” and “CT in English” (Lu & Singh, 2017), though denoting varieties of CT, only designates general CT abilities and dispositions “practiced in reference to forms of problem-posing and questioning available in the multiple languages present” and CT “expressed in these two particular languages and no more” (Singh, 2018, p. 65).

It is based on this trend that a combinatory, integrated view of generalist and specificist positions on CT is adopted to conceptualize CT in this study. Accepting this view, however, opens up the challenge of understanding how generic CT might be conceptualized in relation to particular subject-matter content. As observed by Davies (2013, p. 535), “exactly where the generic, universal form of CT and the... discipline-specific instances of CT discourse meet and diverge is open for conjecture.” It is thus important to take one specific discipline (i.e., EFL writing in particular in this study) as an example to resolve the impasse and develop a more comprehensive understanding of CT in relation to the disciplinary epistemology and context (Jones, 2009, 2015; Thonney & Montgomery, 2019).

2.4 In search of CT: A working definition

The discussions on the definitions and generalizability questions above indicate that CT is a judgment-related, context-sensitive, multi-dimensional construct, consisting of a range of (meta)cognitive skills, dispositions, and criteria. After comparing the various definitions in the existing literature, this study adopts a combinatory, integrated view on CT to include generic CT (see Section 2.1.2) and the specific features of a particular discipline in the conception of CT (e.g., Bailin et al., 1999; Davies, 2013; Paul, 1992). CT in this study is construed as *rational, fair-minded, and self-regulatory thinking which facilitates sound judgment and aims to achieve the standards of intellectual excellence appropriate to a particular discipline*. A good critical thinker is supposed to actively and skilfully apply/develop CT skills (e.g., analysis and evaluation), dispositions (e.g., open-mindedness and intellectual autonomy), universal intellectual standards (e.g., clarity and accuracy), and discipline-specific standards to make rational and fair judgment and achieve intellectual excellence in the particular domain of thought.