Public Abstract

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Title:Knowledge Construction, Social Identity and Social Network Structure in Completely Online Groups

Working, learning and informal information-seeking behavior is rapidly moving online. It will increasingly involve collaboration within small groups meeting online. While this process is being driven by technological innovation, the important socio-technical issues of human-computer, human-human and human-information interaction under the new conditions are less well understood. I am interested in how small groups form online and how the characteristics of this formation affect their knowledge-related abilities.

Completely online groups (COGS) are phenomena that have emerged in computer supported collaborative learning (CSCL) environments. This mixed methods study examines the development of eight completely online groups in a CSCL course held at the University of Missouri during the summer of 2008. The principal contribution of this work is a new and deeper understanding of completely online groups and the diverse development trajectories they follow. This work also contributes a methodologically rich research design that leads to the comprehensive description of the context and experiences of completely online groups.

Group development is framed as the confluence of knowledge construction, social identity and social network structure. Knowledge construction and social identity are both examined using content analysis techniques (Krippendorf, 2004) on over 1600 discussion board posts made by three groups during the course. These quantitative findings are integrated with ethnographically informed analysis of field notes, transcripts from 42 member interviews and other artifacts from the socio-technical experience of the eight groups examined in this study. Network structure is revealed through examination of bi-directional activity logs (showing both read and post activity) and the analysis of those logs using social network analysis (SNA) measures and sociograms (Wasserman & Faust, 1994).

Once group structure and trajectory are established for the eight groups, the study incorporates the constructs of social ability (Laffey et al, 2006), information horizons (Sonnenwald, 1999) and group efficacy (Hardin et al, 2006) to identify and describe differences between the 25 members in this study and the eight groups they were organized in. Survey data, ethnographic analysis of discussion boards, content analysis, social network analysis and critical incident interview data are integrated and presented as group level case studies for three of the groups. Finally, small group development trajectories for all eight groups are compared and contrasted.

The results presented include patterns of completely online small-group development, and the relation of those patterns to differences in social ability, group efficacy and information horizons among the groups and their members. Completely online small-group development is characterized through detailed analysis of social-network structure, patterns of group-knowledge construction and trajectories of group-identity formation. The goal of this research is to build the research and design community's understanding of how socio-technical systems influenceâ€"and may be designed to supportâ€"creative collaboration and learning among people who never meet face-to-face.