Developing Critical Thinking through Literature Reading

Chi-An Tung[*] *Shu-Ying Chang*[**]

Abstract

Developing critical thinking skills and critical thinking disposition in college students has been set as a primary goal in higher education for decades. Recently it has become more urgent in implementing this goal to enhance students' employability in the fast-changing workplace. This study investigated the efficacy of developing critical thinking through literature reading. A few strategies are incorporated into the course design: reading comprehension pop quizzes, learning log, group presentations, guided in-class discussion with Socratic questioning skills and individual essay-question reports. Students took the pretest and posttest (California Critical Thinking Skills Test) and a self-assessed questionnaire and then scheduled an individual interview with the teacher. Finally, a few findings were located: 1) literature reading helped those who scored low in the pretest improve their overall critical thinking skills, particularly those in analysis; 2) students' English proficiency did not relate to their performance in both the pretest and posttest; 3)some students were assertive they tended to show more disposition toward critical thinking than ever but this needs a follow-up longitudinal study with a standardized measure to assess the efficacy in this respect; 4) Students found guided in-class discussion more effective than other student-directed activities in developing critical thinking.

Keywords: critical thinking, literature reading, teaching strategies, EFL teaching

[*] Lecturer, Language Center, Feng Chia University.
[**] Lecturer, Language Center, Feng Chia University.

I. Introduction

Since the 1990s, developing critical thinking skills and critical disposition in undergraduate students has been set as a primary goal in higher education. In hope that students can function well within society, evaluate the validity of information available, make better personal, business or leadership decisions, scholars and educators (Braun, 2004; Halpern, 1998; Kegan, 1994; Kalyczynski, 2001)[1] have advocated that developing critical thinking skills are essential to help students "know how to learn and how to think clearly" (Halpern, 1998, p. 450)[2] and "make purposeful judgments about what to believe or what to do" (Facione, Sanchez, Facione, & Gainen, 1995, p. 3).[3] It is believed that with good critical thinking ability, college graduates can be better prepared to compete and exercise their rights and responsibilities of citizenship in a global community.

The importance of this belief has been re-emphasized recently due to the change of workforce and the demands of the global workplace. In an Association of American College and Universities (AACU) report (2005),[4] as few as 6% of college graduates were considered proficient in critical thinking. Three years later, in a survey conducted on behalf of AACU (2008)[5] on "How Should College Assess And Improve Student Learning?" most employers stated that the majority of college graduates were not prepared in the key areas such as critical thinking, writing, self-direction and global knowledge which are most in need of improvement if promotion is desired. Though critical thinking has been listed as a core area to be cultivated and assessed in higher education for decades, critical thinking instruction

---

[1] Braun, N. M. "Critical Thinking in the Business Curriculum," *Journal of Education for Business*, Vol. 79 (2004), pp.232-236; Halpern, D. "Teaching Critical Thinking for Transfer across Domains: Dispositions, Skills, Structure Training, and Metacognitive Monitoring," *American Psychologist*, Vol. 53 (1998), pp. 449-455; Kegan, R. *In Over Our Heads: The Mental Demands of Modern Life.* Harvard University Press: Cambridge, 1994; Klaczynski, P. A. "Framing Effects on Adolescent Task Representations, Analytic and Heuristic Processing, and Decision Making: Implications for the Normative/descriptive Gap," *Journal of Applied Developmental Psychology,* Vol. 22 (2001), pp. 289-309.

[2] Halpern, D., op. cit. (1998).

[3] Facione, P. A., Sanchez, (Giancarlo) C. A., Facione, N. C., & Gainen, J. "The Disposition toward Critical Thinking," *Journal of General Education*, Vol. 44, No. 1 (1995), pp. 1-25.

[4] Association of American Colleges and Universities. *Liberal Education Outcomes: A Preliminary Report on Student Achievement in College.* Washington, DC: AAC&U, 2005.

[5] Association of American Colleges and Universities. *How Should Colleges Assess and Improve Student Learning? Employers' Views on the Accountability Challenge.* Washington, DC: Peter D. Hart Research Associates, 2008.

still needs to be carried out more systematically and explicitly in college classrooms so that the students' employability can be enhanced.

Some scholars have argued the validity of teaching critical thinking skills in an ESL/EFL context (Atkinson, 1997; Davison, 1998; Day, 2003; Kubota, 1999).[6] However, "the world is flat" as Thomas L. Friedman proclaimed in one of his bestsellers (2005).[7] Regional or cultural boundaries have been dismantled due to the accelerating information exchanges and economic interactions in the global community. Any global citizen is obliged to cope with the international trends and prepare himself/herself with skills that help him/her learn how to learn. "Though there are certain aspects of critical thinking that may be 'foreign' in non-Western context, if students are not exposed to these skills, they will be denied the opportunities to complete [compete] in the global community" (Long, 2003, p. 230).[8] For Taiwanese undergraduates, it is particularly true. In the past two decades, some scholars and educators have highlighted the importance of critical thinking instruction. Some made efforts to collaborate critical thinking training in general courses or content-based courses in primary and secondary education curricula (葉, 1991; 張, 1992; 陳, 1995; 郭, 2002; Chiodo & Tsai, 1997; Yang & Chung, 2009).[9] Recently some have implemented critical thinking pedagogy in higher education (崔, 2005; Chang, 2006; Fang et al, 2008; Huang & Lee, 2004; Liaw, 2007; Yang, Newby & Bill, 2005).[10] But it is found that most undergraduates are still not proficient in critical

---

[6] Atkiinson, D. "A Critical Approach to Critical Thinking in TESOL," *TESOL Quarterly*, No. 31 (1997), pp. 71-94; Davidson, B. "Critical Thinking Faces the Challenge of Japan," *Inquiry*, Vol. 14, No. 3 (1998), pp. 41-53; Day, R. "Teaching Critical Thinking and Discussion," *The Language Teacher*, Vo. No. 7 (2003), pp. 25-27; Kubota, R. "Japanese Culture Constructed by Discourse: Implications for Applied Linguistics Research and ELT," *TESOL Quarterly*, Vol. 33 (1999), pp. 9-35.

[7] Friedman, T. *The World Is Flat: A Brief History of the Twenty-first Century*. New York, NY: Farrar, Straus & Giroux, 2005.

[8] Long, C. J. "Teaching Critical Thinking in Asian EFL Contexts: Theoretical Issues and Practical Applications," *Proceedings of the 8th Conference of Pan-Pacific Association of Applied Linguistics,* 2003.

[9] 葉玉珠，〈我國中小學學生批判思考及其相關因素之研究〉，國立政治大學教育研究所碩士論文，，1991 年; 張玉成，〈國小語文科實施批判思考教學之實驗研究〉，台北師院學報，第 5 卷，1992 年; 陳錦蓮，〈國小兒童哲學方案－批判思考教學之實驗成效〉，台北市立師範學院初等教育系碩士論文，1995 年; 郭麗珠，〈國小社會科實施批判思考教學之實驗研究〉，國立台北師範學院課程與教學研究所碩士論文，2002 年; Chiodo, J. J. & Tsai, M. H. "Secondary School Teachers' Perspectives of Teaching Critical Thinking in Social Studies in the Republic of China," *Journal of Social Studies Research*, Fall, 1997; Yang, S. C., & Chung, T. Y. "Experimental Study of Teaching Critical Thinking in Civic Education in Taiwanese Junior High School," *British Journal of Educational Psychology, 2009.*

[10] 崔正芳，〈大學生英語學習與批判思考能力之相關研究: 問題初探〉，NSC 93-2411-H-004-043，2005 年; Chang, C. F. *A Case Study of Taiwanese College Students' Participation Behaviors*

thinking unless they are provided with a secured learning environment (Chau, et al, 2001),[11] given more time to think (Yeh, 2004),[12] or offered with more modeling, practicing and reinforcement (Yang & Chou, 2008).[13]

The causes for such a problem are multiple and complex: 1) Students' prior learning habits and experiences are mostly reproduction-oriented while they were rarely given the chances to question, explain, or evaluate the "knowledge" instructed in the classroom; 2) the teaching faculty in the primary and secondary education received little guidance or assistance regarding critical thinking instruction and furthermore, their teaching load and time constraint deprive them of the chance to embed critical thinking into curricula (Chen, 1989; Chiodo & Tsai, 1995, 1997);[14] 3) students are more attuned to a collectivist society where individuality in thought and action is not valued as that much as in a western society (Long, 2003; McBride, Xiang, Wittenburg & Shen, 2002).[15] Compared with their western counterparts, Taiwanese students are less expressive, less inquisitive, less confident and less mature in seeking truth. Generally speaking, they are immature in critical thinking.

Therefore, how to reverse these students' learning habits and sets of minds by helping them develop critical thinking skills and nurture disposition toward critical

---

and Critical Thinking in Both Face-to-face and Computer-mediated Communication Modes. NSC93-2411-H-009-02 (2006); Fang, R. J., Lin, C. C., Yang, H. J. H., Lee, C. J., Tsai, H. L., & Tsai, T.S. "A Study to Increase the Critical Thinking and Problem Solving Abilities by Web-based Learning," *Proceedings of the 8th WSEAS International Conference on Multimedia Systems and Signal Processing, 2008;* Huang, N. & Lee, D. "A Discourse Analysis of Asynchronous Discussion Board on Students Critical Thinking," *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education 2004,* pp. 708-713; Liaw, M. L. "Content-Based Reading and Writing for Critical Thinking Skills in EFL Context," *English Teaching and Learning*, Vol. 31, No. 2 (2007), pp. 45-87; Yang, Y. T., Newby, T. J., & Bill, R. L. "Using Socratic Questioning to Promote Critical Thinking Skills Through Asynchronous Discussion Forums in Distance Learning Environments," *The American Journal of Distance Education*, Vol. 19, No. 3 (2005), pp. 163-181.

[11] Chau, J. P. C., Chang, A. M., Lee, I. F. K., Ip, W. Y., Lee, D. T. F. & Wootton, Y. "Effects of Using Videotaped Vignettes on Enhancing Students' Critical Thinking Ability in a Baccalaureate Nursing Programme," *Journal of Advanced Nursing*, Vo. 36, No. 1 (2001), pp. 112-119.

[12] Yeh, Y. C. "Nurturing Reflective Teaching during Critical Thinking Instruction in Computer Stimulation Program," *Computers and Education*, Vol.42, No. 2 (2004), PP. 181-194.

[13] Yang, Y. T. & Chou, H. A. "Beyond Critical Thinking Skills: Investigating the Relationship between Critical Thinking Skills and Dispositions through Different Online Instructional Strategies," *British Journal of Educational Technology,* Vol. 39 (2008), pp. 668-784.

[14] Chen, L. H. "The Soul-searching of Critical Thinking Teaching in Elementary School Social Studies," *Contempora Education,* Vol. 15 (1989), pp. 121-135; Chiodo, J. J. & Tsai, M. H. "Taiwanese Students in American Universities: Are They Ready for Critical Thinking?" *College Student Journal*, Vol. 29, No. 3 (1995), pp. 374-382; Chiodo, J. J. & Tsai, M. H., op. cit. (1997).

[15] Long, C. J. op. cit. (2003); McBride, R. E., Xiang, R., Wittenburg, D. & Shen, J. "An Analysis of Preservice Teachers' Disposition toward Critical Thinking: A Cross-cultural Perspective," *Asian-Pacific Journal of Teacher Education*, Vol. 30 (2002), pp. 131-140.

thinking is of great importance. This study aims to embed critical thinking to a literature introduction course to locate a possible solution to this problem.

Why Critical Thinking? Why Literature Reading?

> Literature-based reading has an important effect on the development of critical thinking.   A reader must recognize patterns within text, fit details into these patterns, then relate them to other texts and remembered experiences.   (*Critical Thinking and Literature-based Reading*, 1997, p. 1)[16]

Literature reading is eminently congenial to the essential traits of critical thinking for the following reasons.   First, the mental process of literature reading requires critical thinking skills.   Literature reading is a complex process that requires readers to recall, retrieve and reflect on their prior experiences or memories to construct meanings of the text.   While they are doing so, they need to demonstrate the following capacities: to differentiate facts from opinions; to understand the literal or implied meanings and the narrator's tone; to locate details related to the issues discussed; to find out the causal relationship or the connections between the events or actions; to detect an inferential relationship from the details observed; to be perceptive of multiple points of views; to make moral reasoning and fair-grounded judgments; and most of all, to apply what they have learned from this process to other domains or the real world.   In a sense, readers are exercising what the CT experts termed "explanation," "analysis," "synthesis," "argumentation," "interpretation," "evaluation," "problem-solving," "inference" "logical reasoning," and "application" (Brunt, 2005; Facione, 2007; Halpern, 1998; Lazere, 1987).[17] All these abilities, in sum, are critical thinking skills.   That is why Lazere argued that "literature…is the single academic discipline that can come closest to encompassing the full range of mental traits currently considered to comprise critical thinking" (1987, p. 3).[18]

---

[16]*Critical Thinking and Literature-Based Reading. Report.* Madison, WI: The Institute for Academic Excellence, 1997.

[17]Brunt, B. A. "Critical Thinking in Nursing: An Integrated Review," *Journal of Continuing Education in Nursing,* Vol. 36 (2005)*,* pp. 60-67; Facione, P. A. *Critical Thinking: What It Is and Why It Counts.* Milbrae, CA: The California Academic Press, 2007; Halpern, D, op, cit. (1998); Lazere, D. "Critical Thinking in College English Studies," *ERIC Digest*. ED 284275, 1987.

[18]Lazere, D., op. cit., (1987).

Second, the subject matter, the setting and the language of a literary work provide readers with a variety of real-world scenarios to construct meanings of self and life incrementally.　A piece of literature is a mirror of life and a world reconstructed.　By investigating into its plot, thematic development, and the interactions of the characters with others and the milieu, readers are exposed to multiple points of view and thus compelled to think and rethink their own ideas and actions.　Hopefully, if they are successful readers, they will see their limitations and weaknesses and they will make efforts to change.　It is more than just assisting readers in solving problems and developing critical thinking skills, a good literary work aims to help readers learn to change and be better through challenging a text. If this experience can be applied to other fields of training, readers (undergraduates in this case) can gradually achieve self-direction and nurture such affective disposition as open-mindedness, self-confidence, prudence and truth-seeking which are essential to develop critical thinking (Facione, 1992).[19]

II. The Present Study

This study focuses on the following research questions: 1) Can reading literature help undergraduates cultivate critical thinking skills? 2) Is students' English proficiency related to their acquisition of critical thinking skills? 3) Can reading literature help them develop dispositions for critical thinking? 4) What kind of teaching/learning activities is the most beneficial in helping students develop critical thinking?

A. Methodology

In Taiwan, in a literature class for non-English majors, it is typical to observe the following phenomena: 1) majority of the students aim at improving their reading proficiency while they sit passively and read only the assignments; 2) most students were hardly verbal or expressive in response to the critical questions brought up by the teacher; 3) most students are anxious to confirm their understanding of "what happened" instead of questioning "why or how it happened?" In a sense, their minds are mostly processing Bloom's bottom two low-order thinking skills

---

[19]Facione, P. A. & Facione, N. C. *The CCTDI: A Disposition Inventory*. Milbrae, CA: The California Academic Press, 1992.

(1956)[20]—knowledge and comprehension—as they fail to reflect and examine their beliefs and actions.   To initiate them into higher-order thinking skills and to mitigate the "boredom" (Schmit, 2002)[21] or the "distress" (Caine and Caine, 1991)[22] that interferes with thought, a few strategies are incorporated into the course design: 1) reading comprehension pop quizzes to verify their understanding of the text; 2) learning log to detect their weaknesses in logical reasoning; 3) group presentations to enhance their abilities in synthesis, organization, communication and cooperation; 4) guided in-class discussion with Socratic questioning skills to provoke their critical thinking; and 5) individual essay-question reports to promote deductive or inductive reasoning and organization.

B. Participants, setting and procedure

Participants in this study were 12 non-English majors[23] (10 females and 2 males) who were enrolled in "Honors Program: Introduction to Literature" at a private university in central Taiwan.   These students had passed a minimum English proficiency requirement –TOEIC Bridge 140-- to get enrolled in the English Honors Program.   This 18-week course was an elective with 2 hours/per week instruction and discussion covering three genres: fiction, poetry and drama.   Critical thinking was not particularly or separately taught in class but was briefly introduced in the first meeting and embedded in literature reading and discussion in the following sessions.   Then students were scheduled to take the Chinese version of California Critical Thinking Skills Test (CCTST)[24] outside the class before the 2nd meeting.

---

[20]Bloom, B., Englehart, M, Furst, E., Hill,W. & Krahtwohl, D. *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 1: Cognitive Domain*. New York: Longmans Green, 1956.

[21]Schmit, J. S. "Practicing Critical Thinking through Inquiry into Literature," in J. Schmit (Ed.), *Inquiry and the Literary Text: Constructing Discussions in the English Classroom. Classroom Practices in Teaching English,* Urbana, IL: National Council of Teachers of English, 2002, pp. 117-125.

[22]Caine, R. N. & Caine, G. *Making Connections: Teaching and Human Brain*. Alexandria, VA: ASCD, 1991.

[23]Originally there were 15 students enrolled in this course.   But 2 students dropped before the midterm and 1, due to personal reason, missed the second half of the course. Therefore only 12 students were engaged in this study.

[24]The CCTST is a standardized test comprising 34 multiple-choice questions.   It measures an individual's overall critical thinking ability and his/her critical thinking skills in analysis, evaluation, inference, deductive reasoning and inductive reasoning. The students took the Chinese version to avoid any confusion or ambiguity in meanings that may incur due to language problem.

For each reading assignment, students were required to answer all the questions listed in the learning log[25] before they walked into the classroom for lecture and discussion.　Due to the differences in their levels of English language proficiency, students were allowed to use mapping or just key words with causal links to explain their ideas or observations in the learning log. After their submission of the learning log sheets, they were required to take a 5-minute quiz (10 T/F or multiple-choice questions) on the assignment before the lecture or discussion started. This was to ensure their basic understanding of the content was correct and they had fulfilled their reading obligation.　Then about 10-15 minutes were spent in tackling the language problems—sometimes grammatical, sometimes syntactical, but most of the time idiomatic problems.

Then to initiate a discussion, a series of questions were given: "Did you like the story?" "What did you think this story is about?" "Which part of the story perplexed or impressed you the most?" After pooling their comments on the story, Socratic questioning as suggested by Paul and Elder (2007; 2008)[26] was adopted to heighten the depth and breadth of their answers or to solicit opposing points of views.　For example, "What does it mean when Y said ＿＿＿ in the story/play?" "How did you come up with the ideas/observations?" "Could you elaborate it with more details?" "Do you agree with X's choices or decisions in the story/play?" and "What points of views are relevant to this issue?"　During the process, the teacher tried to ensure an amiable atmosphere without time constraint so that peer or teacher vs student interactions can be more active and productive.　Besides, to award students' sharing their thoughts, a sticker was awarded for any comments, questions or answers that inspired peers to think critically.　The top five sticker-earners would be awarded extra 3 points in their final grades.

A month later when they were more familiar with one another, they grouped themselves into four and chose the scheduled dates for group presentations: one scheduled after midterm exam and the other scheduled near the end of the semester. In this way, each group would have at least 4-6 weeks to prepare for the presentations. Each group needed to use brainstorming, mind-mapping to finalize a topic, to locate

---

[25]See Appendix A for questions covered in the learning log.　The first 3 parts of the learning log focused on testing their "explanation," "analysis," "synthesis," "interpretation," and "inference" abilities.　In the 4th part, they are welcome to bring up any perplexing questions regarding the language, text, elements of literature, themes or cultural issues.

[26]Paul, R. & Elder, L. "Critical Thinking: The Art of Socratic Questioning," *Journal of Developmental Education*. Vol. 31, No. 1 (2007), pp. 36-37; Paul, R. & Elder, L. "Critical thinking: The Art of Socratic Questioning, Part III," *Journal of Developmental Education*. Vol. 31, No. 3 (2008), pp. 34-35.

relevant details to support the topic, and to cross-exam its rationale.   Since these students were non-English majors, they were required to schedule at least two conferences with the teacher before the presentation.   In this way, the content and the organization of the presentation could be fairly unified, supported and coherent. All the members were obliged to rehearse the presentation together so that each one was familiar with the content overall, not just partially.   Besides, on the day of presentation, all the members needed to present themselves in front of the class: some were in charge of the opening, some in explaining the ideas, some in conclusion and some in Q & A.   In this way, the quality of their team work could be better assessed.

During the semester, students were required to write three essay-question reports on fiction, poetry and drama.   They could choose any two study questions assigned for each literary work to write a report but the questions had to be pertinent to one genre.   In these reports, teacher would focus on individual student's critical thinking ability and the construct of meanings.   Sentence-level errors would be ignored. Students were encouraged to consult the teacher for any language problems when drafting the reports.   Once the reports were graded, commented and returned, students could rewrite or revise the reports to make the ideas more explicit, supported or better organized.   Then they could re-submit the reports within one week upon receipt of the comments.   If they felt they could present their thoughts better in the third or fourth rewrites, they were free to do so but had to abide by the re-submission-in-one-week policy.   This was in hope that students could have more opportunities to practice and reinforce their critical thinking and nurture their critical thinking disposition.

In the last meeting, students took a questionnaire[27] to give comments on the teaching strategies and self-assess their learning performance. Students also took the CCTST posttest but outside the class.   Afterwards, students' answer cards for the pretest and posttest were mailed to California Academic Press, the publisher of CCTST, for data analysis.   One month later when the results were sent back, the teacher scheduled individual interviews with students to let them know the results and their strengths and weaknesses in critical thinking.

---

[27]See Appendix B.   Therefore only 12 students took the questionnaire and the CCTST posttest.

III. Results

This study produced several findings.　First, to those who scored low in CCTST pretest,[28] their overall critical thinking and their "analysis" ability particularly made significant improvement after the treatment.　Matched-pairs t-tests were performed on the students' CCTST pretest and posttest.　As displayed in Table 1, after the treatment, the low-score achievers made significant improvement in overall score of CCTST and also in the sub-score of "analysis."　However, the high-score achievers failed to show any significant progress in overall score of CCTST or any sub-score (as shown in Table 2). Nevertheless, in the students' self-assessment questionnaire,[29] when answering the sub-questions of Q25, disregard the difference in their CCTST scores, students thought they made the most improvement in "analysis" than other critical thinking skills (Table 3).

Table 1. Matched-pairs t-test on CCTST pretest and posttest (Low-score achievers)

	Mean	s. d.	t	df	p
Total	-2.29	2.43	-2.489	6	.047**
Analysis	-1.00	1.00	-2.646	6	.038**
Evaluation	-.43	1.99	-.570	6	.589
Inference	-.86	1.07	-2.121	6	.078
Deductive reasoning	-.71	1.50	-1.263	6	.253
Inductive reasoning	-.71	1.80	-1.050	6	.334

P-values are significant at the 0.05 level (2-tailed).

Table 2. Matched-pairs t-test on CCTST pretest and posttest (High-score achievers)

	Mean	s. d.	t	df	p
Total	2.60	2.97	1.960	4	.122

---

[28]In the CCTST pretest, it was found there were two groups whose score percentiles were in two extremes.　One group (7 students) ranged from PR 42-55 while the other (5 students) ranged from PR 85-90 according to the Percentiles for Delphi Sub-scales provided by California Academic Press. The Percentiles is based on samples taken from 781 American college students in 1989-90. The low-score achievers here refer to those who fell in the first group.

[29]In the questionnaire, students were to mark a 1-10 scale to show their levels of satisfaction or agreement with the given statements.　To process data analysis, the 1-10 scale was converted to different scores as shown in Appendix C.

Analysis	.60	.89	1.500	4	.208
Evaluation	1.20	1.92	1.395	4	.235
Inference	.80	1.30	1.372	4	.242
Deductive reasoning	.80	.84	2.138	4	.099
Inductive reasoning	1.20	1.92	1.395	4	.235

P-values are significant at the 0.05 level (2-tailed).

Table 3. Level of Improvement Made in Critical Thinking Skills

Questions	Total	Mean	s.d.	Min.	Max.
c25.3 analysis	512.7	46.61	24.07	5.3	75
c25.2 deductive reasoning	492.6	44.78	26.97	5.3	100
c25.1 inductive reasoning	433.7	39.43	28.23	5.3	100
c25.5 evaluation	402	36.55	27.56	5.3	75
c25.4 inference	393.8	35.80	24.34	5.3	75

To further investigate whether their English proficiency was related to their critical thinking skills, Pearson Correlation was run to see the correlation between their TOEIC-bridge scores and their CCTST pretest or posttest scores.   It was found that students' language proficiency was not related to the acquisition of their critical thinking skills. As shown in Table 4,[30] there was no significant correlation between their TOEIC-bridge and their CCTST posttest or between their TOEIC-bridge and their pretest.

Table 4. Pearson Correlation: TOEIC-bridge and CCTST Pretest and Posttest

		TOEIC	CCTST posttest	CCTST pretest
TOEIC	Pearson Correlation	1.000	-0.005	.214
	Sig (2-tailed)	.	.989	.528
	No.	11	11	11
CCTST posttest	Pearson Correlation	-0.005	1.000	.212
	Sig (2-tailed)	.989	.	.532
	No.	11	11	11
CCTST pretest	Pearson Correlation	.214	.212	1.000
	Sig (2-tailed)	.528	.532	.
	No.	11	11	11

---

[30]Among the 12 students, 11 scored from 144 to 168 in the TOEIC-bridge test.   One student got a test waiver because she scored 520 on TOFEL-ITP so she was not included in Pearson Correlation.

Second, it was noted that the relationship between students' critical thinking disposition (CTD) and critical thinking skills (CTS) are pretty weak. According to the bonus-point record and the teaching log, [31] those who showed eminent dispositions toward critical thinking made no differences in the CCTST pretest or posttest. Those who were open-minded, inquisitive and confident in challenging the answers and sharing thoughts were awarded with stickers to claim for bonus points at the end of the semester. Among the top five students who got the most extra bonus, three were from the low-score-achiever group and two from the high-score-achiever group. The one who was disposed to use critical thinking the most, surprisingly, scored the lowest in the CCTST posttest. This finding was in conformation to what some researchers had suggested (Coluceiello, 1997; Facione & Facione, 1997, Yang and Chou, 2008):[32] "The correlation between CTD and CTS has been fairly weak in college students" (Young and Chou, p. 667).[33]

Another finding is that students became more assertive with critical thinking and the importance of developing critical thinking skills. From the individual student interviews, a few consensuses were reached when students responded to the question: "What have you learned from this course?" First, they realized that developing critical thinking was useful to their future career or advanced study. Second, they acknowledged the importance and necessity to apply critical thinking in different domains of learning. Last of all, they acknowledged they became more comfortable with and confident in asking "why" and "how."

Finally, it was found that students highly agreed they benefited from guided in-class discussion in developing critical thinking (M=75). In the questionnaire, when responding to the multiple-choice questions (Q22 & Q24) 'What is the activity that helped me the most in learning?" and "What is the activity that helped me develop critical thinking the most?" 10 out of 12 students chose "guided in-class discussion." Besides, students highly agreed to the statements "In-class discussion

---

[31] I wrote down my observations of students' responses, comments, questions, and their interactions with their peers and me in the teaching log right after each teaching session.

[32] Colucciello, M. L. "Critical Thinking Skills and Dispositions of Baccalaureate Nursing Students—A Conceptual Model for Evaluation," *Journal of Professional Nursing*, Vol. 13 (1997), pp. 236-245; Facione, N. C. & Facione, P. A. *Critical Thinking Assessment in Nursing Education Programs: An Aggregate Data Analysis*. Milbrae, CA: The California Academic Press, 1997; Yang Y. T. & Chou, H.A, op. cit., (2008).

[33] Yang Y. T. & Chou, H.A, op. cit., (2008).

helped me understand the reading assignment," and "In-class discussion helped me explore the depth of my thinking" (Table 5).

Table 5. Level of Satisfaction with in-Class Discussion

Questions	Total	Mean	S. d.	Min.	Max.
18 In-class discussion helped me understand the reading assignments.	880	80.00	33.62	15	100
19 In-class discussion helped me explore the depth of my thinking.	824.8	74.98	33.79	15	100
21 I like the way in-class discussion is conducted	811	73.73	30.93	5.3	100
20 The level of participation in in-class discussion. (10 means "very actively" and 1 means "very inactively").	529.9	48.17	31.28	5.3	100

However, as to the self-directed learning activities—"learning log," and "group presentation," the means for level of agreements in Q1 "Answering questions in the learning log help me cultivate critical thinking" and Q16 "group presentation helps me improve in learning" are 62.95 and 58.41 respectively.   Though students fairly agreed that learning log was a good learning activity (M=63.73) and it could help them bring up perplexing questions (M=64.46), the level of agreement is fairly low in responding to Q2 (M=37.02) which indicated they didn't quite understand the questions listed in the learning log.   Ironically, they didn't agree to the statement that the questions were difficult to answer (M=27.94) (Table 6). It seemed that the students were self-contradictory regarding this issue. A further explanation on this issue will be continued in Discussion.

Table 6. Level of Satisfaction with Learning Log

Questions	Total	Mean	s. d.	Min.	Max.
05 I can bring up perplexing questions through learning log.	644.6	64.46	34.86	0.8	100
08 Learning log is a good learning activity.	701	63.73	32.46	5.3	100
01 Generally speaking, answering questions in the learning log helped me cultivate critical thinking.	692.4	62.95	24.20	29.9	100
04 Learning log helped me understand the reading assignments.	643.2	58.47	32.52	0.8	100
07 I took the questions seriously.	608.9	55.35	32.55	5.3	100
02 I understood the questions.	407.2	37.02	32.41	0.8	100
03 Please indicate the level of difficulty in answering the questions (10 means "very difficult" and 1 means "not difficult at all").	307.3	27.94	21.24	5.3	75

There was also a contradiction in their responses to the questions regarding "group presentation."   Though students fairly agreed that they cooperated pleasantly

with their peers (M=64) and the work load was fairly shared (M=66.6), the level of agreement in willingness to conduct group presentations in the future is comparatively low (M=42.78) (Table 7). A further discussion will be also continued in Discussion.

Table 7. Level of Agreement/Satisfaction Regarding Group Presentation

| Questions	Total	Mean	s. d.	Min.	Max.
09 We had scheduled meetings before the group presentation.	1026.9	93.35	15.66	51.9	100
11 We shared the workload fairly.	732.6	66.60	29.76	0	100
12 We cooperate pleasantly.	704	64.00	35.68	5.3	100
16 Group presentation helps me improve in learning.	642.5	58.41	31.96	15	100
13 Please indicate the level of leaning improvement through group presentation . (10 means "quite a lot"; 1 means "very little.")	585.4	53.22	25.90	15	100
14 I am satisfied with our group presentation. (10 means "highly satisfied; 1 means "not satisfied at all".)	559.3	50.85	19.79	15	75
17 I will be glad to conduct group presentations in the future.	470.6	42.78	27.21	5.3	100

IV. Discussion

The findings in this study first support that literature reading did help the weak thinkers improve their overall critical thinking and especially demonstrate better skills in analysis. Generally speaking, most of them are inexperienced readers who had been rarely exposed to literature reading. In the beginning, they were exercising their prior knowledge and experiences in L1 acquisition in reading the English texts. This could be in evidence from their learning logs and the essay-question reports in both of which they tended to summarize the plot, describe the characters, repeat what had been said in class or bring in their personal reflections though those were often not related to the text. These problems were commonly found in those literature introduction classrooms (Bergstrom, 1983)[34] and also in the one of this study. However, along with the time and with the help of teaching/learning activities, some students gradually fostered better thinking patterns and habits and some could make

---

[34]Bergstrom, R. F. "Discovery of Meaning: Development of Formal Thought in the Teaching of Literature," *College English,* Vol. 45, No. 8 (1983), pp.745-755.

in-depth interpretation or inference. For example, the following are some excerpts of W's[35] answers in his learning log.

W's 1st log entry: (Story: "The Use of Force")
Question: What do you think this story is about? How did the writer present the message(s) in the story?

Method vs. Love

Cure details   father & mother's take care
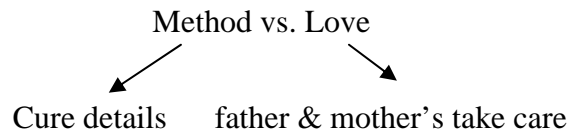
W wrote very little here due to his language problem.   Actually he intended to say: The doctor's treatment as observed from the detailed description was in contrast to the way the parents took care of their little daughter, the patient.   But he didn't explicitly explained HOW their attitudes toward the little girl were different, nor give precise key adjectives to describe the nature of their attitudes.   Besides, W was not aware that "Method" was not an affective noun to be used in contrast to "Love."

W's 2nd log entry: (Story: "The Lottery")
Question: What do you think this story is about? How did the writer present the message(s) in the story?
Justice → "You didn't give him time enough to take any paper he wanted.
I saw you. It wasn't fair."

W thought Jessie's statement, as the quotation cited here, was in evidence of her sense of justice.   But he failed to read it in the context.   Tessie was acting like a spoiled child, accusing the host of failing his duties in hope that the lottery could have been re-drawn.   So W cited the wrong sentence.   If he could have chosen Tessie's last cry—"It's not fair"(a present-tense sentence, symbolic of her awareness of injustice in the system), he might have found a good example to support his observation.   Similar mistakes in analytical thinking were found in his 3rd log entry. But in his 4th log entry, he started to exercise his critical thinking.

W's 4th log entry: (Poem: "Aunt Jennifer's Tigers")

---

[35]W scored the lowest in the CCTST pretest but he made the most improvement in the posttest. He was grouped in the "low-score achievers" in this study.

Question: In your opinion, what is the message the poet wants to convey to the readers? What is the theme of the poem? How does the poet present such a theme in the poem?

1. Everyone should have his own view, stand, claim or thought.

2. Theme: Proud of yourself

3. One should "prance across a screen" → just like prance in life roadway
   And "pace in sleek chivalric" → follow justice

4. Power → control oneself → give them bravery
   ↘ Maybe let someone more stronger
   (they do not fear the men beneath the tree)

Compared with his former entries, W wrote more and his ideas were more explicit this time. He observed that everyone, regardless of sex, is entitled to equal rights in expressing his/her views and thus, once autonomy is granted, one can be strong and brave to "prance" on his/her life journey. He detected some key words to support his observation and he could synthesize related details to make inference of the themes. When it comes to his 7th log entry, he was logical in organizing his ideas.

W's 7th log entry: (Play: "Trifles")

Question: In your opinion, what is the message the playwright wants to convey to the readers? What is the theme of the play? How does the playwright present such a theme in the play?

Theme: The differences between men and women

Men → aggressive and brash   Women: sensitive, considerate, attentive

In the play, men laughed at what women talked about (cared). Mrs. Wright was inhibited by her husband. She was like a bird but her husband killed the bird; finally she killed him. Mrs. Hale and Peters helped her because they knew her thought.

W started with a statement of the theme, followed by a series of key words to show the contrast between men and women. Then he stated his observation that married women were oppressed by the male power. He summarized the plot: Mrs. Wright, to justify the death of her beloved bird, killed her husband as she fought back. Finally he briefly concluded with the reason why the other two married women helped her. Generally speaking, his understanding of the text and observation of the characters' interactions were correct and he could reason out the causal relationship

between the actions. In this log entry, he demonstrated better abilities in analysis, inference and evaluation.

In this study, the empirical evidence testified that the weak thinkers made noted improvement in critical thinking through reading/appreciating literary works.   This result is similar to that obtained in 崔's attempt to improve critical thinking through reading in "Freshman English." She found that "the intervention of critical thinking has demonstrated an effect on students' thinking patterns" (2005, p. 11).[36]

In some researches, it has been suggested that it may take longer than one semester to cultivate critical thinking skills or disposition toward critical thinking (Yang & Chou, 2008)[37] because during the learning process, students need to go through the stages of "acquisition," "making inferences automatic," and "transfer" (Perkins, 1987)[38] which demand a long period of time and lots of practices to alter their modal perceptions and behaviors.   Though the low-score achievers were found making improvement in this study, a longitudinal study should be conducted in the future to see if high–score achievers could make any statistically significant improvement in critical thinking.

As to the 2nd research question whether students' English proficiency relates to their acquisition of critical thinking skills, the finding showed the answer was negative.   Logically, it seemed that those students who were proficient in English should understand the reading texts better.   Then with better understanding of the text, they could see the relatedness between the details, make more effective inference and evaluation and therefore develop critical thinking skills more successfully than the low-proficient students.   However, the findings showed that weak thinkers might have low English proficiency but their level of English proficiency was not related to their performance in the CCTST.

Then, can reading literature help them develop dispositions for critical thinking? The answer is still pending due to two reasons. First, it is the problem with the time of learning. As explained earlier, developing critical thinking dispositions takes time.   It is reasonable to hypothesize that the longer the learning process extends, the easier it is for students to display their dispositions toward critical thinking.   Second, in this study no measurement was adopted to assess students' dispositional characteristics

---

[36] 崔正芳，op. cit.(2005).

[37] Yang, Y. T. & Chou, H. A., op. cit.(2008).

[38] Perkins, D. N. "Thinking Frames: An Integrative Perspective on Teaching Cognitive Skills," in J. B. Baron & R. J. Sternberg (Eds), *Teaching Thinking Skills—Theory and Practice*. New York, NY: W H Freeman/Times Book, 1987, pp. 41-61.

except the responses collected regarding this issue during the individual student interviews and the observations jotted down in the teaching log. The interviewees were assertive they became more inquisitive, open-minded, diligent in locating relevant information and prudent in making judgments. However, their responses will be more supported and valid if, as Ku suggested (2009),[39] a more creditable measure like Halpern Critical Thinking Assessment Using Everyday Situations (2007),[40] one that allows responses in both multiple-choice and open-ended format, had been adopted in this study. Therefore, it is highly hoped that with more research fund, a longitudinal study can be conducted to further investigate this question in the future.

Finally, students found that guided in-class discussion helped them the most in developing critical thinking. This result is within expectation as the success of this activity lies in three factors: 1) the usage of Socratic questioning skills to help students elaborate their thoughts; 2) an experienced teacher to provide students with a safe environment for critical inquiries; and 3) the choices of the reading texts to provide students with believable contexts for developing critical thinking and problem-solving skills. These three factors as strongly recommended by some researchers to be embedded into curriculum did improve the efficacy of critical thinking instruction. In contrast to the self-directed activities like group presentation and learning log, guided in-class discussions helped students aware of their underlying assumptions and help them clarify their knowledge, comprehension and cultivate abilities in making analysis, synthesis and application. In this way, the students gradually learned to detect the weaknesses or fallacies in their rationales and nurture increasingly sophisticated observations.

However, students didn't quite understand the purpose of the teacher's questions. This resulted in some contradictions in the self-assessed questionnaire. One is regarding their responses to the level of difficulty in the learning log questions. The other is about their willingness to conduct group presentation. During the student interviews, when the first contradiction was mentioned, most students said the questions were not difficult to answer as they had been familiar with these types of questions in Chinese context for years. But they felt perplexed or a bit frustrated when their answers were underlined with marks such as the following:

---

[39]Ku, K. Y. L. "Assessing Students' Critical Thinking Performance: Urging for Measurements Using Multi-response Format," *Thinking Skills and Creativity*, Vol. 4 (2009), pp. 70-76.

[40]Halpern, D. *Halpern Critical Thinking Assessment Using Everyday Situations: Background and Scoring Standards*. Claremont, CA: Claremont McKenna College, 2007.

Students' statements:	My marks:	Remarks:
The doctor was disappointed with the family's bad attitude. (Story: "The Use of Force")	What do you mean by "bad attitude"? Please cite a few examples to illustrate your ideas.	Actually the student has read between the lines. Her statement was correct in a sense. I just wanted her to locate appropriate details for support.
Doctor → patient He tried his best to save the girl's life and he loved her as his family. (Story: "The Use of Force")	Was the doctor still patient with the girl at the end?	I wish the student could see the doctor's psychological transformation (from patient to impatient) along with his interactions with the little girl.
Tessie → courageous She was courageous to say she think it is not fair. (Story: "The Lottery")	Or did she say it because of fear of death? How would you define "courageous"?	I would like the student to see how "courage" is defined in different contexts.

Most of the time, they thought the answers were self-explanatory, but when I challenged their thoughts, they realized they didn't fully answer the questions or found it difficult to refute my comments or defend their stands with good support. Therefore, they concluded with the statement "I didn't quite understand the questions."

When I explored the causes of the second contradiction during the interviews, three major causes emerged from their responses: "It's too time-consuming"; "Your questions made me feel difficult to answer and that made me feel uneasy in front of the class"; "It's hard to find time meeting with all group members." These causes made them hesitate to do group presentation in the future. Their answers are in evidence of the facts: 1) They were still interpreting questions by exercising their prior L1 knowledge and experiences; 2) More dispositional characteristics such as confidence and seeking-truth are yet to be developed in students; 3) They were aware they needed to exercise more analytical thinking to make their answers well supported. In a sense, they were still at the transitional stage of developing critical thinking.

V. Conclusion and Implications

The study has discussed the efficacy of developing critical thinking skills and disposition in college students through literature reading.　In general, the findings supported the methodology of this course and provided some insight into the research questions.　Although it is found that students may resort to their past learning habits, experiences or knowledge to solve problems in a new situation, if they were equipped with critical thinking skills, they would be confident in adapting to a new situation or even locating innovative solutions to the new problems. Albert Einstein said, "The significant problems we face cannot be solved at the same level of thinking we were at when we created them."[41] Facing the rapidly changing 21st century, undergraduates can no longer resort to old thinking patterns for solutions. To better prepare themselves for the workplace of the 21st century, college students need to develop critical thinking by osmosis so that they can "learn to know," "learn to do," "learn to live together," "learn to be" and "learn to change" (UNESCO, 1996).[42] Therefore developing critical thinking is a vital objective in higher education and to achieve this aim, using literature reading to encourage students to think critically is a highly feasible approach.

This study also found a few implications for future pedagogy.　First, more time should be allocated for students to respond to the questions marked by the teacher in their learning log sheets. A response sheet may be designed and attached so that they can further explore the depth of their thoughts and challenge themselves.　Second, students need to be alerted to the importance of group presentation.　Group presentation does not merely help cultivate their critical thinking but also enhance their teamwork skills and employability.　Third, if possible, a series of follow-up courses should be designed to develop critical thinking in different frameworks of content knowledge. In this way, the momentum of students' critical thinking can be sustained and further exalted over a long-term process.

---

[41] Cited from Inspirational Problem Solving Sayings. Retrieved August 4, 2009 from http://quotations. about.com/cs/inspirationquotes/a/ProblemSolvi2.htm.

[42] UNESCO. *Learning: The Treasure Within. Report to UNESCO of the International Commission on Education for the Twenty-first Century*, 1996.

VI. Limitations

There are a few limitations in this study.   First, no control group was adopted due to the limited number of students enrolled in the English Honors program.   Only one literature elective has been offered per semester since the Honors program was launched in 2005.   Second, the number of participants in this study was too limited to be representative.   Finally, a standardized assessment on students' disposition toward critical thinking should have been adopted to make this study more complete.

References

Atkiinson, D. "A Critical Approach to Critical Thinking in TESOL," *TESOL Quarterly*, No. 31 (1997), pp. 71-94.

Association of American Colleges and Universities. *Liberal Education Outcomes: A Preliminary Report on Student Achievement in College.* Washington, DC: AAC&U, 2005.

Association of American Colleges and Universities. *How Should Colleges Assess and Improve Student Learning? Employers' Views on the Accountability Challenge.* Washington, DC: Peter D. Hart Research Associates, 2008. Retrieved July 25, 2009 from http://www.eric.ed.gov/ERICDocs/data/ ericdocs2sql/content_ storag e_01/0000019b/80/3c/73/c8.pdf

Bergstrom, R. F. "Discovery of Meaning: Development of Formal Thought in the Teaching of Literature," *College English*, Vol. 45, No. 8 (1983), pp.745-755.

Bloom, B., Englehart, M, Furst, E., Hill,W. & Krahtwohl, D. *Taxonomy of Educational Objectives: The Classification of Educational Goals. Handbook 1: Cognitive Domain.* New York: Longmans Green, 1956.

Braun, N. M. "Critical Thinking in the Business Curriculum," *Journal of Education for Business,* Vol. 79 (2004), pp.232-236.

Brunt, B. A. "Critical Thinking in Nursing: An Integrated Review," *Journal of Continuing Education in Nursing,* Vol. 36 (2005), pp. 60-67.

Caine, R. N. & Caine, G. *Making Connections: Teaching and Human Brain.* Alexandria, VA: ASCD, 1991.

Chang, C. F. *A Case Study of Taiwanese College Students' Participation Behaviors and Critical Thinking in Both Face-to-face and Computer-mediated Communication Modes.* NSC93-2411-H-009-02(2006). Retrieved August 12, 2009 from http://ir.lib.nctu.edu.tw/bitstream/987654321/20410/1/932411H00902 1.pdf

Chau, J. P. C., Chang, A. M., Lee, I. F. K., Ip, W. Y., Lee, D. T. F. & Wootton, Y. "Effects of Using Videotaped Vignettes on Enhancing Students' Critical Thinking Ability in a Baccalaureate Nursing Programme," *Journal of Advanced Nursing*, Vo. 36, No. 1 (2001), pp. 112-119.

Chen, L. H. "The Soul-searching of Critical Thinking Teaching in Elementary School Social Studies," *Contempora Education*, Vol. 15 (1989), pp. 121-135.

Cheng, S. F., Sheu, S., Chang, P. R., Hsieh, H. F., Shen, M. H., Tsai, F. J. "Teachers' Views of Teaching Critical Thinking in the 2-year RN to BSN Program in Taiwan: A Focus Group Study," *18th International Nursing Research Congress Focusing on Evidence-Based Practice*. Vienna, Austria Center Vienna, 2007.

Chiodo, J. J. & Tsai, M. H. "Taiwanese Students in American Universities: Are They Ready for Critical Thinking?" *College Student Journal*, Vol. 29, No. 3 (1995), pp. 374-382.

----- "Secondary School Teachers' Perspectives of Teaching Critical Thinking in Social Studies in the Republic of China," *Journal of Social Studies Research*, Fall, 1997. Retrieved July 10, 2009 from http://findarticles.com/p/ articles/mi_ q a3823/is_199710/ai_n8768651/.

Colucciello, M. L. "Critical Thinking Skills and Dispositions of Baccalaureate Nursing Students—A Conceptual Model for Evaluation," *Journal of Professional Nursing*, Vol. 13 (1997), pp. 236-245.

Critical Thinking and Literature-Based Reading. Report. Madison, WI: The Institute for Academic Excellence, 1997. Retrieved July 8, 2009 from http://www.eric.ed.gov/ERICWebPortal/custom/portlets/recordDetails/detailmini .jsp?_nfpb=true&_&ERICExtSearch_SearchValue_0=ED421688&ERICExtSear ch_SearchType_0=no&accno=ED421688

Davidson, B. "Critical Thinking Faces the Challenge of Japan," *Inquiry*, Vol. 14, No. 3 (1998), pp. 41-53.

Day, R. "Teaching Critical Thinking and Discussion," *The Language Teacher*, Vol.27 No. 7 (2003), pp. 25-27.

Facione, P. A. *Critical Thinking: What It Is and Why It Counts*. Milbrae, CA: The California Academic Press, 2007.

Facione, N. C. & Facione, P. A. *Critical Thinking Assessment in Nursing Education Programs: An Aggregate Data Analysis*. Milbrae, CA: The California Academic Press, 1997.

Facione, P. A. & Facione, N. C. *The CCTDI: A Disposition Inventory*. Milbrae, CA: The California Academic Press, 1992.

Facione, P. A., Sanchez, (Giancarlo) C. A., Facione, N. C., & Gainen, J. "The Disposition toward Critical Thinking," *Journal of General Education*, Vol. 44, No. 1 (1995), pp. 1-25.

Fang, R. J., Lin, C. C., Yang, H. J. H., Lee, C. J., Tsai, H. L., & Tsai, T.S. "A Study to Increase the Critical Thinking and Problem Solving Abilities by Web-based Learning," *Proceedings of the 8th WSEAS International Conference on*

Multimedia Systems and Signal Processing, 2008.　Retrieved June 30, 2009 from http://portal.acm.org/citation.cfm?id=1416424.

Friedman, T. *The World Is Flat: A Brief History of the Twenty-first Century*. New York, NY: Farrar, Straus & Giroux, 2005.

Halpern, D. "Teaching Critical Thinking for Transfer across Domains: Dispositions, Skills, Structure Training, and Metacognitive Monitoring," *American Psychologist*, Vol. 53 (1998), pp. 449-455.

Halpern, D. *Halpern Critical Thinking Assessment Using Everyday Situations: Background and Scoring Standards.* Claremont, CA: Claremont McKenna College, 2007.

Huang, N. & Lee, D. "A Discourse Analysis of Asynchronous Discussion Board on Students Critical Thinking," *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare, and Higher Education,* 2004, pp. 708-713. Retrieved July 8, 2009 from http://www.editlib.org/p/11404.

Kegan, R. *In Over Our Heads: The Mental Demands of Modern Life*. Harvard University Press: Cambridge, 1994.

Klaczynski, P. A. "Framing Effects on Adolescent Task Representations, Analytic and Heuristic Processing, and Decision Making: Implications for the Normative/descriptive Gap," *Journal of Applied Developmental Psychology*, Vol. 22 (2001), pp. 289-309.

Ku, K. Y. L. "Assessing Students' Critical Thinking Performance: Urging for Measurements Using Multi-response Format," *Thinking Skills and Creativity*, Vol. 4 (2009), pp. 70-76.

Kubota, R. "Japanese Culture Constructed by Discourse: Implications for Applied Linguistics Research and ELT," *TESOL Quarterly*, Vol. 33 (1999), pp. 9-35.

Lazere, D. "Critical Thinking in College English Studies," *ERIC Digest*. ED 284275, 1987. Retrieved June 20, 2009 from http://www.eric.ed.gov/ERICWebPortal/con tentdelivery/servlet/ERICServlet?accno=ED284275

Liaw, M. L. "Content-Based Reading and Writing for Critical Thinking Skills in EFL Context," *English Teaching and Learning*, Vol. 31, No. 2 (2007), pp. 45-87.

Long, C. J. "Teaching Critical Thinking in Asian EFL Contexts: Theoretical Issues and Practical Applications," *Proceedings of the 8th Conference of Pan-Pacific Association of Applied Linguistics*, 2003. Retrieved July 9, 2009 from http://www.paaljapan.org/resources/proceedings/PAAL8/pdf/pdf022.pdf.

McBride, R. E., Xiang, R., Wittenburg, D. & Shen, J. An Analysis of Preservice Teachers' Disposition toward Critical Thinking: A Cross-cultural Perspective," *Asian-Pacific Journal of Teacher Education*, Vol. 30 (2002), pp. 131-140.

Paul, R. & Elder, L. "Critical Thinking: The Art of Socratic Questioning," *Journal of Developmental Education*. Vol. 31, No. 1 (2007), pp. 36-37.

-----   "Critical Thinking: The Art of Socratic Questioning, Part III," *Journal of Developmental Education*. Vol. 31, No. 3 (2008), pp. 34-35.

Perkins, D. N. "Thinking Frames: An Integrative Perspective on Teaching Cognitive Skills," in J. B. Baron & R. J. Sternberg (Eds), *Teaching Thinking Skills—Theory and Practice*. New York, NY: W H Freeman/Times Book, 1987, pp. 41-61.

Schmit, J. S.   "Practicing Critical Thinking through Inquiry into Literature," in J. Schmit (Ed.), *Inquiry and the Literary Text: Constructing Discussions in the English Classroom. Classroom Practices in Teaching English*. Urbana, IL: National Council of Teachers of English, 2002, pp. 117-125.

UNESCO. *Learning: The Treasure Within. Report to UNESCO of the International Commission on Education for the Twenty-first Century*, 1996. Retrieved August 30, 2009 from http://www.see-educoop.net/education_in/pdf/15_62.pdf

Yang, S. C., & Chung, T. Y. "Experimental Study of Teaching Critical Thinking in Civic Education in Taiwanese Junior High School," *British Journal of Educational Psychology*, 2009. Retrieved June 25, 2009 from http://www.ingentaconnect.com/content/bpsoc/bjep/2009/00000079/00000001/art00002?token=004611e3d5a666f3a7b2f7c40726f7c47794c48783c49264f65263a3d4f58762f46b6c.

Yang, Y. T. & Chou, H. A. "Beyond Critical Thinking Skills: Investigating the Relationship between Critical Thinking Skills and Dispositions through Different Online Instructional Strategies," *British Journal of Educational Technology*, Vol. 39 (2008), pp. 668-784.

Yang, Y. T., Newby, T. J., & Bill, R. L. "Using Socratic Questioning to Promote Critical Thinking Skills through Asynchronous Discussion Forums in Distance Learning Environments," *The American Journal of Distance Education*, Vol. 19, No. 3 (2005), pp. 163-181.

Yeh, Y. C. "Nurturing Reflective Teaching during Critical Thinking Instruction in Computer Stimulation Program," *Computers and Education*, Vol.42, No. 2 (2004), PP. 181-194.

張玉成，〈國小語文科實施批判思考教學之實驗研究〉，台北師院學報，第 5 卷，
　　1992 年。

郭麗珠，〈國小社會科實施批判思考教學之實驗研究〉，國立台北師範學院課程
　　與教學研究所碩士論文，2002 年。

崔正芳，〈大學生英語學習與批判思考能力之相關研究：問題初探〉，NSC
　　93-2411-H-004-043 ， 2005 年 。 Retrieved June 29 ， 2009 ， from
　　http://nccuir.lib.nccu.edu.tw/bitstream/140.119/5260/1/932411H004043.pdf

陳錦蓮，〈國小兒童哲學方案－批判思考教學之實驗成效〉，台北市立師範學院
　　初等教育系碩士論文，1995 年。

葉玉珠，〈我國中小學學生批判思考及其相關因素之研究〉，國立政治大學教育
　　研究所碩士論文，1991 年。

Appendix A

Questions in the Learning Log

Name: _____   Date: _____
Title of the literary work: _____(Fiction)

1.Pick out at least five phrases or sentences which you think are especially important
   to the story. Briefly describe why you chose each.

2.Who is the most impressive or your favorite character in the story?   What qualities
   does he/she exhibit in the story?   How does he/she exhibit them?   What qualities
   does he/she lack?

3.What do you think this story is about?   How does the writer present the message(s)
   in the story?

4.Your questions:

Appendix B

問卷調查 (中文版)

請勾選(✓)或填寫下列些項目，以 1-10 表示滿意或同意的程度(最滿意或同意為 10 分，覺得很不滿意或不同意為 1 分)，若欲選擇題，請直接在 ＿＿＿上填選答案

L A. Learning Log 學習紀錄單	1	2	3	4	5	6	7	8	9	10
1.概括而言，回答學習紀錄單的問題幫助我培養批判性思考										
2.我了解學習紀錄單上的問題										
3.學習紀錄單上的問題回答的難易度 (10 表很困難，1 表完全不困難)										
4.學習紀錄單幫助我了解指定作業的內容										
5.藉由學習紀錄單，我可將不懂的地方或問題提出來										
6.平均， 我花了＿＿＿ 小時再寫學習紀錄單 a. 1-3 小時　b. 3-5 小時　c. 5-7 小時　d.超過 7 小時										
7.我很認真地寫學習紀錄單										
8.學習紀錄單是個好的教學活動										
B. Group presentation　團體報告 9.在做團體報告前， 我們小組有開會										
10.開會討論的時間大約是＿＿＿ 　a. 1-3 小時　b. 3-5 小時　c. 5-7 小時　d.超過 7 小時										
11.我們能平均分配工作										
12.我們合作愉快										
13.從小組討論，我學習到＿＿ (10 表很多，1 表很少)										
14.對這次小組報告的表現， 滿意度是＿＿＿										
15.做團體報告最困難的是 ＿＿＿＿ 　a. 找時間開會　b. 整合意見　c. 製作 ppt　d. 分配工作　e. 沒想法，討論不出重點　f. 其他										
16.團體報告幫助我學習成長										
17.我以後會樂意做團體報告										
C. In-class Discussion　課堂討論 18.課堂討論幫助我了解指定作業的內容										
19.課堂討論幫助我拓展思考的深度										
20.我參與課堂討論的程度 (10 表參與度很高，1 表參與度很低)										
21.我喜歡課堂討論的方式										
D. General Questions: 22.整體而言， 幫助我學習最多的是 ＿＿＿ 　a. learning log　b. group presentation　c. in-class discussion　d. quizzes										
23.整體而言，這門課幫助我開發 critical thinking (10 表很同意， 1 表很不同意)										

24.整體而言，幫助我開發 critical thinking 最多的是_____ a. learning log b. group presentation c. in-class discussion d. quizzes										
25.就開發 critical thinking 的 5 種能力而言，你的收穫程度是____ (10 表收穫最多， 1 表收穫最少) 25.1 歸納能力										
25.2 演繹能力										
25.3 分析能力										
25.4 推論力										
25.5 評估力										
26.這門課值得開下去										
27.你會向其他同學推薦這門課										
對這門課的建議:										

Appendix C

分數轉換表

Mark in the scale	3	4	5	6	7	8	9	10
Frequency	1	3	19	29	45	64	50	74
Min value	1	2	5	24	53	98	162	212
Max value	1	4	23	52	97	161	211	285
Scores after conversion	1	3	14	38	75	129.5	186.5	248.5
Converted scores after justification (ranged 0~100)	0	0.81	5.25	14.95	29.90	51.92	74.95	100

藉由閱讀文學開發批判性思考

董綺安[*]　　張淑英[**]

摘　要

　　本研究旨在探討藉由閱讀文學作品，協助學生養成批判性思考，以因應二十一世紀職場需求的可行性。本研究在課程設計上結合一些教學策略如小考，學習紀錄單，團體報告，引導性的課堂討論及申論題式的書面報告，來提升學生批判性思考技能與意向。經由比對學生參加加州批判性思考技能測試的前測與後測成績，學生期末問卷調查與學生一對一面談的分析結果，本研究有以下發現：1) 閱讀文學作品可協助在前測低分群的學生有效地提升批判性思考能力，尤其是他們的分析能力；2) 學生的英文能力對他們的前測與後測成績不具任何影響；3) 某些學生肯定閱讀文學作品讓他們開始比較會願意去探索問題，但是這部份需要在將來做長期的追蹤並運用測試來做客觀評估；4) 學生高度肯定引導性的課堂討論，認為這項教學策略在協助開發他們批判性思考上最具成效。

關鍵詞：批判性思考、文學閱讀、教學策略、英語外語教學

[*] 逢甲大學語言中心專任講師。
[**] 逢甲大學語言中心專任講師。