INTRODUCTION

In 2001, the Taiwan Ministry of Education (TMOE) inaugurated a new k-9 curriculum. At the core of this curriculum are ten key competencies that we wish all children to possess. Inquiry and research, one of the ten key competencies, is quite foreign to most school teachers in Taiwan. In 2010, the TMOE inaugurated another k10-12 curriculum for vocational education. Project study is the core of the school based curriculum and through this course we hope students be able to transmit knowledge from school to work. Even project practice taught at undergraduate level, collaborative learning and learner centered teaching

ABSTRACT

The core value of Web 2.0 lies in its potential for building technologies that are open, decentralized, and shared. This paper designs group activity to facilitate knowledge building and move on learning management system to web 2.0 paradigms with computer supported collaborative learning in a small group. The “give-take” metaphor for knowledge construction in a small group discourse only interprets the solo voice phenomenon in asynchronous forums. Tumultuous, parallel, and connected voices in synchronous conferencing need alternative metaphors to understand the self and the other in a personified way. This paper represents discourse evidence of emerging meaning making, expertise commentary, self-identity, and collective confirmation as a process in small group collective knowledge-building.
strategy are the important issue in a project small group at all educational level.

Designing learning activities for online courses on “Research Methodology” usually involves tools to enable group discussions. Such learning activities emphasize openness, dialogue, and consensus building through the exchange of ideas. Within the talking-listening space afforded by a learning activity, the perception of intersubjectivity that helps individuals to understand self and others’ intention and to develop shared knowledge should be investigated. In this study, we focus on intentionality as the ontology of source of knowledge among members in such a community of knowledge-building (Bereiter, Scardamalia, Cassells, & Hewitt, 1997; Biggs, 1992; Gan & Zhu, 2007; Koschmann, 1996; Nonaka & Konno, 1998; Scardamalia & Bereiter, 1996b; Stahl, Koschmann, & Suthers, 2006; Weinberger, Reiserer, Ertl, Fischer, & Mandl, 2005).

Increasingly, studies on computer-supported collaborative learning (CSCL) are moving away from meaning-making through the use of reading and writing strategies toward perception of intersubjectivity as a dynamic process of polyphony. Polyphony is a complex phenomenon that goes beyond talking-listening and giving-taking. Educators arrange pre-planned activities to improve the efficiency of knowledge telling, such as video presentations, issue follow-up, problem formulation, project planning, referring to literature, critiquing scientific writing, knowledge sharing, and giving/modifying commentary. These activities enhance learners’ productive writing by promoting self-understanding, deeper learning, self-reflection, and feedback evaluation. Compared to the traditional approach, these activities are more effective for helping learners achieve higher academic performance, accomplish in-depth problem analysis, gain self-confidence, and acquire better reading comprehension (Scardamalia, Bereiter, & Steinbach, 1984; Scardamalia, Bereiter, McLean, Swallow, & Woodruff, 1989; Scardamalia, Bereiter, Brett, Burtis, Calhoun, & Smith, 1992; Scardamalia, Bereiter, & Lamon, 1994; Scardamalia & Bereiter, 1991, 1996a, 1996b).

Unfortunately, studies on CSCL have not been successful to disclose knowledge convergence in group process. The evaluation methods used to analyze CSCL in the past decade have met with new roadblocks. First, although effect studies with pre- and post-tests determine variances and learners’ changed cognition, they do not reveal the group’s shared cognition (Stahl, Koschmann, & Suthers, 2006; Dillenbourg, Baker, Blaye, & O’Malley, 1996). Second, reciprocal teaching studies employing discourse analysis to classify self-explanation and self-other explanation attempt to investigate the degree of improved learning outcome; however, no manifest relationship between talkers’ performance and listeners’ elaborate explanation has been observed. The only relation we can establish is that talkers’ performance is related to talkers’ elaborated explanation. Such studies do not wholly or partially explain how group members connect with each other’s ideas and thinking. In this study, we aim to track group process and arrange dialogue to enhance subjectivity and intersubjectivity within a small group.

Hermans’s dialogical self theory (Hermans, Kempen, & Loon, 1992) and Bakhtin’s polyphony theory (1981) have made important contributions to interpret the perception of intersubjectivity. To extend the literature on CSCL, dialogical self and polyphony, the authors of this study explored how a small group collaboratively negotiated the project based scientific writing for knowledge building. In using a case-study approach, we hoped to reveal the discourse process underlying authentic project work in an online course setting. The following questions guided the study: (1) How does the group member negotiate individual difference and select research topic with life experience and common consciousness within group? (2) How does the dialogical self socially construct knowledge and set self position to solve their own problems after teacher’s review and feedback?