

THE DEVELOPMENT OF CRITICAL THINKING IN AN ENGLISH LANGUAGE ACADEMIC WRITING COURSE: A STUDY WITH TERTIARY STUDENTS OF A LOW LEVEL OF ENGLISH LANGUAGE PROFICIENCY

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ABSTRACT

This research focuses on an English for Academic Purposes (EAP) writing course to explore to what extent this can contribute to the development of critical thinking (CT) skills for students at levels A1, A2, and B1, which are the three lowest English language competency levels in the Common European Framework of Reference for languages. Quantitative research methods were employed to investigate the effectiveness of the course in developing students' CT skills. The results show that over half of the research participants, though with a low level of English language abilities, could express themselves more critically after the intervention of this EAP writing course which specifically involves the teaching of skills in conducting research, being critical, and writing academically. Hence, for colleges and universities offering English language courses and attempting to improve students' CT skills, an EAP writing course of this type can be an effective way of teaching CT skills, provided it can be successfully incorporated into the schools' English curriculum design.

本研究以学术英语的写作课程为重点来研究写作课程在多大程度上能够促进学生批判性思维能力的发展。本文以A1, A2以及B1的学生,也就欧洲语言共同参考框架定义下三种最低的英语能力的学生为研究对象。本文采用定量分析来确定该课程对学生的批判性思维发展的影响程度。研究显示超过半数的研究对象,即使英语水平较低,也认为学术英语写作训练让他们比以前更加具有批判性思维。这些写作训练包括了如何开展研究,发展批判性思维以及学术写作。所以,对于提供英语课程并希望提高学生批判性思维的高校来说,只要能够成功的在英语课程设计中加入学术英语写作课程,就能有效的教授学生批判性思维技巧。

INTRODUCTION

Bloom's Taxonomy (Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956) categorizes thinking into six different levels, i.e. knowledge, comprehension, application, analysis, synthesis and evaluation, with the last three higher thinking orders considered as essential elements of critical thinking (CT) skills. The term critical thinking has been more specifically defined in several ways. In 1989, the Delphi Project launched by the American Philosophy Association reached a consensus that the core of CT consists of six cognitive skills including interpretation, analysis, evaluation, inference, explanation and self-regulation (Facione, 1990). Another definition, as Paul & Elder (2006) state, is that CT is an ability to think consciously by using appropriate criteria and in the end to draw reasonable and justified conclusions. Though there are difficulties in defining this term, it has been generally agreed that CT in an educational context means tertiary level students should have the abilities to "identify issues and assumptions, recognize important relationships, make correct inferences, evaluate evidence or authority, and deduce conclusions" (Tsui, 2002, p. 743). This paper will focus on these five core CT skills and exemplify how they can be incorporated into an EAP writing course.

Based on Chinese overseas students' performance in class, there has been an assertion among English native speaking teachers that Chinese students are weak at CT (Atkinson, 1997; Foster & Mu, 2011). In fact, further studies have shown that Chinese students may have failed to demonstrate their CT abilities because of their insufficient experience and training of being critical (Durkin, 2008; Gu & Schweisfurth, 2006; Tian & Low, 2011). Due to the importance of being critical in a tertiary academic environment and the shortcomings in Chinese traditional education, Foster and Mu (2011) believe that it is a necessity for Chinese higher

education (HE) authorities to assimilate the teaching of CT into curriculum design. From a cognitive perspective, there is a positive link between the development of students' CT skills and their metacognitive strategies (Mall-Amiri & Ahmadi, 2014). Metacognitive strategies, defined as "higher order executive skills that may entail planning for, monitoring, or evaluating the success of a learning activity" (Chamot & O'Malley, 1994, p. 135), are considered to be essential for critical thinkers due to their positive impact on the learning process, especially the abilities to direct learning, find the most efficient ways to practice, and utilize what has been learned (Chari, Samavi, & Kordestani, 2010). Therefore, with enhanced CT skills, students who are weak at English should be more capable of strategizing their studies of English language skills and other academic courses.

As CT is a concept which originated in the English-speaking world, a promising solution to the problem may be to incorporate CT into the English language courses that are widely offered in China for students in different majors. Our research focuses on investigating an EAP writing course that can be integrated into the English curriculum design for HE institutions. Combining data collected from a comparative evaluation and a questionnaire, we aimed to find out to what extent the course contributed to the development of CT abilities for students at low levels of English language proficiencies.

LITERATURE REVIEW

Writing has been recognized as an effective way of developing CT skills. Wells (1990) argues that the epistemic property of written text can be used as a tool for thinking and developing new understanding, which is usually achieved through the communication between the reader or the writer and the text. Chaffee's (2015) 'Thinking-Writing Model', which consists of a three-

layer circle defining Writing Process as the basic level layer, Thinking Creatively, Critically and Thoughtfully as the second layer, and Purpose, Audience, Subject and Writer as the third layer, further specifies the relationship between thinking and writing.

Though the relationship between thinking and writing has been recognized, it is by no means easy to integrate CT with writing in pedagogical contexts. According to Bean (2011), good writing should be more than a grammatically correct summary of other's ideas gleaned from outside sources; instead, he believes that the key to assimilating CT into writing lies in "the generation of ideas and the production of one's own arguments" (p. 21). In addition, McPeck (1990) claims that it is only when the person has enough background knowledge that CT skills such as selecting useful information, evaluating sources, and analyzing the materials will develop, which is similar to a common educational belief acknowledging that the learning of CT skills works more efficiently when there is a sufficient input of subject knowledge (Moore, 2004; Facione, 1990; Bloom et al., 1956). Furthermore, an even higher requirement for critical thinkers is that they should "go beyond challenging the opposition in an effort to build new understanding, to advance new theory, and to determine what will portend the future" (Roy & Macchiette, 2005, p. 272).

Another challenge of nurturing CT abilities is claimed to be connected with Chinese students' English language skills. Jones, Robertson, and Line (1999) observed that international students in Australia who were speaking English as a second language did not perform as critically as English native speaking students. Another study conducted by Rashid and Hashim (2008) among Malaysian undergraduates shows that English language proficiency is significantly correlated with students' CT skills, which means ▶

students at a high English language level are more likely to be critical. Other researchers (Cheng, 2000; Durkin, 2008; Gu & Schweisfurth, 2006) have also shown that inadequate language proficiency is a main factor influencing the improvement of Chinese students' CT abilities. In brief, the existing literature has revealed that students with weak English language skills may have problems in demonstrating their criticality.

As a matter of fact, Shirkhani and Fahim (2011) believe that the training of CT for students who are weak at English should not be underestimated or even avoided due to its importance in promoting effective language learning. However, more evidence is needed to prove this theory. The evaluation of the impact of an English academic writing course delivered to students at low English language competence on the development of CT skills, should contribute to this research gap.

METHODOLOGY

The research participants were comprised of 21 students enrolled in an International Foundation Program (IFP) from a private vocational college in Suzhou and majored in either International Business Management or Computer Science. This one-year two-semester IFP study is to equip students who intend to do overseas studies in the future with both general and academic English language skills. Each semester in the program requires an accomplishment of four compulsory modules. The Oxford English Placement Test was conducted at the beginning of each semester with the purpose of placing students in an appropriate stream based on the test results. The research commenced at the start of the second semester in the participants' IFP studies in 2016 Spring and the test results showed that their English levels were at CEFR A1, A2 or B1, which are the three lowest levels. The research participants were selected based on convenience sampling, which

is "the least rigorous sampling, involving the selection of the most accessible subjects" but the most cost-effective one "in terms of time, effort and money" (Marshall, 1996, p.523).

To measure the change of students' CT levels revealed in their writing, the data was analysed using a comparative evaluation, with the intervention being a 14-week English language academic writing course known as "Integrated Project" (IP). A comparative evaluation is a research method defined by Salminen and Lehtinen (1982, as cited in Vartiainen, 2002) as a means of "analyzing similarities and differences in communities and human systems" (p. 360), and other researchers (Ragin, 1987; Mayer, 1989) emphasized that comparisons are made for the purpose of understanding and explaining different phenomena. Thus, this study used a comparative evaluation to analyze the changes in research participants' CT levels over two writing tasks. In addition, a questionnaire survey was administrated at the end of the semester to generate data about the research participants' self-perceptions of their CT skills after taking the IP course, since the questionnaire is a significant research tool in social science to acquire information on participant beliefs pertaining to a study (Bird, 2009).

The research participants were informed about the purpose of the study. With their agreement, research data was kept confidential and anonymous. In addition, in order to gather reliable data, it was explained clearly to the participants that they should answer the survey questions based on their own fair assessment.

The IP course was an academic writing course conducted in English by means of both lecture and tutorial, and it was allocated with four teaching hours and two office hours each week. The final assessment was to write a 1500-word paper on a topic related to

the students' majors and prepare a 10-minute presentation about their paper. These students have already acquired some basic academic writing skills in the first semester through modules such as General English and Communication Skills; however, due to the challenge of the tasks, students at very low levels of English abilities could still encounter various problems when they were lacking necessary research and CT skills. Therefore, it was designed so that the first half of the course included training to equip the students with research and CT skills, and the second half of the semester focused more on academic writing skills. Based on the CT definitions (Bloom et al., 1956; Facione, 1990; Paul & Elder, 2006; Tsui, 2002) that specify the essential CT abilities that students need to have, students were equipped with necessary research and CT skills from week 1 to week 7. These seven weeks of teaching concentrated on three main areas, namely, choosing an appropriate essay question, finding and reading critically about the sources, and forming arguments. In the first two weeks, students were scaffolded about how to select a suitable essay question, starting from narrowing a broad topic, examining strong and weak sample questions, identifying an issue in business or IT world, writing an essay question, and ending with constructing a working thesis. Following that, three weeks were assigned to: using internet search strategies, searching broadly to gather background knowledge, listing sub-questions to clarify research needs, reading critically about the sources and selecting useful information. The last teaching focus was about training students with argumentative abilities by stating their stances, and then debating and refuting counter-opinions to reaffirm their arguments. Starting from week 8, most of the teaching contents were on reviewing academic styles of writing.

Comparative evaluation

At the end of Week 2 of the 2016 Spring Semester after the essay

questions of the final paper were chosen and the writing of a focused thesis statement was taught, the research participants were given the task of producing a minimum three-paragraph draft on the chosen topic. With limited teacher intervention, the following two weeks (both in-class and out of class) were given to these students to find sources and produce a three-paragraph problem-solution essay of around 500 words. For the second writing task, the research participants had week 11 and 12 to independently produce another three-section paper on the same essay question at similar length. These two essays were used for the comparative evaluation.

This study employed the Generic CASE Rubric written by the Quality Enhancement Plan (QEP) Committee (Burkett & Bryce, 2012), as a detailed approach to evaluate students' CT levels demonstrated in their first and second writing tasks. This CASE rubric, as emphasized by Burkett and Bryce (2012), is composed to assess college students' CT abilities in their written arguments. In

this rubric, CT skills developed by Delphi (Facione, 1990) are refined into four categories, namely skills of "clarifying issues and thesis, arguing with reasons and evidence, situating perspectives, and explaining implications and applications". The four categories correspond with, yet are more specific than, "generation of idea" and "production of arguments" in Bean's (2011) stance, and more importantly, they are aligned with the five requirements of developing CT skills for tertiary level students (Tsui, 2002). This generic rubric was not disclosed to the students during the research process in order to prevent reactive effect. The change of the participants' CT levels was measured through comparing the difference of the scores marked in the two pieces of writing.

All 42 papers were analyzed based on this Generic CASE Rubric. Each individual paper was examined and marked in the four categories mentioned above, and marked against five bands '0-No score; 1-Insufficient; 2-Sufficient; 3-Proficient; 4-Exemplary', which

depended on how sufficiently the paper had met the four criteria. In order to maintain consistency, the two markers from the research team were assigned to mark all the papers, and marking was done anonymously. Standardization of the rubric was done before the marking, and the marks were then compared for consistency. In case of marking disputes, negotiation among all the researchers took place to maintain consistency and reliability.

Survey

After the completion of the second writing and before any result of the final essay was released, the research participants were invited to complete a survey to self-evaluate their CT skills in the second paper. Adapted from the criteria in the Generic CASE Rubric (Burkett & Bryce, 2012) and the definitions of CT, ten survey questions were designed in a four-point Likert scale to explore the research participants' self-perception of their CT progressions. Table 1 illustrates the link between the survey questions and the relevant CASE Rubric ▶

SURVEY QUESTION	CASE RUBRIC CRITERION / DEFINITIONS OF CT
1. I introduce my topic clearly at the beginning of the paper.	Clarify the issue and state the thesis
2. I have a clear thesis and road map.	Clarify the issue and state the thesis
3. I support my arguments with expert opinions from reliable sources.	Argue with reasons and evidence
4. I ask myself 'how' and 'why' questions as I'm writing my paper.	Argue with reasons and evidence
5. I provide examples and details to express my view.	Argue with reasons and evidence
6. I acknowledge and refute points of view that are different from my own.	Situate perspectives
7. I use the instructor's feedback to develop my paper.	"Synthesis" in Bloom's Taxonomy (Bloom et al., 1956)
8. I give thoughtful recommendations at the end of the paper.	Explain implications and applications
9. I can explain the importance of my topic.	Explain implications and applications
10. I can apply my knowledge about the academic paper writing process to new situations.	"Self-Regulation" in Delphi Project (Facione, 1990)

▲ Table 1.: Relationship between survey questions and theoretical frameworks

criterion / definitions of CT.

The overall possible score of the survey was 40. After standardization among the researchers, it was decided that research participants who scored themselves between 31 - 40 meant they perceived themselves to have a high (H) level of CT, 21 - 30 meant a medium (M) level, and 10 - 20 and below meant a low (L) level of CT ability. The survey results were cross-checked with the second writing task results in equivalence of bands '0-No score' and '1-Insufficient' as L, '2-Sufficient' as M and '3-Proficient' as H, so as to find out whether the students' self-assessments were consistent with the researchers' evaluation of the students' CT skills.

FINDINGS

Comparative evaluation

Figure 1 illustrates the research participants' average scores of the first and second writing tasks in the four categories of the Generic CASE Rubric for Critical Thinking. It can be seen that, in general, there were obvious improvements in the four aspects of criticality in the participants' written arguments.

Overall, after taking this course for one semester, it is clear that on average the research participants were able to demonstrate a level of 'sufficient' criticality with their writing in at least three aspects, as the CASE Rubric demands. Unfortunately, although significant improvement occurred, most participants were not able to develop their writing of 'situating perspectives' into a sufficient level through the training of this course.

Survey

The survey results show that 52% of the participants perceived themselves as having a Medium level, and 48% of them a High level, of CT skills. The results indicate that almost half of the participants were very confident about their performance in their second writing task. In contrast with each participant's average score given by the researchers in the second writing, 48% of the participants had a relatively accurate evaluation of their CT levels; while interestingly another 48% of them had higher self-perception. Only one student had lower perception.

DISCUSSION

Comparative evaluation

The positive results reveal that, by incorporating research skills, CT training and academic writing into the course design, the delivery of this IP course appears to have contributed to the research participants' CT progression. First of all, having the ability to "clarify issues and thesis" is a prerequisite for students' development of CT. Students were taught early in the course about how to find sources online and were required to gather reliable sources related to their essay topics. They were encouraged to write their working thesis based on the knowledge they learned from the sources, which is aligned with the emphasis that subject knowledge is the foundation for the development of CT skills (Bloom et al., 1956; Facione, 1990; McPeck, 1990; Moore, 2004).

Secondly, the ability to put together a coherent argument is an important aspect to be examined when evaluating CT in academic writing (Vyncke, 2012). For the purpose of forming sound argumentations, five consecutive weeks of the IP teaching

emphasized teaching students how to find, read, choose, evaluate, and integrate the sources. This teaching process is designed to facilitate the progress of students' CT from a lower level to a higher level as with what Bloom's Taxonomy has classified (Bloom et al., 1956), and also to guide students to integrate CT into their writing by generating ideas and producing arguments (Bean, 2011).

With regard to the ability to "situate perspectives", students were taught in week 7 that when presenting a complete argumentation, they need to firstly support their own claims with reasoning, then recognize opposing viewpoints by showing acknowledgement, and in the end, accommodate and refute the opposite perspectives. This was perhaps the most difficult task for students to reach a 'Sufficient' level of mastery, among the four criteria in the comparative evaluation. However, without this higher order thinking ability, as Roy and Macchiette (2005) point out, students may not be able to generate new opinions and speculate about the future.

Lastly, to draw conclusions and generate implications is one of the key CT skills (Paul & Elder, 2006). Students were advised in week 10 about how to write an effective conclusion, and they were required to conclude their papers with a brief summary and provide some final thoughts which could be call for actions, suggestions or warnings. It was found in the research participants' second writing that most of them could restate the key points from their writing but some were still weak in giving implications.

Survey

Compared with the second CT scores finalized by the researchers, the self-evaluation survey results show that approximately half of the research participants could accurately assess their accomplishment of this learning activity, which is a development of their metacognitive strategy

(Chamot & O'Malley, 1994). This strategy should motivate them to keep developing their CT skills in the future, as Mall-Amiri and Ahmadi (2014) report that there is a close relationship between the development of positive metacognitive abilities and the success in critical thinking. With the ability to evaluate the accomplishment of a task and make the right assessment, learners can better strategize their learning process in future studies (Chari et al., 2010).

CONCLUSION

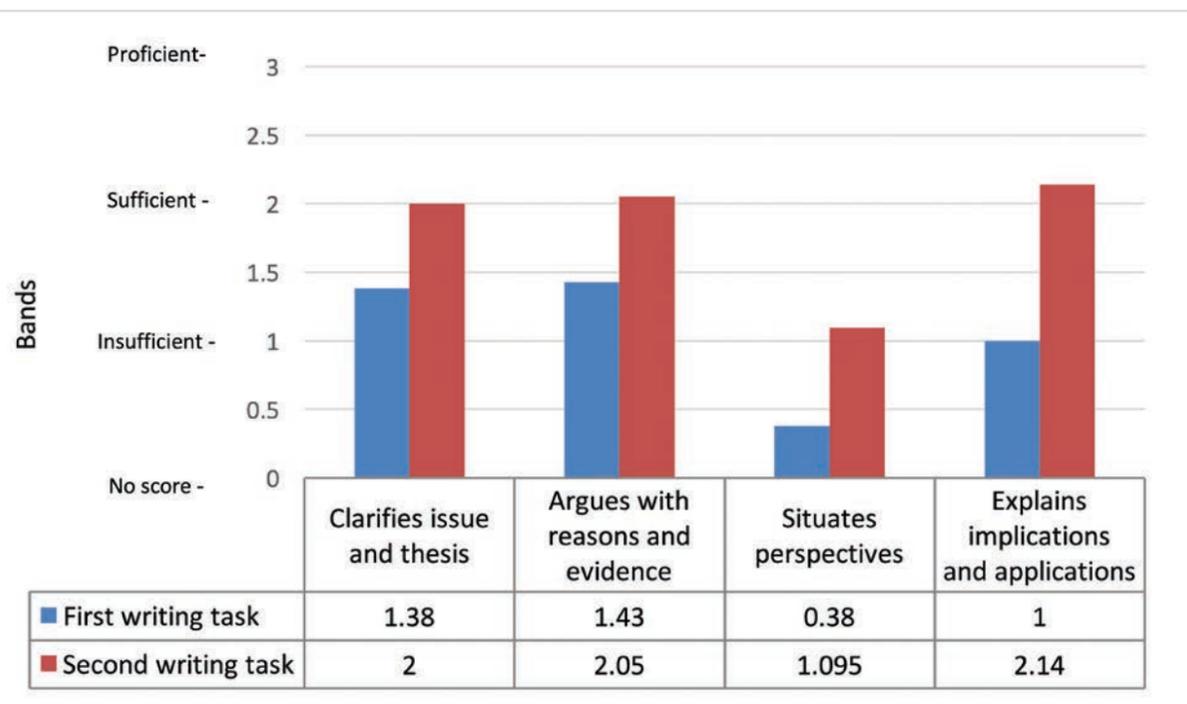
Expressing CT in English is a skill that has in the past mainly been taught to students having a high level of English language ability. However, this research has demonstrated the possibilities for students at a low level of English language proficiency to be nurtured with CT skills through a carefully designed English language academic writing course. After one semester of training, it is found that this course can help facilitate the development of students' CT abilities, though students may have not been able to fully master all the necessary elements of CT in 14 weeks. It cannot be denied, however, that there are some limitations of this research. One is that the development of students' CT skills would have been more accurately assessed if there had been a control group. In addition, the teaching content of other courses in the program might have affected the students' CT development; thus, it cannot be concluded that the improvement of the research participants' CT skills can be completely attributed to the IP course. Lastly, due to the constraints of financial and personnel resources, the convenience sampling method employed for selecting research participants may have impacted the ability of generalization of the research findings.

In summary, based on the research findings, it has been shown that students at a low level of English language proficiency can to some

extent develop their CT abilities through EAP writing, which refutes the belief held by some researchers that CT is more suitable to be developed among advanced English language learners. Therefore, having such an English language academic writing course incorporated into the English curriculum at universities, colleges and vocational HE institutions can be a valuable tool to train students at tertiary level with certain CT abilities, even those with a low level of English proficiency. ○

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▲ Figure 1.: Average scores in the four categories

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