Chapter 24

Scaffolding Role of Computer–Supported Collaborative Learning Environment on Collaboration and Academic Literacy:
Possibilities and Challenges

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ABSTRACT

Drawing on knowledge building and social cognitive perspectives on academic literacy, this chapter argues for a design framework of Computer-Supported Collaborative Learning (CSCL) environment featured by Knowledge Forum for Chinese tertiary business English students. An initial design study was reported to evaluate the design effect of CSCL environment on collaboration and academic literacy and to further investigate factors facilitating academic literacy development. Four intact classes with 102 Year One students participated in a 12-week project learning in two different learning environments, namely Computer-Supported Collaborative Inquiry Learning (CSCIL) and Regular Project-Based Learning environment (RPBL). Data was obtained from exam results, survey, essay writing quality, and focus group interviews. Four dimensions of academic literacy were identified and rated. MANOVA analyses showed significant main effects of environment indicating that CSCIL groups have significant higher gains in conceptual understanding and argumentative construction. Contrastive analyses of focus group interview data identify the interplay of social, cognitive, and technological dynamics that facilitate collaborative conceptual understanding and argumentative construction. Implications and further design issues are also discussed.

INTRODUCTION

The purpose of this chapter is to address key problems in higher education concerning how to design and evaluate a collaborative inquiry learning environment mediated by technology to enhance collaboration inquiry and academic literacy. Specifically, the chapter reports on a principle-based design of computer-supported collaborative learning environment for Chinese tertiary business students.

Recently, educational institutions at all levels all over the world have put premium on the integration of Information and Communication Technologies (ICTs) with innovative pedagogy in line with the emerging educational goals of fostering lifelong learning, collaborative inquiry, and knowledge creation (Bereiter, 2002). Use of technology in language education and particularly, in academic literacy development has aroused growing research enthusiasm (Arno-Marcia & Rueda-Ramos, 2011; Cummings, 2005; Davison, 2005; Goodfellow, 2005; Warschauer, Grant, Real, & Rousseau, 2004). Underpinned by cognitive and learning theories, technology-mediated language education has experienced different developmental stages of behaviouristic CALL focusing on knowledge transmission, communicative and interactionist CALL focusing on participation into wider practice of community, and more recently, integrative CALL and social constructivist orientation emphasizing on social construction of knowledge (Butler-Pascoe, 2011; Cummings, 2005; Warschauer, 2002; Warschauer & Healey, 1998).

Despite much research progress, concerns still remain pertaining to the role of information technology enhancing collaboration and academic literacy. Previous studies claim its transformative role of scaffolding Zone of Proximal Development (ZPD) (Cummings, 2005), learner autonomy (Benson, 2005), metacogntitive reflection (Arno-Marcia & Rueda-Ramos, 2011), collaborative inquiry (Hakkarainen, 2003).Yet there is no consensus on educational benefits of technology in promoting collaboration and language learning (Cummings, 2005; Davison, 2005; Warschauer, 1998). Indeed, the role of technology has to be scrutinized against the actual implementation of technology-enhanced learning environment in real classroom learning settings shaped by particular social and institutional culture. To date, comparatively few studies have forged a nexus between theories and practices in technology-enhanced language learning by designing and evaluating a computer-supported design informed by theories and investigating contextual dynamics on academic literacy development. In this light, this study, drawing on a classroom-based approach and social constructivism, proposes an integrative framework of designing for learning innovation and academic literacy development. Furthermore, it utilizes multiple data sources and mixed methods to achieve the end of both evaluating the design effect and more importantly, unraveling the contextual understanding of how collaboration and academic literacy develop in the technology-mediated learning environment.

Further, although collaborative inquiry and academic literacy have been underscored as paramount educational goals for 21st higher education in English-speaking countries and ESL/ EFL countries, so far not much research has examined the inter-relationship between collaborative inquiry and academic literacy development, especially in EFL contexts. While currently a few studies investigated the relations between online participation and writing practices (Tan, Ng, & Saw, 2010), use of Web 2.0 tools, such as Wiki and blog to enhance writing output (Miyazoea & Andersonb, 2010), or design of online learning environment to promote critical thinking and academic communication (Arno-Marcia & Rueda-Ramos, 2011), there is a dearth of research examining the intertwined aspects of cognitive, collaborative, and linguistic processes embedded in the computer-supported collaborative inquiry discourse. More research attention is needed to examine the relations between the advancement of collective conceptual understanding and appropriateness of literacy practices. Bearing this in mind, this study also probes into

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