The Journal of Interactive Online Learning *Volume 1, Number 2, Fall 2002*
www.ncolr.org ISSN: 1541-4914

The Use of Online Synchronous Discussion Groups to Enhance Community Formation and Professional Identity Development

Lee Duemer, Dean Fontenot, Kathryn Gumfory, Mary Kallus,
JoAnn Larsen, Susan Schafer, and Benny C. Shaw, Jr.
Texas Tech University

Abstract

Synchronous online discussions are being increasingly used in higher education in order to facilitate learning and group interaction between on-campus and off-campus students. In response to calls from the engineering community to integrate humanities studies into the engineering curriculum, English and Engineering faculty at a large urban university collaborated to design an online literature discussion course for first-year engineering students. Students were assigned two works of literature that dealt with ethical and professional development issues in engineering. The online discussions took place outside class in a Multiuser Object Oriented (MOO) environment, where all discussions were logged. As researchers examined the transcripts of these discussions, the theme of community formation emerged. The transcripts were coded and then used to identify the varying levels of community formation during the course of the semester as well as the students' development of professional identity. Results suggest that behaviors of the mentor, negotiation of group knowledge, and exclusion of late arriving members characterized communities. The results also suggest that through reading and discussion of professional issues, students may begin to view themselves as members of the engineering profession.

A growing body of literature has explored the benefits of technologically based instruction (Allen, 1998; Junk & Fox, 1998; Rhodes, 1998). Most recently, researchers have begun to focus attention on the connectivity between technology and collaborative learning (Gallini, 2001; Liaw & Huang, 2000). Such a connection is the result of dialogue used as a pedagogical tool to help students collaboratively engage in synchronous communication while exchanging ideas and responses (Peterson & Eeds, 1990; Shotsberger, 2000). The use of computer conferencing was recently studied in the context of an entry-level engineering course (Palmer, 2001). Computer conferencing was intended to facilitate interaction between on-campus and off-campus students and to serve as an opportunity for engineering students to reflect on other students' comments on the issues covered in the course; however, the effects of the group dynamics on the formation of a learning community and on the development of the students' professional self-concept were not examined.

Our contribution to the literature was to examine the role of a synchronous, text-based computer conferencing environment in terms of the formation of community, and definition of students' self-concept as members of the engineering profession. Palmer (2001) has suggested that a natural application of such a computer conferencing environment would be the creation of a learning community, therefore, this study directed careful attention to the virtual environment

and toward a description of human interactions from the perspective of interpersonal relationships in an institutional context in order to understand the development of a learning community.

Background, Data Sources, and Methods

Background of the Study

Florman (1987, p. 180) challenged colleges of engineering to include a liberal education element, arguing that the quality of lives for those in the profession would be enhanced through "liberal enrichment of engineering education, by the broadening of horizons, the deepening of cultural awareness—in short, by the civilizing—of engineers." The expanding body of knowledge and skills that must be transmitted to the next generation of engineers has restricted the amount of time for students to attend courses in the liberal arts. The large body of technical knowledge worsens the problem by limiting the opportunity to discuss the underlying philosophical foundations of the profession. In order to respond to Florman's call, the College of Engineering at an urban research university decided to use literature as a way to infuse the liberal arts into engineering education and to build tighter communities among online learning students. A liberal arts element was integrated into the curriculum of an undergraduate Introduction to Electrical Engineering course by incorporating literature discussions over two concept-rich books, *Soul of a New Machine* by Tracy Kidder, and *The Civilized Engineer* by Samuel Forman. The course instructors wanted to quickly establish an internalized awareness of the fundamental philosophy of the profession among the students. The discussions took place outside of class time in a Multiuser Object-Oriented (MOO) environment, a text-based computer-mediated communication environment that logs discussions and is bounded by time but not place. Communication was synchronous in nature and students could participate from anywhere they had access to the Internet.

Data Sources

The data for this study consisted of transcripts of captured conversations from the online literature discussion component of the course. The purpose of the course activity was to discuss assigned readings from *Soul of a New Machine* and *The Civilized Engineer*. The course requirement for the activity was that each student participate in three of the six possible online discussions. Actual student participation varied from two to six discussions. Data were in the form of archival, text-based, logged MOO transcripts. Supplemental data included the course syllabus, class notes, and discussion questions. Pseudonyms were used in reporting data in order to preserve the identities of students. The study of small sets always puts scholars at a heavy burden to justify their conclusions, and show that worthwhile information has been obtained from their efforts. Like Lincoln and Guba (1985) we approach this study with the intent that findings are better conceptualized as working hypotheses. Such a perspective is based on the assumption that the transferability of hypotheses is dependent on the fit between sending and receiving contexts (Lincoln & Guba, 1985) and on whether researchers analyze data to the point of theoretical saturation in order to learn important insights (Glaser & Strauss, 1967), rather than on the size of the data that is analyzed.

The class was composed of 46 students and 6 graduate student mentors. Each mentor was responsible for facilitating the online discussions for his or her assigned group. They were designated as "mentors" rather than "facilitators" as part of their responsibilities were to help students develop a sense of professional identity through the discussions. It is important to distinguish between the roles of mentor and facilitator. Mentoring is a complex and intensive role that includes maintaining open communication, emotional support (Playko, 1990), and the transmission of professional beliefs and practices (Guyton & Hidalgo, 1995). Group facilitation in the context of online learning involves technical instruction and helping people who are physically dispersed work together productively (Bostrom, 1995; Killion & Simmons, 1992). Group facilitation does share with mentoring the tasks of helping members become familiar with behavioral norms; however, the two roles are fundamentally different in that the group facilitator's primary responsibility is to the group as a whole, while the mentor's responsibility is to an individual in a much more intensive relationship.

The mentors were graduate teaching assistants in engineering and had no specific training for their role as mentors beyond a one-day workshop in how to operate the MOO environment. They also received a graduate student orientation common for all graduate teaching assistants in the College of Engineering. Other than the instruction in operating a MOO environment they were not prepared for their roles any differently than other teaching assistants. Eight discussion groups were formed consisting of four to six students with one mentor to each group. The data included all the groups from the class with all the students and mentors who participated in the discussions. The names of the groups and participants were assigned pseudonyms in order to assure anonymity.

Method of Analysis

The researchers utilized a phenomenological approach to better understand the meanings of events and interactions shared by a group (Bogdan & Bilken, 1998; Merriam, 1998). Phenomenology is based on the assumption that reality and meaning are socially constructed (Greene, 1978) and that plausible meaning can be understood through a rigorous examination of data (Bogdan & Bilken, 1998; Schwandt, 1994). Rather than seek to understand "facts" and "causes" (Bogdan & Bilken, 1998), the researchers sought access to the conceptual world of their subjects (Geertz, 1973) in order to better understand how meaning and identity were developed. The researchers perceived the MOO discussions as a process of developing group meanings that had symbolic significance for members (Sass, 1988). The interactions and situations that occurred within the MOO allowed the researchers the opportunity to better understand how learning communities developed.

The transcripts provided a data set that was obtained in an unobtrusive manner and provided an opportunity to explore learning community formation and students' self-concept development as stated in the students' own words. A distinct advantage of using archived transcripts was the reduction of subject's reactivity to the "presence of an intruding investigator" (Berg, 2001, p. 177). The data were analyzed across individual characteristics, utilizing an atomistic approach reflecting the intent to present useful and accurate generalizations rather than articulate a narrative (Husen, 1979; Willis & Jost, 1999). An atomistic approach was used in order to develop general and generalizable principles from a local context. Such an approach is appropriate when the intent of analysis is to find rules that can be generalizable, rather than develop a full understanding of a local context. Atomistic analysis is best suited to archival

studies that seek information about a particular aspect or facet of a larger setting. Conversely, holistic analysis is more appropriate to tell a story and is best supported by methods such as ethnography or participant observation (Willis & Jost, 1999).

Data analysis began with the use of open coding in an issue-related framework (Malinowski, 1984) to identify interactions that pertained to the development of learning communities. The purpose of open coding was to analyze the data minutely in order to "open inquiry widely" (Berg, 2001, p. 236) and discover exchanges in the data that pertained to the intent of the study (Strauss & Corbin, 1990). Significant elements were separated from the surrounding texts and organized into a new data-driven context of a generalized nature (Malinowski, 1984) that was descriptive of how groups and learning communities developed (Muldur, 1994). Validation of findings was provided by triangulation involving multiple researchers in order to combine several lines of sight for analysis and interpretation of the data (Denzin, 1995).

Results and Discussion

Analysis of the data revealed three distinct patterns relating to the development of learning communities. In the first pattern, the discussions were task-oriented and display little or no interest in an exchange of personal information between members. Group members interacted in a direct question-response style with little elaboration. In the second pattern, discussions remained largely task-oriented while some social or off-task behaviors occurred at the beginning and end of discussion sessions. In the third pattern, members shared personal information throughout the dialogue and integrated that information into their online discussion. The third pattern was characterized by members who elaborated on previous comments or applied member experiences. Threads of thoughts were also fully developed before moving to another question, humor was often interjected into the discussion, and several threads of conversation often occurred simultaneously. A general characteristic found across all three patterns was evidence of member exclusion. Members who arrived after a discussion was underway were typically excluded until the specific question under discussion was resolved.

Group Development

Groups are defined as collections of individuals who come together for a common purpose, demonstrate common behaviors, and follow common laws (Sheldrake, 1988, p. 249). For the purpose of the study reported herein, groups shared the common purpose of discussing the assigned readings in the course. Group formation was the initial step in the development of communities. Some groups continued to more sophisticated levels, to be discussed further, while some progressed no further than group formation.

Mentors who acted as authority figures were found to be detrimental to interactive behaviors such as exchanging and debating ideas, or sharing interpersonal information. Two groups that were characterized by the presence of a mentor as authority figure did not progress to a learning community. Mentors as authority figures posed questions, made judgment statements about the responses, and paced the discussions. A similar pattern of interaction can be seen in classroom settings where an authority figure asks questions and individual students direct their answers to the authority figure without integrating their responses with those of other students. In such a pattern of interaction, all comments are directed toward a single person. An example of a

flow of discussion with the mentor as the authority figure is shown below. In the group represented in this example, the mentor drove the discussion and disrupted efforts by group members to insert personal comments into the discussion.

> Doug (mentor): Do y'all think that Alsing (the central character in the study under discussion) would have been any better if he was more detached, or do you think it is best to be close to your engineers.
> Tom: I think he needed to be close to his engineers like he was, but he also needs to be a little more detached at times.
> Fred: I personally believe that if I'm close to my manager I will work hard when things are in a hurry.
> Mike: If Alsing was away for any length of time, I do not think that his engineers would get much done down there.
> Kelly: If they don't constantly push I will slow down.
> Robert: The engineers need to be a little more independent than they are.

Groups also failed to advance toward a more sophisticated level when under pressure to adhere to a deadline. Groups that completed their discussions after the scheduled deadline as make-up discussion sessions failed to progress past the group formation stage of community formation. Discussions did not show an effort to exchange or debate ideas and participants did not infuse the discussions with interpersonal comments. There was a sense that the participants were trying to meet a deadline and were only concerned with completing the assignment.

Learning Communities

Some groups advanced past the group formation stage and showed evidence of learning community behaviors. Rituals, behavioral expectations, and the articulation of a common purpose, resulting in individuals cohabiting more harmoniously, characterize a sense of community (Bennett, 2000; Carbone, 1999; Ewell, 1994; Hallinger, 1996). Learning communities are further characterized by group members reacting to member input rather than just that of the mentor, and exchanging and debating ideas in order to arrive at a consensus to specific discussion questions at hand. Exchanges and debates between members result in group construction of knowledge (Bouas & Arrow, 1996; Postmes, Spears & Lea, 1998). Students experience more interactions with each other and the mentor in learning communities, and move toward better integration of the course subject matter (Gabelnick, MacGregor, Matthews & Smith, 1990).

Learning communities in this study were characterized by the negotiation of group knowledge, better quality responses to questions, and the inclusion of different points of view into answers. Members stated their position and used persuasive arguments supported by the text or by the use of metaphors to promote their position to the group. An example of arguments that were supported by the text and metaphors can be seen in the following discussion:

> Susie: If you tend to work for rewards that are not from within yourself, then you will always be disappointed.
> Rick: If you don't get the credit you have to keep going and worry about yourself.
> Marc: Pats on the back from your supervisors is good too.

Marc: Humans are social animals after all.
Susie: They are nice, but not essential by any means.
Rick: I agree, acknowledgment always make you want to work harder.
Susie: That is true…but once you get approval from one person, then you tend to want it from more people.
Marc: I don't think I would stay in a job that didn't recognize your work.… I'm no longer in the Navy.

Learning community members used their experiences to construct metaphors to support their positions and related their experiences to the question under discussion at the time. The members' opinions changed as evidenced by the statements "I didn't think of that" or "I see your point" as the discussion of a question progressed. The opinions of the individual members subsequently changed and aligned in order to arrive at a group consensus.

An analysis of discussions revealed that group members who entered a discussion late could be excluded from discussions in a learning community. The latecomer stated his ideas or opinions, but a response from the learning community acknowledging or integrating those ideas or opinions did not occur.

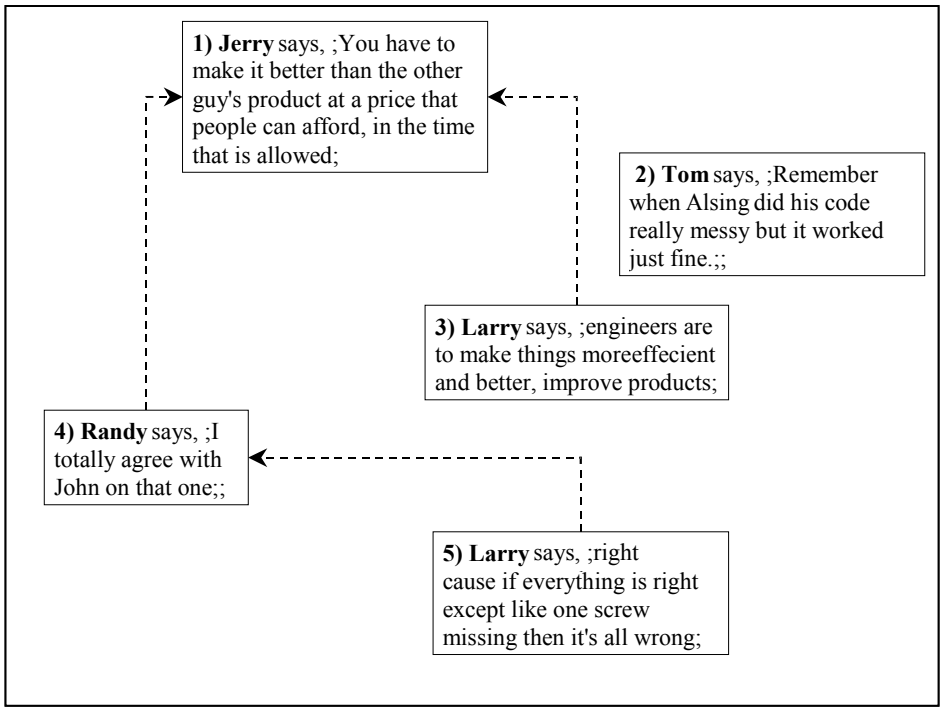

Figure 1. **A diagramed example of excluding late members in learning communities. Jerry, Randy, and Larry had formed a learning community at the beginning of the discussion. Tom arrived late and is excluded from the discussion. The numbers indicate the flow of discussion and the broken lines indicate the discussion responses.**

Figure 1 demonstrates the exclusion of the latecomer from the learning community discussion. Tom arrived after the discussion was underway and was excluded from this section of the discussion as indicated by the isolated box and no response lines. Even though he was an assigned member of the discussion group, the isolation continued through the entire discussion question. The length of the exclusion of the latecomer varied between the groups that formed learning communities. Instances were observed when the latecomer was excluded from the discussion of the current question as well as instances when the latecomer was excluded from the entire discussion involving multiple questions. In the exchange illustrated in Figure 1, once the discussion for the current question was concluded and the learning community was ready to move to the next question, the learning community included the latecomer.

The analysis of discussions in terms of reader-text interaction helped uncover patterns that related to the intertextual connections that fostered the development of learning community and students' self-concept as engineers. Learning communities involved members of a group going beyond an exchange of ideas about the topic and sharing personal information. Such social interactions usually occurred in the off-task comments made, and did not regard the task at hand; however, the exchanges were meaningful to the members of the group and helped to establish camaraderie and intimacy between the participants. Discussions that occurred early in the course reflected participants' identities as students. As the semester progressed, learning communities were found to exhibit supporting comments and arguments that reflected an increased student identity with the engineering profession. The following mid-semester comment was typical of a transitional statement: "By exposing ourselves to clubs and Professional Societies and other disciplines we become Florman's well-rounded civilized engineer." These groups also began to speak of engineering with a greater voice of confidence. The intertextual connections indicated that when a supportive community was established, the students were able to identify first with a group of engineering students and then move toward developing identities as engineers.

Conclusions and Implications

Yoder-Wise (1999) and Forman, Minick and Stone (1987) discussed several types of behaviors found within traditional physical classroom groups, such as task behaviors, maintenance behaviors, and facilitation. Palloff and Pratt (1999) described the importance of community building within online groups. The authors concluded that community fostered a sense of connectedness, deeper exchange of ideas, freedom to engage in disagreements, increased risk-taking, and negotiation toward common learning goals. All of these behaviors contribute to a sense of cohesion and reduce the distance between members (Lally & Barrett, 1999). Remarks such as "as porky pig says, 'that's all folks'"; and "remember to tip your waitress LOL" may be initially dismissed by some as irrelevant to the learning process; however, such remarks serve as identifiable markers of relational solidarity and community building which marked the shift toward a learning community (Hermann, 1998; Lally & Barrett, 1999).

The findings from this study indicate that progression from a group to a learning community resulted in a deeper exchange of ideas by the members' integration of each other's comments. Integration provided a mechanism to negotiate a consensus within the group in addition to the synthesis of group knowledge. This finding is consistent with that of DiPetta (1998), who concluded the development of a sense of professional community gives meaning to work and professional identity, and that of Lieberman and Grolnick (1996) and Hermann (1998), who concluded that professional learning communities promote the sharing and discussion of

subject-matter knowledge, and contribute to improved professional development and identification. The learning community, therefore, is defined as a place where people come together to share values, association, and personal commitment for the purposes of mutual benefit and professional development (DiPetta, 1998).

Learning communities have a direct influence on how students relate themselves to course content and other students (Gamas & Nordquist, 1998). Osterman (2000) reported that organizations influence the development of community by structuring processes that facilitate learning. The findings from this study revealed that members of social learning communities moved from identifying themselves solely as a learner and student to identifying themselves as engineers. This finding is consistent with that of Lally and Barrett (1999), which documented the development of social learning communities in computer-mediated communication among postgraduate students in distance-education contexts. Helping students to identify themselves as members of the engineering profession promotes the establishment of an internalized awareness of the fundamental philosophy of the profession. In turn, this may increase a heightened awareness of the engineering profession in graduates.

The patterns of exclusion of late-arriving members that were documented in the learning communities were an unexpected finding in this study. The general pattern of excluding late members could be the result of the late member being "out of phase" in the discussion. The late member may have had no knowledge of the discussion that occurred before his or her arrival. Statements made by the late arriving member that did not fit with the established flow of the discussion would have been out of phase; however, the exclusion of late members for the entire discussion cannot be explained by being out of phase with only a portion of the discussion. After the latecomer had arrived and the group moved to the next question, a new flow of discussion would have been established and the latecomer could have become in phase with the discussion. Further study will be needed to examine the group dynamics, member roles, and the extent they influence the exclusion of late members.

Our analysis of transcripts revealed that the behaviors of group mentors often were not consistent with scholarship on mentoring. Mentorship has been defined as a relationship that includes characteristics such as open communication lines, allocation of sufficient time, and provision of emotional support (Playko, 1990). Other characteristics include the ability to articulate beliefs and practices, and well-developed coaching skills (Guyton & Hidalgo, 1995). Group mentors displayed various degrees of ability. That mentors were not given any specific training for this assignment beyond a workshop in how to operate a MOO environment may have contributed to this finding. The researchers expected the mentors to fulfill two roles as mentors and facilitators; however, the researcher's expectations with respect to mentoring appear to have been beyond the abilities of the mentors due to lack of mentoring training, the problems represented by distance learning, and the inability to provide intensive peer relationships with a relatively large number of students. Such a conclusion indicates that group mentors would benefit from specific training to prepare them for their roles; however, considering the time and relationship problems that are represented in an online format, it may be better to reconceive the graduate students as group facilitators rather than mentors. Bennett and Marsh (2002) came to a similar conclusion when they found a need for intensive and early training for online tutors. The challenges associated with online learning forced tutors to focus their energies toward mastering their own skills rather than identifying strategies to facilitate student learning.

The educational context of higher education has redefined the role of faculty to require new technological skills such as online teaching (DiPetta, 1998). The findings from this study

relate to improving practice for faculty teaching online courses. This study has shown that Sergiovanni (1993) is correct in pointing out that the development of community is not something that occurs passively, but is an active process on the part of people who hold group membership based on a common purpose or goal. The findings are also consistent with those of Postmes, Spears, and Lea (2000), who conclude that group formation is a dynamic rather than static process. The sense of social isolation experienced by distance learners (Lally & Barrett, 1999) can be overcome by group members working together in less routinized ways (Gabelnick et al, 1990) to fuse the intellectual and social components of the classroom. Faculty planning to teach online courses can use information about community building to facilitate deeper, more meaningful discussions among the members by encouraging the development of social learning communities. Faculty may choose to consider these findings when determining whether to offer the course as an interactive format as opposed to a lecture/question-answer format. Engineering faculty members could also use these findings to produce engineers who are confident in their abilities and see themselves as members of the engineering profession. Using online discussion groups that are maintained by students and mentors as a social learning community rather than being teacher directed can promote this identity shift from unsure students to self-confident future engineers. Finally, these research findings can be used to build virtual social learning communities to supplement the overburdened school system. Educational institutions today are faced with the dilemma of not having time to integrate the humanities aspect of learning into the curriculum. Virtual social learning communities can help to alleviate the pressure of an overloaded curriculum.

References

Allen, R. (1998). The Web: Interactive and multimedia education. *Computer Networks and ISDN Systems, 30,* 1717-1727.

Bennett, J. (2000). Hospitality and collegial community: An essay. *Innovative Higher Education, 25*(2), 85-96.

Bennett, S., & Marsh, D. (2002). Are we expecting online tutors to run before they can walk? *Innovations in Education and Teaching International, 39*(1), 14-20.

Berg, B. (2001). *Qualitative research methods for the social sciences*. Boston: Allyn and Bacon.

Bogdan, R., & Biklen, S. (1998). *Qualitative research for education: An introduction to theory and methods*. Boston: Allyn and Bacon.

Bostrom, R. (1995). The importance of facilitatior role behaviors: Implications for training facilitators to use GSS. *Journal of Teaching International Business, 7*(4), 7-30.

Bouas, K., & Arrow, H. (1996). The development of group identity in computer and face-to-face groups with membership change. *Computer-Supported Cooperative Work, 4*(2-3), 153-178.

Carbone, E. (1999). Students behaving badly in large classes. *New Directions for Teaching and Learning, 77*(1), 35-43.

Denzin, N. (1995). *The research act: A theoretical introduction to sociological methods*. Chicago: Aldine.

DiPetta, T. (1998). Community on-line: New professional environments for higher education. *New Directions for Teaching and Learning, 76,* 53-66.

Ewell, P. (1994). Restoring our links with society: The neglected art of collective responsibility. *Metropolitan Universities: An International Forum, 5*(1), 79-87.

Florman, S. (1987). *The civilized engineer*. New York: St. Martin's Press.

Forman, E., Minick, N., & Stone, C. (1987). *Contexts for learning: Sociocultural dymanics in children's development*. New York: Oxford University Press.

Gabelnick, F., MacGregor, J., Matthews, R., & Smith, B. (1990). Learning community models. *New Directions for Teaching and Learning, 41,* 19-37.

Gallini, J. (2001). A framework for the design of research in technology-mediated learning environments: A sociocultural perspective. *Educational Technology, 41*(2), 15-21.

Gamas W., & Nordquist, C. (1998). Expanding learning opportunities through on-line technology. *NASSP Bulletin, 81*(592), 16-22.

Geertz, C. (1973). *The interpretation of cultures*. New York: Basic Books.

Glaser, G., & Strauss, A. (1967). *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.

Green, M. (1978). *Landscapes of learning*. New York: Teachers College Press.

Guyton, E., & Hidalgo, F. (1995). Characteristics, responsibilities, and qualities of urban school mentors. *Education and Urban Society, 28*(1), 40-47.

Hallinger, P. (1996). Nourishing the spirit: The role of ritual in building communities of learners. *Journal of Staff Development, 17*(1), 22-26.

Hermann, F. (1998). Building on-line communities of practice: An example and implications. *Educational Technology, 38*(1), 16-23.

Husen, T. (1979). General theories in education: A twenty-five year perspective. *International Review of Education, 25,* 325-345.

Junk, V., & Fox, L. (1998) Making the most of home pages, e-mail, the Internet and presentation graphics. *T.H.E. Journal, 26*(1). Retrieved July 19, 2001, from http:// www.thejournal.com/magazine/vault/A1998.cfm

Killion, J., & Simmons, L. (1992). The Zen of facilitation. *Journal of Staff Development, 13*(3), 2-5.

Lally V., & Barrett, E. (1999). Building a learning community on-line: Towards socio-academic interaction. *Research Papers in Education: Policy and Practice, 14,* 147-163.

Liaw, S., & Huang, H. (2000). Enhancing interactivity in Web-based instruction: A review of the literature. *Educational Technology, 40*(3), 41-45.

Lieberman, A., & Grolnick, M. (1996). Networks of reform in American education. *Teachers College Record, 98*(1), 7-45.

Lincoln, Y., & Guba, E. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.

Malinowski, B. (1984). *Argonauts of the western Pacific*. Prospect Heights, IL: Waveland.

Merriam, S. (1998). *Qualitative research and case study applications in education*. San Francisco: Jossey-Bass.

Muldur, J. (1994). The mechanics of qualitative analysis. *Issues in Educational Research, 4*(2), 103-108.

Osterman, K. (2000). Students' need for belonging to the school community. *Review of Educational* Research, 70*,* 323-367.

Palloff, R., & Pratt, K. (1999). Building learning communities in cyberspace: Effective strategies for the on-line classroom. San Francisco: Jossey-Bass.

Palmer, S. (2001). On- and off-campus engineering student usage of a computer conferencing system. *Journal of Research on Computing in Education, 33,* 280-298.

Peterson, R., & Eeds, M. (1990). *Grand conversations: Literature groups in action*. New York: Scholastic.

Playko, M. (1990). What it means to be mentored. *NASSP Bulletin, 74*(526), 29-32.

Postmes, T., Spears, R., & Lea, M. (1998). Breaching or building social boundaries? SIDE-effects of computer-mediated communication. *Communication Research, 25,* 689-715.

Postmes, T., Spears, R., & Lea, M. (2000). The formation of group norms in computer-mediated communication. *Human Communication Research, 26,* 341-371.

Rhodes, C. (1998). Multiple perceptions and perspectives: Faculty/student responses to distance learning. *Technology and Teacher Education Annual, 10,* 1089-1092.

Sass, L. (1988). Humanism, hermeneutics, and the concept of the human subject. In S. B. Messer, L. A. Sass, & R. L. Woolfolk (Eds.), *Hermeneutics and psychological theory* (pp. 222-271). New Brunswick, NJ: Rutgers University Press.

Schwandt, T. (1994). Constructivist, interpretivist approaches to human inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 118-137). Thousand Oaks, CA: Sage.

Sergiovanni, T. (1993). *Building community in schools*. San Francisco: Jossey-Bass.

Sheldrake, R. (1988). *The presence of the past: Morphic resonance and the habits of nature.* New York: Times Books.

Shotsberger, P. (2000). The human touch: Synchronous communication in Web-based learning. *Educational Technology, 40*(1), 53-56.

Strauss, A., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.

Willis, J., & and Jost, M. (1999). Software for analyzing qualitative data. *Computers in the Schools, 15*(3-4), 117-150.
Yoder-Wise, P. (1999). *Leading and managing in nursing.* St. Louis, MO: Mosby.