Social Comments and Online Problem–Solving Groups

Deana L. Molinari
Washington State University Intercollegiate College of Nursing, USA

INTRODUCTION

The study of face-to-face (F2F) group problem solving began during World War II. Scholars in business, psychology, education, and psychiatry have tried to understand group process (Bales & Strodtbeck, 1951; Gersick, 1988; Poole, 1983). Scholars attempted to identify those characteristics and processes that could be facilitated for optimal performance. Research findings influenced how groups operate today. As groups migrate to the Internet, a similar body of knowledge is needed.

How individuals use the Internet for problem solving impacts both society and individual well-being (Kraut, Lundmark, Patterson, Kiesler, Mukopadhyay, & Scherlis, 1998). Scholars ask if the communications principles are similar to F2F dialogue. Some Internet-oriented scholars find online communication differs (MacDonald, 2002; McIsaac & Blocher, 1998). Instructors need a better understanding of the new online environment and how the student experience is impacted before designing the online educational process (Vrasidas, 2002). A grounded-theory (GT) approach was used to study critical thinking in two online groups working on a collaborative project. The goal was to develop a preliminary theory to provide a foundation for further empirical study.

GROUNDED THEORY

Grounded theory was designed to meet the research needs of social topics in a fast changing environment (Chenitz & Swanson, 1985). The methodology permits concepts to emerge from the data rather than subjecting the data to hypotheses (Strauss & Corbin, 1998). The emerging concepts are then compared with recent literature for validation.

In grounded theory the investigator looks at one small example of a social practice. Observations, interviews, and text analysis provide the data, which is then dismantled into small pieces, called constructs, during a process called open coding. The next step requires the investigator to ask the data questions and compare answers line by line with the rest of the data and the literature. The iterative process continues until saturation occurs. The author then reassembles the information into meaningful models and thematic statements in the axial coding process. A central theme is selected and a theory formed, complete with its implications, relationships, limitations, and characteristics. Hypotheses based on the theory can later be tested with new samples and other scientific methodologies. The literature is consulted throughout the process for validation.

Grounded theory was considered a suitable beginning for the role of social comments in online problem-solving groups due to the pace of change in online discussion. Education used to focus on information sharing, transfer, and retention. The advent of discussion boards, chats, and Listserv software enables dialogue and therefore online problem solving. The need for a theoretical foundation on which to base future study was also considered.

COMMUNICATION ANALYSIS

A controversy exists about the nature of social comments in group problem solving. Communication theorists have debated the nature of social comments, and some frameworks for studying the efficacy of problem-solving groups relegate socially related dialogue as superfluous or detrimental to the group's goals (Poole, 1981, 1983; Poole & Holmes, 1995; Poole & Roth, 1989). Hirokawa (1983) stated social comments contributed to relationship development, which influenced the outcome product quality.

The debate moves online as the constructivist school of instruction encourages increasing numbers of learning communities (MacDonald, 2002). Group dialogue produces more student engagement, activation of higher order thinking skills, and the development of social and team skills (Collis, Andernach, & Van Diepen, 1997; Cragg, 1991; Crooks, Klein, Savenye, & Leader, 1998; Krothe, Pappas, & Adair, 1996). The online group grows more popular as computer-mediated conferencing develops (Curtis & Lawson, 2001).

Mann and Stewart (2000) define computer-mediated communication as a hybrid language. Researchers state that online communications change the way people think, problem solve, and interact because the technology redefines the spatial and temporal parameters of the interaction (Abdullah, 1998; Tornow, 1997). Colbeck, Campbell, and Bjorklund (2000) reason that online small decision-making groups do not receive visual cues and so the social aspects of problem solving such as turn taking and relationship building alter (Dillenbourg & Self, 1995).

Several research approaches to online communication are underway. Community studies are being undertaken to understand the development process and its outcomes. Boyer's (2001) theory focuses on the three stages of community building: developing friends, accepting each other, and developing camaraderie after intense, long-term involvement. Boyer states that community building is dependent on iterative and deeper stages of self-revelation. Her theory does not address problem solving. Other researchers (Collis et al., 1997) also address online relationships, but not in problem-solving groups.

Content analysis is the usual method for understanding the function of social communications in the new hybrid online language. There are many developing types of content analysis and different methodologies for different purposes. Few studies focus on problem solving in collaborative online learning groups, although there are many studies of online communities and online classes (Barrett, 1993; Brereton et al., 2000; Brescia, Schaumburg, & Duffy, 1998; Dillenbourg & Self, 1999).

Since communication theorists believe that all communication serves a function (Hirokawa, 1983), a look at the function of online social communications is justified. Social communications are defined as words, punctuation, graphics, and fonts that do not pertain directly to the task or solution processes. McIsaac (2002), McIsaac, Askar, and Akkoyunlu (2000), and Vrasidas and McIsaac (2000a, 2000b, 2001) study factors influencing online communication, especially in international settings. Other scholars focus on social presence.

Social presence is defined as the ability of learners to project themselves socially and affectively into a community of inquiry (Murphy & Collins, 1999; Rourke & Anderson, 2002). Both teachers and students endeavor to create online personalities to which others relate (Woods & Ebersole, 2001). Researchers have identified gender differences in social presence, going so far as to identify group characteristics by gender (Blum, 1999).

A GROUNDED-THEORY STUDY

Few studies focus on the role of social comments in online decision-making groups, so a grounded-theory study was devised to address the issue. In three studies of online problem solving, the author found social communications to make a difference in the quality of outcomes the groups produced (Molinari, 2001). The question of what roles the communication played arose. If the online experience is similar to the F2F experience, then the adaptation of 60 years of communications research can transfer to the new environment. If differences in function are found, then new inquiry will be necessary.

Sample characteristics impact the findings of the study. Participants were registered nurses in a required online research course. Most were over the age of 30 and working full time. All participants were presented as novices to online, collaborative problem solving of ill-structured challenges.

A content analysis of 482 electronic messages was completed according to grounded-theory procedures. Each message was broken into statements, words, graphics, and punctuation, and then coded for problem solving or social communication. Only the social communications were analyzed. Social messages accounted for 43% of all codes, which is similar to previous online studies (Rourke, Anderson, Garrison, & Archer, 1999). During the first third of the course, social codes accounted for most of the message content. Most message content remained task oriented.

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