Teaching Practice

A Content-Based Model for Developing Critical Thinking and Language Skills in EAP

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As the number of English for academic purposes (EAP) programs in East and Southeast Asia has increased, so too has discussion about the importance of critical thinking (CT) skills for students enrolled on these courses. To become critical thinkers, students require sustained thematic input in addition to explanation and demonstration of relevant skills, thereby making content-based instruction an ideal approach to prepare students for both the linguistic and cognitive demands of English-medium higher education. Based on this principle and a specific framework of CT skills, the instructional model described here was delivered to 46 students enrolled on a pre-master's program. Results of a post-term questionnaire revealed that students responded positively to the curriculum and thought that it facilitated improvement of their English and CT skills and prepared them for future academic study. Implications for practitioners currently teaching or considering teaching a content-based or CT-focused EAP course are also discussed.

Global education trends are bringing about a shift in the English for academic purposes (EAP) profession away from its traditional centers in the USA, the UK, and Australia, and towards newly developing ones, such as those in East and Southeast Asia (Knight, 2014). Meanwhile, the topic of critical thinking (CT) has become increasingly prominent in the workshops and papers presented at regional TESOL conferences, a trend that comes as no surprise given that CT is viewed by university faculty as a key requirement for academic success (Mandernach, 2006). But despite being the focus of curriculum reform initiatives in many countries throughout the region (Mok, 2009; Shaila & Trudell, 2010), evidence suggests that Asian classrooms are still characterized by teaching styles not conducive to CT development (Mok, 2009) and learning strategies reliant on rote memorization and formulaic writing (Meyer, 2012; Punyaratabandhu, Rush, Kleindl, & Wadden, 2013). In fact, few students report having ever received CT instruction (Yang & Gamble, 2013), and it therefore seems that lack of opportunity bears at least partial responsibility for stereotypes about Asian students' poor CT skills (Melles, 2009). Culturally biased as they may be (Kumaravadivelu, 2003), these opinions can and do negatively influence instruction as teachers may avoid pushing students beyond their mechanical comfort zone towards more cognitively engaging tasks. The result is that even though they *want* to build CT skills (Cai, 2013), many EAP students rarely have the opportunity to do so.

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This is important because with the profession's gravitation towards non-native English-speaking (NNES) areas will come a corresponding shift in the responsibility for EAP teacher training and program management (Knight, 2014), resulting in an increase in the already large number of NNES EAP teachers (Hamp-Lyons, 2011). These teachers certainly have their own unique advantages, but in many cases they may have a lack of familiarity with classroom-based CT activities as well. The purpose of this paper is to address this dilemma by putting forward a content-based EAP module. This module is based on a concrete conceptualization of CT skills and sustained thematic input, without which students cannot achieve the results they desire and require in both language development and CT ability.

The Role of Meaningful Input

Hamp-Lyons (2011) argues that many general English teachers are underqualified or undertrained to teach EAP, resulting in ad hoc approaches to curriculum planning and materials development. If input materials are presented without adequate context or are unrelated from class to class, even when presented with ostensibly CT-related activities, students will lack sufficient background information for thinking deeply about academic topics. Absent this knowledge base, students are being asked to do something they are not equipped to do.

In contrast, content-based instruction, which relies on authentic input materials, provides the stimulus necessary for students to produce critical output while simultaneously improving their language skills. This claim is based on the belief that learners' reliance on knowledge gained via authentic, contextualized input just beyond their current proficiency level facilitates language acquisition (Krashen, 1985). When presented in a consistent and thematic way, such materials can also allow EAP students to develop the schemata necessary for critical discussion or writing on given topics (Pally, 1997). Furthermore, students in content-based classrooms have demonstrated increased overall language ability (Burger & Chrétien, 2001; Valeo, 2013), acquisition of disciplinary content on par with or even better than non-ESL students (Winter, 2004), and positive affective responses (Song, 2006).

Conceptualizing Critical Thinking

Providing input well suited to both linguistic and CT development is only part of the process. Teachers and students also need a clear conceptualization of this otherwise abstract construct. Given that one-sentence descriptions of CT like those found in the literature are not very helpful to teachers or students, the framework adopted for this project was a set of cognitive skills with various associated sub-skills originating from the American Philosophical Association's Delphi Project (Facione, 1990; see Figure 1). This framework provides a foundation for designing instructional activities and allows teachers to explicitly model the skills they want their students to learn, thus leading to more efficient CT development (Reed, 1998). In the curriculum that follows, a three-stage model consisting of content-based input, critical-processing tutorials, and alternative assessment tasks placed an emphasis on the Delphi Project's skills at each stage.

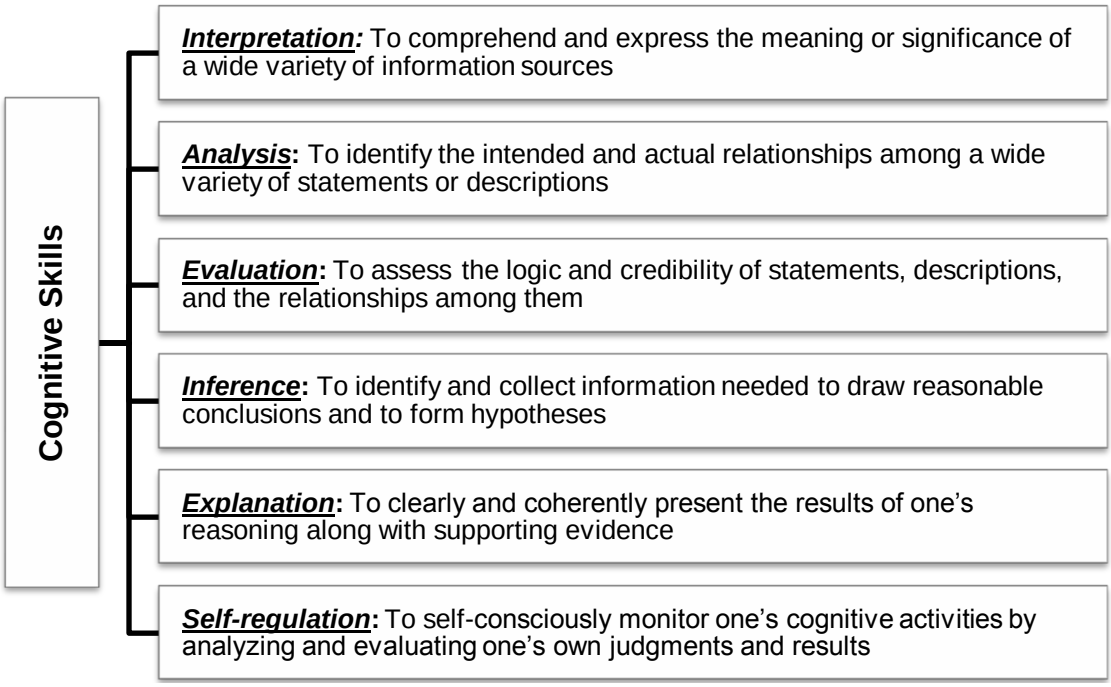

Figure 1. The Delphi Project's core CT skills (adapted from Facione, 1990).

Curriculum Design

Course Overview

The course was delivered to 46 students enrolled on a pre-master's program at a Project 211 university in Chengdu, China. The approximately 100 project-member universities are government-designated research institutions widely considered to be China's most elite. The 30-week program provides intensive EAP and research methods instruction designed to prepare students for graduate-level studies at cooperating UK-partner universities. Most participants were fourth-year university students who came from a variety of majors and had a mean IELTS or IELTS-equivalency score of 5.3. Based on the UK partners' syllabus guidelines, the module described below for three sections consisting of 15-16 students each consisted of 6 instructional hours per week: 3 lecture hours and 3 tutorial hours.

Instructional Model

Figure 2 illustrates the content-based input model adopted in this course. Instructional materials took the form of a university-level textbook, short case studies, and academic lectures from the Internet (i.e., from www.ted.com) and from the course instructor himself. The second stage, critical processing, occurred during content-based tutorials designed to facilitate meaningful discussion, analysis, and application of the reading and lecture materials. The sum of these parts was meaningful output, which came in the form of alternative assessment assignments requiring students to synthesize their own ideas with those from the various input sources.

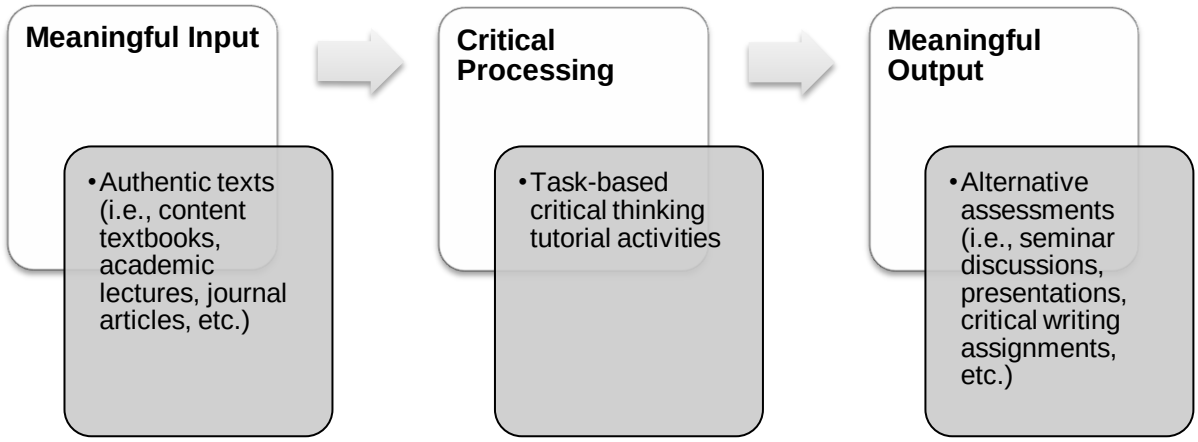

Figure 2. A content-based input model for EAP instruction.

Course Contents

The theme was an introduction to organizational behavior (OB). OB is a good choice for content-based instruction courses because it offers a combination of topics from several different social science disciplines (i.e., psychology, sociology, political science, and economics), many of which students and teachers alike may have encountered in their previous studies. Despite not all students intending to study in management- or business-related post-graduate programs—though many were—organizational behavior was suitable given that most will in fact work in organizations throughout their careers.

The primary textbook was *Essentials of Organizational Behavior* (11th Edition) (Robbins & Judge, 2012). Analysis of sample passages revealed Flesch-Kincaid Reading Ease scores between 42.2 and 48.4, indicating a grade level between 11 and 12. While many students found this text quite demanding, it is intended for a diverse international audience and its style and content are typical of the texts required on many UK undergraduate courses.

The Delphi Project's CT skills framework was explicitly taught during Week 1 to establish a point of reference for all subsequent integrated activities. This was also intended to raise students' awareness of the ubiquity of CT and to aid in their future transfer of learning to content areas beyond the focus of the course (Reed, 1998). The course sequence then progressed through three units, each covering a range of OB topics related to individuals (Weeks 1-4), groups (Weeks 6-8), and organizations (Weeks 9-10). Academic journal articles were covered during Week 5 in conjunction with a literature review assignment.

Integrating Critical Thinking Skills Into the Instructional Model

At each point in the course, specific Delphi Project skills were described, demonstrated, and practiced (see Figure 3). In the meaningful input stage, focus was given to, among other things, the development of students' interpretation abilities. They were taught to distinguish main ideas and identify authors' and speakers' purposes. Analysis activities at this stage included sketching relationships between sentences and paragraphs, and skills of inference and self-regulation were also crucial as students were taught to construct meaning from the various parts of the readings and lectures and to monitor their own comprehension.

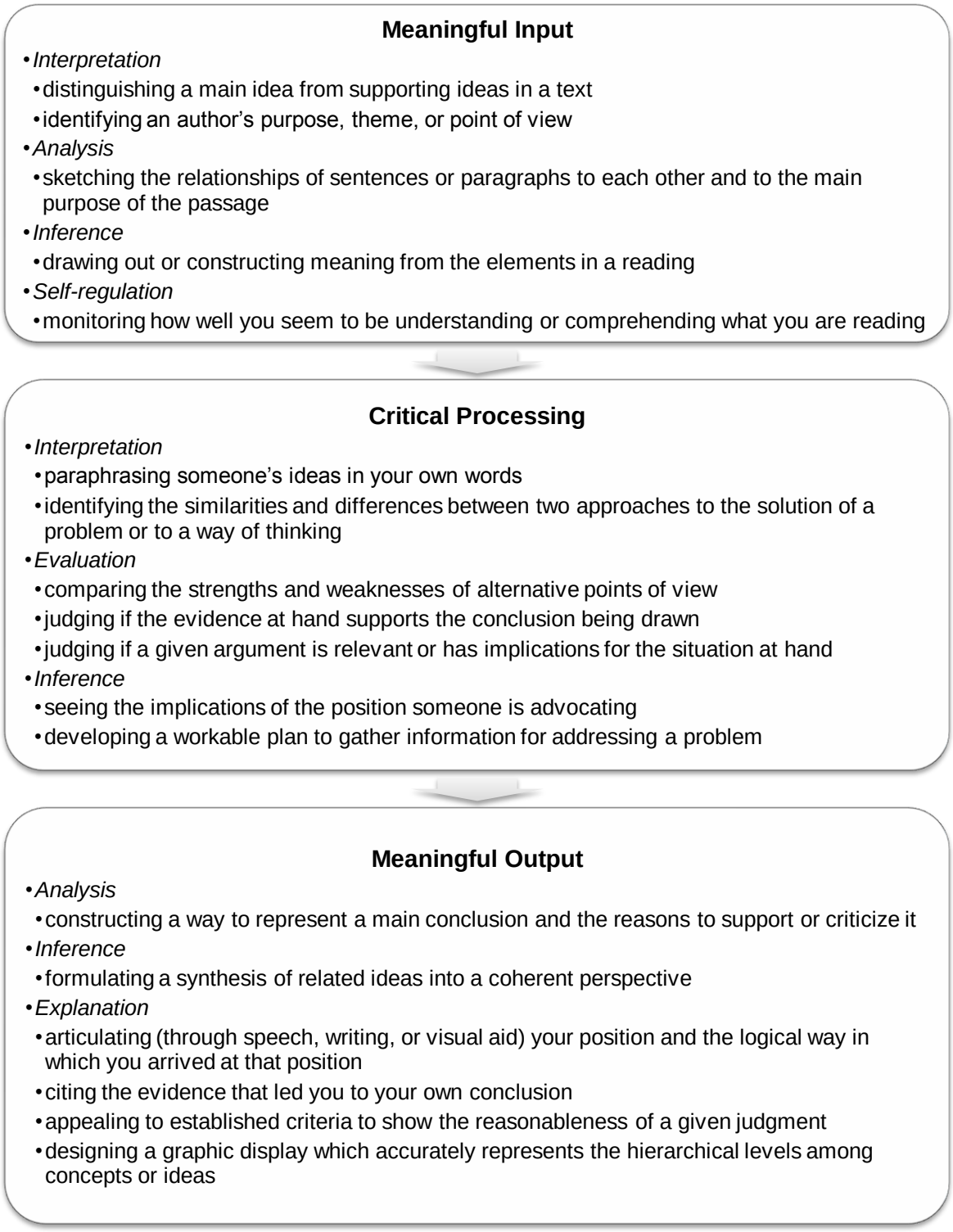

Figure 3. Integrating the Delphi Project's core CT skills into a content-based input model (adapted from Facione, 1990).

Because discipline-specific EAP activities provide a suitable setting for encouraging and developing students' CT competencies (Melles, 2009), the content-based tutorials formed the basis of the critical-processing stage. The activities required students to integrate a variety of reading, writing, speaking, and listening skills and were varied week by week in order to bring into play a wide range of cognitive abilities (see Figure 4). Equipped with thematic input from the lectures and reading materials, the students were able to engage in CT tasks with specific emphasis placed on interpretation, evaluation, and inference along with sub-skills associated with each of these.

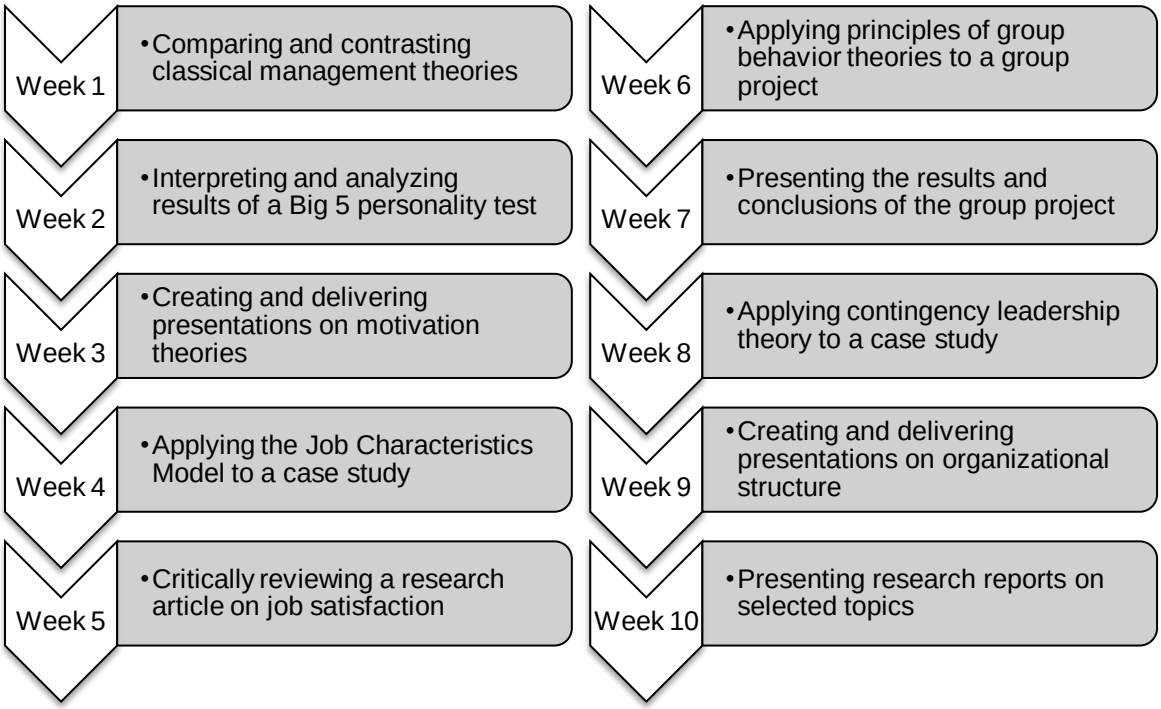

Figure 4. Tutorial activities.

The course's assessment structure was integrated into the instructional model too. Alternative assessment assignments provided opportunities for practicing the types of academic output that will prepare students for advanced studies in an English-language medium. Specifically, they completed a written review of academic literature related to selected OB topics; an intensive reading of an authentic textbook chapter; a listening assignment requiring pre-lecture reading and vocabulary preparation, along with a written summary and critical appraisal of the lecture's contents; and two speaking tasks: a group seminar presentation and an individual presentation.

Post-Course Questionnaire

A post-course questionnaire, adapted from Yang and Gamble (2013) (see Appendix) and consisting of 15 Likert-scale questions, a ranking question, and three open-ended questions, was administered to gather feedback about the curriculum. The resulting data were analyzed for emergent themes in order to establish a detailed description of students' reactions.

Discussion

Studying with Content-Based Instruction

Quantitative analysis showed that a majority of students felt the course had contributed to their overall English improvement, with reading and writing skills enjoying the most positive reactions; 82% of respondents agreed that both had improved. Many of the open-ended comments related to reading in particular. Though the authentic texts were difficult at first, with time, many students, such as the one quoted here, found them more manageable and developed strategies for dealing with new vocabulary: "After three months, things have improved. I can identify the most important words and focus on reading quickly." This is an important observation given that in their future studies these students are likely to face English-language reading assignments larger than any they have ever encountered.

Another category of comments recognized content-based instruction's potential for developing CT skills. One typical response made note of the thematic approach that characterizes this model: "When every activity is a new topic, it's difficult for us to think deeply. But if the content of the material is familiar with [*sic*] us, we will have capacity to critically analyze the text." The rationale for thematic sequencing was similarly supported by the quantitative data that showed a large number of students (82%) agreed that their CT skills had improved.

Students were also asked about what aspects of content-based instruction they found challenging. Some wrote that they struggled to "memorize" or "remember" the content:

> How to quickly remember the content is the biggest challenge for me. If I cannot remember it before class, other activities will be hard to proceed [*sic*], and I can't repeat it and express my ideas in my own words.

While teachers could ideally shift students' attention away from "memorizing" and towards "acquiring," it is also necessary to monitor the amount of content being presented. Striking a balance between providing sufficient meaningful input and overloading students with texts perceived as too demanding is an important consideration in planning a content-based course.

Nonetheless, such sentiments were the exception rather than the norm. Many suggested that the organizational behavior content was "interesting," "motivating," "useful," and even "fun." Analysis of Likert-scale questions reinforced this view and showed that while a large group (80%) thought the content was more difficult than that of previous English courses, an even larger number (84%) found it more interesting too, revealing that most students appreciated the challenge presented by authentic input and recognized its pedagogical benefits as well.

Participating in Tutorial Activities

Students were also asked about their opinions of the tutorial activities. The quantitative data indicated that the case study activities were seen as most beneficial to CT development by the largest percentage of students (37%), as the following comment reflects: "During the case studies, we used some theories we have learnt to analyze the cases. This not only needs us to understand the theories, but also requires us to apply them." In addition to application, problem solving and source integration were also considered important:

> In the case study, we learn to use theories we've studied to analyze related articles and solve problems. Linking information needs us to learn how to integrate all the information and lead [*sic*] us to a higher level of thinking.

Absent the background knowledge acquired from the content-based input, students would have been ill prepared to fully engage in these tasks.

Similarly notable were the general benefits obtained from the cumulative effect of 10 weeks of tutorials. Chief among these were students' beliefs that this mode of instruction would pay dividends when they went abroad to study on post-graduate courses:

> The tutorial activities inspire us to think about what we've studied and coming [*sic*] up with our own opinions. . . . Analyzing critically helps us look at problems more comprehensively, deeply, and objectively, which is important for graduate students' study.

Students also found themselves adapting to western university teaching methods:

> In tutorials, I should present my ideas to other members and discuss all the opinions with them. It is an excellent method to practice speaking and critical thinking skills. It also can help me fit [*sic*] to foreign teaching methods.

In the context of these comments, it is worth noting that only a small minority of students agreed that CT was more suitable for western students (18%). Similar to the results presented in the previous section, these findings indicate that students embraced thinking critically and found themselves improving their ability to do so, thus providing more evidence to refute previously held stereotypes about Asian students.

Implications for Teachers

Based on the analysis of student feedback along with the instructor's own reflections, three implications for practitioners can be put forward. First, teachers should select a suitable amount of authentic material that leads itself to critical processing rather than memorization. When the amount of material is too great or complex, a point of diminishing returns is reached, and students are consequently unable to take part in CT activities. However, since the theoretical foundations supporting content-based instruction state that students benefit from authentic and thematic input (Pally, 1997), this does not mean that materials should be overly modified in a way that diminishes their authenticity and thereby negates their positive benefits. Rather, when appropriate, teachers should preview key vocabulary and design activities aimed at helping students develop the reading skills necessary to (a) interpret meaning from context and (b) discern when it is and is not necessary to look up unknown words in a dictionary. An Internet-based readability index (e.g., www.readability-score.com) can also help teachers ensure that the meaningful input materials they have chosen will not be more than *just* above their students' current proficiency levels.

When designing CT tasks, teachers should also keep in mind the specific skills they want their students to develop. The Delphi Project's framework breaks down a variety of skills into specific examples and is therefore conducive to application, but it is by no means the only suitable choice. For example, Richard Paul's model for CT (Foundation for Critical Thinking, 1996, as cited in Reed, 1998) places emphasis on elements of reasoning and may also be suitable for EAP settings. Whichever framework teachers choose to use, they should begin with explicit instruction on the framework itself, train students to use the framework, conduct classroom activities based on the concepts included in the framework, and give students assignments requiring them to put to use the skills that have been modeled and practiced in class (Reed, 1998). This process of building students' own awareness of CT is crucial if they are

to be expected to transfer the skills they have learned in EAP classrooms to the English-language contexts that will be encountered in their further studies.

Finally, teachers need to be aware of some students' concerns that content-based activities do not provide enough of the direct language instruction they are accustomed to and therefore regard as necessary (Melles, 2009). One way of addressing these concerns is by integrating focus-on-form (FonF) activities into content-based lessons. FonF instruction is based on the premise that for second language acquisition (SLA) to occur in formal instructional settings, learners' attention should be drawn to linguistic features as they are naturally demanded by the communicative context (Doughty & Williams, 1998). Examples of suitable FonF methods include slightly and purposefully modifying authentic input materials to highlight a specific form and the meaning attached to it, designing noticing activities requiring learners to identify a given form and its associated meaning, and providing corrective feedback aimed not only on students' language output but at their content output as well (Valeo, 2013). In contrast to instruction which focuses *only* on language forms, FonF pedagogy regards form and meaning as inseparable and provides students the attention to accuracy they desire in addition to authentic content-based input.

Conclusion

Anticipating future opportunities and challenges in the EAP field, the purpose of this project was to present a rationale for a content-based EAP course with a focus on the development of specific CT skills. A plan for implementing such a course and students' affective reactions to it were also provided. While the project did not attempt to measure students' linguistic or CT development in an objective way, previous SLA research has provided evidence of content-based instruction's capacity to build students' linguistic skills; future practitioners may look to a number of existing instruments designed to measure CT ability (for details see Reed, 1998). Practically speaking, however, the best measurement of EAP students' CT ability and of their preparedness for higher-level education is the quality of their work on assignments similar to those they will meet during university studies. Providing a program of authentic and sustained thematic input will offer students the topical knowledge necessary to meaningfully complete such tasks and the opportunity for them to improve their linguistic ability at the same time.

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A previous paper about this curriculum project was presented at the 10th Annual CamTESOL Conference in Phnom Penh, Cambodia, February 22, 2014, under the title "Learning critical thinking and academic discourse via content-based instruction: Students' reactions and reflections."

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Appendix
Post-Term Questionnaire
(Adapted from Yang & Gamble, 2013)

This questionnaire has two purposes: 1) to help your teacher better plan this course for next term and for next year, and 2) to provide useful data for a research project about content-based instruction and critical thinking. Please answer the questions openly and honestly. Your responses will not affect your grades. Please answer these questions based only on this organizational behavior course.

	Questions	Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
English skills						
1	My English **reading** skills have improved in this course.	5	4	3	2	1
2	My English **writing** skills have improved in this course.	5	4	3	2	1
3	My English **listening** skills have improved in this course.	5	4	3	2	1
4	My English **speaking** skills have improved in this course.	5	4	3	2	1
5	I am more confident about using my English in an academic setting now.	5	4	3	2	1
Critical thinking						
6	My critical thinking has improved in this course.	5	4	3	2	1
7	I better understand what critical thinking is now.	5	4	3	2	1
8	I am more confident in my ability to use theories and evidence to support my ideas.	5	4	3	2	1
9	Critical thinking skills will help me in my master's degree studies.	5	4	3	2	1
10	Critical thinking is more suitable for western students than for Chinese students.	5	4	3	2	1
Satisfaction						
11	I am happy with my performance in this course.	5	4	3	2	1
12	I am satisfied with the development of my academic skills in this course.	5	4	3	2	1
13	This content was more interesting than English courses at my university or high school.	5	4	3	2	1
14	This class was more difficult than English courses at my university or high school.	5	4	3	2	1
15	The amount of work in this course was too much.	5	4	3	2	1

16	Please rank the following tutorial activities based how much you believe they contributed to the development of your critical thinking skills. Please rank up to 5 activities. For example, rank the tutorial that most developed your critical thinking skills as "1", etc. Week 1_____ • Comparing and contrasting classical management theories Week 2_____ • Interpreting and analyzing results of a Big 5 personality test Week 3_____ • Creating and delivering presentations on motivation theories Week 4_____ • Applying the Job Characteristics Model to a case study Week 5_____ • Critically reviewing a research article on job satisfaction Week 6_____ • Applying principles of group behavior theories to a group project Week 7_____ • Presenting the results and conclusions of the group project Week 8_____ • Applying contingency leadership theory to a case study Week 9_____ • Creating and delivering presentations on organizational structure Week 10_____ • Presenting research reports on selected topics
17	Please explain the reason(s) for your answer to Question 16.
18	Please describe any benefits that you perceived from studying with content-based materials.
19	Please describe any challenges you perceived from studying with content-based materials.

I, _____(Student name)_____, agree to allow my responses to appear in a conference presentation or published research report about content-based instruction and critical thinking. No names or other identifying information will be released. This data is for planning and research purposes only.

Signature: _____ Date: _____