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Cultivation of Critical Thinking Disposition via Asynchronous Online Discussion

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Introduction and Purpose

Critical thinking (CT) is an important component of learning. Effective instruction in teaching CT should include the development of critical thinking skills (CTS) and the nurturing of critical thinking dispositions (CTD) (Facione, Facione, & Giancarlo, 2001). An asynchronous online forum which affords students the time for thoughtful analysis, comparison, reflection, and composition as their discussion of an issue evolves is a potentially cost-effective and flexible tool for educators to use in fostering class discussion and enhancing students' CTS and CTD. While much attention is being focused on developing the discrete cognitive skills (e.g., analysis and self-regulation) associated with CT via asynchronous online discussions, its affective or dispositional side (e.g., being open-minded and analytical) is at an embryonic stage, and the exploration of this topic has only just begun. The findings of Yang, Newby, and Bill's (2005) study have suggested that using structured asynchronous discussions with Socratic questioning could be an effective pedagogy in enhancing students' CTS. However, the effectiveness of using asynchronous online discussions with Socratic questioning to enhance students' CTD is unanswered. Thus, the goal of this research is to examine whether students' CTD will be improved after they participate in Socratic dialogues, as modeled and facilitated by the instructor during online discussions.

Method

The research design was a pre/post quasi-experimental design with a comparison group. The course used in this research is a general education course at a large university in Taiwan, which had two sections: section I (comparison group) and section II (experimental group). They had the same course content/format and instructor, but only differed in terms of instructional treatment used. 146 complete sets of data were collected (75 and 71 in the comparison and the experimental groups, respectively). The independent variable was the teaching and modeling of Socratic dialogues via the asynchronous online discussions. CT questioning was taught and practiced at the beginning of the semester, and students practiced these questioning techniques via asynchronous online discussions throughout the semester in the experimental group. The dependent variable was CTD, measured by the California Critical Thinking Dispositions Inventory (CCTDI) (Facione, Facione, & Giancarlo, 2001). The pre-CCTDI was used as a covariance in this study when comparing the post-CCTDI scores between the control and the experimental groups.

Results and Conclusion

The pre/posttest CCTST and CCTDI scores for the control and the experimental groups are summarized in Table 1.

Table 1: Pre/post CCTST and CCTDI scores.

	Comparison Group		Experimental Group	
	Mean	SD	Mean	SD
Pre-CCTDI	265.64	27.52	266.20	28.31
Post-CCTDI	267.68	31.61	297.13	39.70

The result of one-way ANCOVA, $F(2,141)=59.96$, $p=.00$, indicates that the post-CCTDI score of the experimental group was significantly higher than that of the control group. That is, students' CTD could be enhanced via the teaching and modeling of Socratic dialogues on a series of asynchronous online discussions.

In addition, it is interesting to note that at the beginning of the semester, the percentage of different levels of students' CTD scores was 68% in the low CTD, 32% in the medium CTD, and zero in the high CTD. The proportions of the students in this study are significantly different than those of the American students where the CTD scores are equally distributed in the three CTD levels (Facione, Facione, & Giancarlo, 2001). The results might be due to the different learning styles and learning environments in the West and East. For example, Asian students typically learn through rote memorization and rare interactive learning activities in classrooms. The Asian learning environment is typically highly structured and students are reluctant to reveal what they know. Further research should investigate whether students' CTD is different in different cultures and whether the relationship between CTS and CTD is also different. How CTS and CTD interact remains a perplexing question. Understanding this relationship will greatly help instructors better facilitate students' CT.

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