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Conceptualizing Critical Thinking Skills in Content-Based Language Teaching

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This paper argues that content-based language teaching (CBLT) facilitates the cultivation of L2 learners' critical thinking (CT) ability as contextualized language use involves meaning-making choices and decisions for communicative purposes. Synthesizing the generalist and specifist views on critical thinking, the paper conceptualizes a model of critical thinking skills by integrating language- and content-related components.

Keywords: critical thinking skills, content-based language teaching, generalist, speficist

Introduction

Critical thinking (CT) has become a catchphrase in our era. It's highly valued in this increasingly complex world. Specifically, we have seen this term become an indispensable part of higher education discourses (Moore, 2011). Universities are trying to cultivate critical thinkers by providing CT courses or embedding CT within disciplinary courses. Though CT had traditionally been confined to L1 settings in the West, it began to attract the attention of L2 researchers and educators in the 1990s. For example, Chinese English-major students were found to be lacking in critical thinking (Huang, 1998), and scholars made attempts to identify causes through empirical research or argumentative reasoning. The causes were said to lie in the foreign language curricula which overemphasized language skills and neglected systematic knowledge in the discipline (Wen, 2012). There were calls for reform on skill-based courses by making them content-based to better address CT. Content-based language teaching (CBLT) has been carried out first in North America and then widely in the world following the shift to communicative language teaching in TESOL. However, CBLT has been mainly studied for its effect on language acquisition. Few studies focused on CBLT's impact on students' CT ability, as CT research in L2 instruction often followed the cognitive-psychological tradition of focusing on general CT ability. Now that more and more researchers recognize the importance of domain-specific CT, CBLT can be well designed to facilitate the cultivation of CT in both language use and discourse learning. This paper argues for CBLT as an approach to cultivate L2 learners' CT ability, and conceptualizes CT skills in CBLT with the aim of enhancing L2 instruction and enabling language learners.

Definitional Issues of Critical Thinking

There have been debates on the definition and nature of critical thinking. Paul (1990) defines it as "disciplined thinking which exemplifies the perfections of thinking appropriate to a particular mode or domain

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of thinking" (p. 33). For Ennis (1992), it is "reasonable, reflective thinking that is focused on deciding what to believe or do" (p. 22). These definitions are representative of the generalist view on CT, and can be distilled down to a set of thinking skills that can be applied across all disciplines. In this line, CT is found to be interchangeable with such terms as metacognition, higher order thinking, problem solving, rationality and reasoning (Atkinson, 1997). On the other hand, some researchers adopt a specifist perspective, which means they associate CT with specific disciplines. For example, McPeck (1992) defines CT as the appropriate use of reflective skepticism within the problem area under consideration, and he closely relates the problem areas to particular subject matter domains. For specifists, CT is always contextual and intimately tied to particular subject matter with which one is concerned (Moore, 2011). Recently, it seems that the dichotomy has shifted towards a synthesis of the two views. First, there are CT skills that are applicable across a wide variety of domains. Second, the ability to think critically on a particular task depends on task knowledge and related CT skills (Tiruneh et al., 2016). Therefore, CT instruction needs to cover both domain-general CT skills and domain-specific CT skills.

Apart from the debates between generalists and specifists, CT is sometimes associated with Marxian concept of critical consciousness, which emphasizes the concentration of critical faculties on social and political inequalities. Terms such as "critical pedagogy" and "critical literacy" are in line with this concept. The idea of critical consciousness in social theory has also had significant impact on the development of one area in linguistics—critical discourse analysis (CDA). CDA provides a new perspective for the study of the relationship between language and society by illuminating the relations between discourse, dominance, marginalization, social inequality, ideology, and hegemony (Hashemi & Ghanizadeh, 2012).

The above discussion shows that CT has been defined and interpreted from various perspectives. For L2 education to incorporate the aim of cultivating CT, features of the subject domain need to be considered and teaching objectives and measures that are specific to CT of L2 learners need to be constructed.

Critical Thinking and L2 Education

In L2 education, CT is an important concept due to the special relation between language and thinking. On the one hand, language is the medium of thinking. According to linguistic theories ensuing the behaviorist account of language acquisition, L2 learning relies much on the cognitive resources of the learners, and in the meantime, trains and reinforces their cognitive ability. On the other hand, language affords means of communication, which supposedly is the primary purpose of learning a second language. Communication is also a cognitive activity, as it involves meaning making where learners engage in all sorts of thinking activities, such as determining the purpose of communication, judging the intention of the writers/speakers, choosing expressions from their own repertoire, predicting the direction of communication, etc. Apparently, language and thinking are inherently interdependent. Language use is a conscious process where people make use of their linguistic and cultural resources to realize the purpose of communication. While L1 users will not have much difficulty doing that, L2 users may face more challenges as these resources are not usually at their disposal. Therefore, thinking, especially higher-order thinking becomes particularly important in L2 learning to the extent that learning will not be effective without thinking.

The emphasis of CT in education coincidentally followed the paradigm shift in language teaching approach. As applied linguistics shifted its focus from linguistic competence to communicative competence,

foreign language teaching embraced communicative language teaching (CLT) approach which has its main linguistic basis in functionalism. Different from teaching approaches derived from structuralism, CLT does not see language learning as merely mastering structures but emphasizes the fundamental dimension of language—the functional and communicative potential of language (Richards & Rodgers, 2008). Different teaching methods under the paradigm of CLT have been developed to realize the potential, of which content-based language teaching (CBLT) may have most often been associated with CT in language education. Content-based instruction promotes natural language learning and higher-order thinking skills (Met, 1991), and is considered by many as an effective way to teach language skills while supporting the development of CT (Liaw, 2007). By teaching content of subject matters in the target language, CBLT stimulates students to think and learn through the use of the language. Higher-order thinking skills can be more effectively taught in CBLT than in traditional language-centered instruction. By integrating language with subject matter in instruction, CBLT trains students in language and thinking skills that will enable them to engage in academic and social interactions, and equip them with the ability to participate in the globalized world.

Critical Thinking Skills in Content-Based Language Teaching

In CBLT, the teaching of language is intertwined with the teaching of subject matter. Though CBLT takes various forms, ranging from content-driven to language driven, based on different teaching objectives, it's generally agreed that both language and content knowledge need to be addressed in the instruction (Lyster & Ballinger, 2011). CBLT creates opportunities for the cultivation of students' CT skills. The question remains what CT skills should be targeted in the instruction.

The earlier discussion on the definitional issues demonstrates a distinction between generalist and specifist views on CT. As neither side can make a full account of CT, it's more sensible to adopt a synthetic view and probe into how various CT skills can be developed through instruction. While general CT skills were usually taught separately from regular subject matter domains, recent attempts have shifted mainly towards embedding CT skills within subject matter domains to develop both domain-general and domain-specific CT (Tiruneh et al., 2016).

There are a few empirical studies that probed into the effects of CBLT on cultivating CT (Liaw, 2007; Yang & Zhao, 2011; Yi, 2020). In the studies, the researchers or the participants reported positive effects, such as enhancement of analytical, inferential, and evaluative skills, demonstrated by writing tasks or student interviews. However, in cases where assessments of general CT were used, the improvements in CT skills were usually not significant. One explanation might be that the relatively short period of intervention failed to bring about significant changes. Moreover, the applicability of domain-general CT assessment tests for subject matter courses was questionable. There are some attempts to develop domain-specific CT tests in science domain such as physics, biology, although the assessment of CT has mainly focused on domain-general CT skills (Tiruneh et al., 2016). The CT skills measured by such assessment are less likely to show improvement by subject matter instruction over a short period. Therefore, in subject matter courses, the primary objective should be directed toward cultivating domain-specific CT, which under certain conditions may contribute to general CT.

As CBLT fuses language with content knowledge, language is always used for specific purposes and in specific contexts. Language and content are interdependent and accordingly the focus of teaching needs to be on the interface between them, so that students are equipped with not only language knowledge that will help

them determine meaning of the content, but also content knowledge that will help them understand the various functions of language. To meet such an objective, CBLT can make adequate use of systemic functional linguistics, which treats language as a system of choices for meaning-making (Halliday & Matthiessen 1999). When language choices are involved, critical thinking is indispensable and it relies on knowledge of language for specific purposes rather than every-day language, so the relevant CT skills are domain-specific.

For McPeck, critical thinking components are "field dependent" (in Stephen Toulmin's term). Language is also field-dependent. General CT education is not enough to help students think critically in their specific discipline, just as general language education offers limited help to learners who want to communicate effectively in specific fields. To think critically in a discipline requires relevant knowledge and experience so that one can have the right warrants for his arguments. To communicate effectively in a field involves knowing the language of the specific field. Cummins (1981) distinguished two different kinds of language skills, basic interpersonal communication skills (BICS) and cognitive academic language proficiency (CALP), and the latter has become the primary objective in ESL teaching. This objective can be better realized through CBLT, as one of the purposes of CBLT is to develop students' academic language skills. As has been discussed above, the improvement of academic language skills is connected with the learning of content knowledge and the cultivation of CT skills.

There have been investigations on CT skills since the concept of CT was put forward. The identification and categorization of the skills are pivotal for instructions that aim to cultivate CT ability. From the generalist perspective, several models have been proposed to account for the cognitive skills involved in CT. The Delphi Report (Fancione, 1990) identified six cognitive skills including interpretation, analysis, evaluation, inference, evaluation, and self-regulation. Halpern (2010) identified five components of CT skill, namely, reasoning, thinking as hypothesis testing, argument analysis, likelihood and uncertainty analysis, problem-solving and decision making. Some researchers adopt Bloom's taxonomy of educational objectives in foreign language teaching with a purpose of cultivating CT (Yi, 2020). The taxonomy consists of three low-level thinking skills (knowledge, comprehension, application) and three high-level thinking skills (analysis, synthesis, evaluation) (Bloom, 1956). The high-level thinking skills are often regarded as synonymous with CT skills. Another influential CT framework in China was proposed by Wen (2012) with a dimension of cognitive skills of analysis, inference, and evaluation, and these skills overlap with those of the aforementioned models.

Thinking critically and communicating effectively should go hand in hand in foreign language education. Few studies except those on writing and public speaking include both dimensions in instruction and assessment. However, even in those cases, the two dimensions are usually treated independently. It's high time that foreign language education integrated the two dimensions as a more coherent whole. Actually, language use and critical thinking are inherently related, as "critical thinking is purposeful, reasoned and goal-directed" (Halpern, 1999, p. 70), and linguistic function refers to "the purposes to which the grammatical knowledge of the speaker is put in social interactions, mostly communication of information but also other purposes" (Croft, 1995, p. 493).

In CBLT, relevant skills and subskills of CT need to be identified for objectives of language-related thinking ability and content-related thinking ability. This paper proposes a dual-objective CT model for CBLT. The model is based on the three broad cognitive skills in Wen's CT framework, which has been validated empirically. The CT skills that CBLT needs to focus on are suggested in the following table.

Table 1

Critical Thinking Skills in CBLT

Critical thinking skills	Content-related subskills	Language-related subskills
Analysis	Identify key concepts and arguments Look for connections among ideas to form a systematic understanding of the content area	Paraphrase key concepts and arguments Identify generic features and rhetoric features
Inference	Organize parts of the content knowledge into a coherent whole Infer the logic of assumptions and claims Infer the conclusions and predictions	Infer the writing focus with the support of language signposts Infer the author's attitude indicated by language use, such as mood and modality Infer underlying meanings and implications through discourse analysis
Evaluation	Judge the credibility of an information source Assess the logic of reasoning	Critique the discourse Evaluate the writing techniques

From the table, we can see the three CT skills are cognitive skills that have been identified in a number of CT models. The content-related subskills mostly cover the elements of logical thinking in information processing, while the language-related subskills center on critical literacy that stresses awareness of language functions. These subskills can be furthered narrowed down to more specific skills depending on the subject matter integrated in L2 teaching.

Conclusion

This paper maintains the necessity of cultivating L2 learners' critical thinking ability, which can be realized through content-based language teaching. Given that CBLT has been carried out in various forms across different contexts and CT has gained increasing attention in L2 education, there are not enough studies that have explored how CBLT may impact CT and what constitutes CT in CBLT. The paper first reviews the generalist-specifist debates on CT among researchers and educators, then discusses how L2 education can incorporate CT as an educational objective, and finally proposes a model of CT skills in CBLT. The model synthesizes generic CT skills and specific CT skills, the former representing abstract concepts of thought and the latter being instantiations in the particular subject matter domains. In the case of CBLT, the specific CT skills should cover both the language- and content-related components. The model is expected to enlighten foreign language teachers in their endeavor to develop CT skills of L2 learners. It should be noted that the model focuses on cognitive skills only, and does not cover metacognitive skills and dispositions which are considered essential for critical thinkers.

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