

Students' Understandings of Collaborative Discourse for Learning in Asynchronous Computer Conferences (ICCS2006 Poster)

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Abstract

This study explored students' understandings of collaborative discourse for learning in three graduate courses using web-based Knowledge Forum. Online discussion and pre-post measures were used as data sources. Students were asked to reflect on the purpose of collaborative discourse, its advantages and disadvantages, and explain which collaborative experiences were most helpful to their learning. Analyses indicated that students who were most active in the database were more likely than students who were less active in the database to relate collaborative discourse to their own learning, to the collective knowledge of the classroom community and to the larger educational community. Educational implications for asynchronous computer conferences are discussed.

Keywords: online discourse; collaboration; learning; computer conferencing

Introduction

Notions of democratic values, community, and collaboration are frequently emphasized in the online learning literature without critically questioning their underlying assumptions (Hodgson & Reynolds, 2005). The paucity of audio-visual cues in asynchronous computer conferences may afford more democratizing academic experiences (Harasim, Hiltz, Teles, & Turoff, 1995). However, researchers caution against assuming that text-based communication will be free of all social markers, discrimination, and exclusion (Herring, 1993). Developing a group of participants into a community requires heightened attention to the processes and practices that build trust both online and off-line (Kling & Courtright, 2003). Yet, common pitfalls of implementing computer-supported collaborative learning include assuming that participants in a group will interact productively because the environment makes it possible, and neglecting the social psychological dimension of learning (Kreijns, Kirschner, & Jochems, 2003).

Research suggests that electronic supports can increase the depth of student learning by reframing classroom discourse to support knowledge building (Scardamalia & Bereiter, 1994). Nonetheless, a challenge remains in encouraging students to progress beyond the sharing and comparing of ideas and to engage in focused and sustained discourse for inquiry. Without the instructor's explicit guidance and presence, even graduate students were found to engage primarily in "serial monologues" (Pawan, Paulus, Yalcin, & Chang, 2003).

The goal of this study was to explore how students understand the purpose of collaborative discourse for learning in three graduate courses using web-based Knowledge Forum. Understanding how students perceive the purpose of collaborative discourse is useful to educators interested in improving student learning using asynchronous computer conferences.

Theoretical Framework

The theoretical framework guiding this study is the constructivist pedagogy of knowledge building. Knowledge Building is defined in this study as "the production and continual improvement of ideas of value to a community" (Scardamalia & Bereiter, 2003, p. 1370). Similar to situated and distributed cognition views of learning, knowledge building shifts the emphasis from the individual thinkers to the social nature of cognition and learning (Barab & Duffy, 2000). Key to learning and knowledge building is discourse, a social process not unique to experts and one in which students can and should participate as they progress along a developmental trajectory.

Designed to support knowledge building, Knowledge Forum features socio-cognitive tools to facilitate collaborative discourse, which is For example, in writing a note, students can expand ideas in another note by building-on to it, or reference other notes to create an interconnected web of notes over time.

Method

Participants were comprised of 46 masters and doctoral students in three graduate courses taught by two faculty members at the Ontario Institute for the Studies in Education of the University of Toronto (OISE/UT). Both were experienced with web-based Knowledge Forum and knowledge building pedagogy underlying the technology. The researcher was a teaching assistant in all three courses, building rapport with the participants by attending classes and participating in online discussions.

Two types of data were collected. First, Knowledge Forum automatically recorded students' online participation data over time. This included information on the number of new and build-on "notes" that students had written, read, revised, referenced, as well as the students' usage of tools built-in to Knowledge Forum, such as scaffolds. Second, pre-post measures were obtained using semi-structured interviews and course assignments to determine any changes in the students' conceptions of collaborative inquiry discourse over time.

Results and Discussion

Overview of the Database Activity

Using Knowledge Forum's built-in Analytic Toolkit, summary statistics on database activity on students' writing, reading, and use of features were computed. 2597 notes posted to weekly discussion "views" or spaces were included and off-task views such as technical questions and course café were excluded.

As expected, the first course using Knowledge Forum to enrich face-to-face course meetings had lower levels of database activity compared to the second and third courses. Students contributed 397 notes in 13 discussion views over a six-week period. The mean number of notes contributed per student was 27 (range 9-54). The mean percentage of notes read per student was 58%. The instructor and TA accounted for 7% of the notes contributed to the database. This course was used as a pilot study to test instruments for the second and third courses, which were both fully online and conducted solely through Knowledge Forum and taught by a different instructor.

In the second course, students contributed 1062 notes in 13 discussion views over a thirteen-week period. The mean number of notes contributed per student was 63 (range 35-111). The mean percentage of notes read per student was 79%. The instructor and TA accounted for 13% of the notes contributed to the database.

In the third course, students contributed 1138 notes in 13 discussion views over a thirteen-week period. The mean number of notes contributed per student was 57. The mean percentage of notes read per student was 71%. The instructor and TA accounted for 12% of the notes contributed to the database.

Pre-Post Measures

Participants for in-depth study of the pre-post measures were selected by categorizing the written contribution and readership activity in each course. Students with above average to exemplary database activity on both reading and writing were rated High, and those with below average to disengaged database reading and writing were rated Low. 18 participants were rated as High; 17 participants were rated as Low.

In response to the question, *What do you see as the purpose of collaborative discussion in online courses?* students rated High suggested that the process of working with others towards a shared goal helped them learn. By participating actively in the development of theories, and ideas, collaborative discourse was seen to deepen students' personal understanding. Moreover, High responses emphasized the importance of community-level advances in knowledge and understanding in the post-measures. The community extended beyond the course context to those in the larger education community and to any community that stood to benefit from the ideas discussed.

In contrast, students rated Low acknowledged the diversity of perspectives and resources that others brought to the collaborative discourse, but expressed difficulties in participating fully in the classroom knowledge building community themselves. Lower levels of participation were

attributed to their inexperience with Knowledge Forum and the culture of knowledge building, and lack of prior content knowledge. In post-course responses, students showed improved understanding of the purpose of collaborative discourse.

Conclusions and Implications

This study examined students' understandings of the purpose of collaborative discourse in three graduate courses using web-based Knowledge Forum. Analyses comparing students rated High and Low in database writing and reading levels suggest that making explicit the relationship between collaborative discourse and learning and community knowledge would be beneficial in designing instruction in asynchronous computer conferences. Further, helping all students, whether knowledgeable or not, to realize the value of participation in collaborative discussion focused on working towards shared goals and understanding would be useful. Content analyses of the Knowledge Forum discussion data is currently in progress, as is the development of web-based tools to graph the visualization of the students' web of interaction over time.

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