

Fostering Social Presence in Asynchronous Online Class Discussions

Lifang Shih

State University at Albany

Lifang@nycap.rr.com

Karen Swan

Kent State University

kswan@kent.edu

Abstract. The study examined the role of social presence in relation to students' perception of online asynchronous learning. Specifically, this study (a) examined the magnitude of the relationship between students' perceptions of social presence and their satisfaction with online class discussions, (b) investigated students' online behaviors which contributed to their own projected social presence, and (c) explored factors influencing students' perceptions of social presence, and the relationship between students' perceptions of others and their own projected presence in online course discussions. The study closes by exploring the implications for its findings for learning and teaching in online asynchronous learning environments.

Keywords: social presence, online communication, online learning community, web-based learning

THEORETICAL FRAMEWORK

Over the past decade, the Internet has had a profound impact on the higher education with the emergence of a new form of distance education – Asynchronous Learning Networks (ALN). The reach of the Internet enables institutions to operate whole universities (Acker, 1995; Noam, 1998), whole programs, and individual courses in the cyberspace. Concurrent with the growth in popularity of implementing ALN courses in adult education is a growing awareness and recognition of alternative theories for learning. These theories suggest there are problems with, and ineffectiveness in, the traditional ways of teaching and learning. The most prevalent theories of learning associated with ALNs are those based on social constructivist principles (Brown and Duguid 1998; Duffy & Cunningham, 1996; Lave and Wenger 1997).

A primary focus of social constructivist theory is on learning through group collaboration and knowledge building. Social constructivists contend that knowledge requires “communicating, comprehending, acknowledging and sharing through group activities and social interaction” (Brundage & MacKeracher, 1980 p.7). Through group interactions, learners encounter multiple perspectives on the topic of discussion from which they synthesize their understanding (Duffy, 1996; Jonassen, 1994; Savery & Duffy, 1995). Interaction is an essential vehicle that enables negotiation of meanings among communication participants. The interpersonal interactions in online discussions, however, tend to be complicated because they take place in an asynchronous, text-based environment (Gunawardena, 1995). A common concern among faculty and students is that the alienated nature of computer-supported programs might prevent students from experiencing a sense of community: a sense of belonging with other students, the instructor, the course and the universities (Haythornthwaite, 2002). Perhaps the most prevailing concern about the features of computer-mediated communication (CMC), from a community perspective, has been the notion that computer-mediated communication could not convey “social presence,” the feeling of “being there” (Short, Williams and Cristie, 1976).

According to Short, Williams & Cristie (1967), social presence is a quality of a medium itself and an important variable influencing the person-to-person communication in the medium. They hypothesized that “the users of any given communication medium are aware of the degree of social presence of the medium and tend to avoid using the medium for interactions which requires a higher degree of social presence than they perceive the medium to have” (Short, Williams and Cristie, 1976, P65). On the basis of this assumption, they argued that text-based CMC, with its lack of nonverbal and vocal communication cues, inhibit the ability of CMC participants to exhibit the necessary social presence to achieve interpersonal relationships. However, field researchers in CMC often report findings which indicate that CMC students engaged in a group dynamic more intense and richer in relational communication than those in traditional Face-to-Face (F2F) classrooms (Walther, 1992) and that CMC provides a highly interactive and social environment which supports instructional engagement that results in student satisfaction and achievement (Boston 1992; Gunawardena, 1994; Harasim, 1994; Richardson & Swan, 2000; Swan et al. 2001). Additionally, studies revealed that CMC users usually

developed the ability to express the missing nonverbal cues (i.e., vocal tones and facial expressions, etc.) in written form with paralanguage¹ (Asteroff, 1987; Hiltz, 1994; Walther, 1992; Swan 2003).

An increasing number of studies have begun to examine social presence, the perception of interpersonal connections with virtual others, as an important factor in the success of online learning (Gunawardena & Zittle, 1997, Richardson & Swan, 2003, Tu, 2000, Swan 2002; Picciano, 2002). Gunawardena & Zittle (1997) developed scales to measure social presence in the computer-mediated communication context and found social presence a strong predictor of overall learner satisfaction in a text-based medium. Congruent results were found in Richardson & Swan's (2003) study; the results suggested that the students' perception of social presence in online courses was significantly related to overall learner satisfaction with the courses, students' perceived learning, and their satisfaction with the instructor. Tu (2000) proposed that social presence, which conveys feelings, perceptions and reactions to others in online discussions, was a vital element in influencing online interactions. Swan (2003) examined students' social presence behaviors through a content analysis of online discussion and found not only increased usage of these forms of written communication, but changes in their functional usage overtime. Picciano (2002) replicated previous results linking perceived social presence with perceived learning and additionally found that student perceiving the highest degrees of social presence also scored higher on written assignments.

The research reported in this paper builds on these previous social presence studies. In particular, it attempts to tease apart the perceived social presence of peers from the perceived social presence of instructors and examines their relative influences on students' satisfaction and perceived learning in online courses. It also begins to explore the relationship between perceived social presence and projected presence in online discussions and to identify factors contributing to perceptions of social presence in online courses.

METHOD

Participants

The participants were fifty-one students enrolled in four online graduate courses in educational technology taught by two instructors at a large public university in the northeast. Fifty-one (out of 91 enrolled students) volunteered to fill out an online questionnaire. Respondents ranged in age from 21 to over 50, approximately two thirds were female, and the majority had taken at least one previous online course.

Design

This study is a mix of quantitative and qualitative methods to obtain better understanding of the students' perceptions of social presence.

First, fifty-one participants were asked to answer the Social Presence and Satisfaction Scale adapted from Richardson and Swan (2003). Changes were made to distinguish between social presence of peers and the social presence of the instructors, to relate perceived learning specifically to online discussions, and to add a perceived interaction construct. The questionnaire gathered demographic information and asked respondents to rank their perceptions of the social presence of their peers and instructors, their satisfaction with their instructors, their perceived learning from online discussions, and their perceptions of interaction among course participants on five-point Likert scales. Data from the questionnaires were analyzed for relationships among the variables using correlational and regression analyses, and significant differences in perceived social presence among differing demographic and other (potentially confounding variable) groups were explored using analyses of variance.

Next, the researchers identified the five respondents with the highest and the five students with the lowest ratings for perceived social presence and grouped them (high and low) in order to examine differences in social presence behaviors and perceptions of online class discussions between the two groups. Discussion messages posted by these students were coded for social presence indicators developed by Swan (2001) using quantitative content analysis to look for the differences in the ways in which these students projected their own presences in online class discussions.

In addition, Semi-structured interviews were, conducted through e-mails and via telephone to explore these students' points of view concerning the issues interaction, instruction, and learning in online class discussions. Their responses were compared using thematic cross-case analysis to explore factors influencing their differing perceptions.

¹ Paralanguage is identified as "features of written language which are used outside of formal grammar and syntax and other features, related to but not part of written language, which through varieties of visual and interpretive contrast provide additional enhanced, redundant or new meanings to the message" (Asteroff, 1987).

RESULTS

What Is The Relationship between Perceptions of Social Presence and Students' Satisfaction with Online Class Discussions?

The questionnaire used in this research was adapted from Richardson and Swan's (2003) social presence survey. Changes were made to distinguish between the social presence of peers and that of the instructors, to relate perceived learning specifically to online discussions, and to add a perceived interaction construct. Besides questions eliciting demographic and other potential confounding variables (gender, age, course, previous online courses, proficiency in navigating and time spent in online discussion), respondents were asked to rate their agreement (on a 5-point Likert scale) with statements concerning their perceived social presence of peers (8), their perceived social presence of instructors (5), their satisfaction with the instructor (1), their perceived learning from online discussion (4), and their perceptions of the interaction among course participants (1). Ratings were aggregated across statements to yield single scores for each variable, and correlations between variables computed (*Table 1*). As in previous studies, all variables were highly correlated, indicating significant relationships among them, with the strongest correlations found between perceptions of social presence (peers and instructors), between these and perceived learning, and between instructors' social presence and satisfaction with instructors.

Table 1: Correlations Between Variables (n=51)

	SPP	SPI	PL	PI
social pres. of peers (SPP)				
social pres. of inst. (SPI)	.70*			
perceived learning (PL)	.70*	.74*		
Perceived interaction (PI)	.62*	.50*	.55*	
satisfaction w/ Inst. (SI)	.56*	.81*	.74*	.41*

* $p < .005$

These findings were confirmed by regression analyses, which also revealed the particular importance of the social presence of instructors in these relationships. Specifically, linear regression indicated that the perceived social presence of instructors predicted 49% of the variance in the perceived social presence of peers, suggesting their strong interrelationship. Multiple regressions revealed that together these two variables were significant joint predictors of satisfaction with instructors (50%) and perceived interaction (40%), but when their joint contributions were controlled for only the perceived social presence of instructors was found significant. Both variables, however, not only jointly, but also individually predicted perceived learning (61%), although the perceived social presence of instructors accounted for nearly twice (24%) the variance predicted by perceived social presence of peers (13%).

To explore other potential factors influencing perceptions of social presence, the mean scores and standard deviations for students' (combined) perceptions of social presence were compared by classes, courses, instructors, and students' demographic and experiential characteristics using analysis of variance. These analyses revealed significant difference in student perceptions only between courses and age groupings. Differences between courses (but not classes or instructors) suggests the importance of instructional design in supporting the development of social presence. Post hoc comparisons of differing perceptions among age groupings showed significant differences only between students under 26 and those over 45 suggesting that younger students were significantly more comfortable with online communication than older students and providing some support for notions of digital natives. No differences based on gender or online experience were found.

How Do Students with Differing Perceived Social Presence Project Their Own Presence in Online Class Discussions?

Combined social presence scores were also used to identify the five students perceiving the greatest and the five students perceiving the least presence of others for qualitative comparisons. The first of these involved a quantitative content analysis of the selected students' discussion postings. These were coded for social presence indicators using Swan's (2003) classifications of affective, interactive and cohesive indicators and aggregated by category using Rourke, et al's (2001) social presence density measure (*Table 2*). Social Presence Density (SPD) is a unit of indicators per 1,000 words obtained by summing the raw number of social presence indicators, then dividing by the total number of words, and multiplying the ratio by 1000.

The results of this analysis reveal that, even though the messages of students perceiving lower social presence contained 1.2 times as many words as students perceiving higher social presence, their messages contained far fewer social presence indicators. They suggest, then, that the perception of social presence is related to its presentation.

Table 2: Social Presence Densities by Group (n=10)

	affective	interactive	cohesive	total
low SP group	17.5	6.7	4.4	28.6
high SP group	26.3	10.0	6.0	42.3

How Do Students with Differing Perceived Social Presence Perceive Their Online Class Discussions?

Students identified as perceiving particularly high and particularly low social presence were also interviewed concerning their perceptions and their experiences in online discussions. Their answers were reviewed for emergent themes and compared across groups using cross case analysis. The qualitative findings support quantitative comparisons between these groups (Table 3) and elaborate on them. Themes that emerged included perceived learning from online discussion and perceived interactions within it.

Table 3: Mean Perception Rating by Group (n=10)

	perc. learning	perc. interaction	perc. SP of instructors	instructor satisfaction
low SP group	3.2	3.0	3.7	4.0
high SP group	4.8	5.0	4.9	5.0

Students who perceived high social presence in the online discussions also believed they learned more from it than did students perceiving low social presence. Comparative analyses of students' interview transcripts revealed meaningful differences in the quality of student perceptions as well. Students in the high social presence group attributed their learning to the contributions of others. They reported benefiting from the ideas of others and the multiple perspectives presented. In contrast, students in the low social presence group attributed their learning from online discussion to their own efforts, stating that they learned by articulating their own thinking in writing their messages.

Comparative analysis of interview responses also revealed differences between groups relative to their perceptions of four categories of online interactions. For example, although all students reported changing their communication styles to adjust to the discussion interface, students in the high social presence group adapted a less formal, more personal and expressive tone, while the low social presence students reported adopting a more formal tone. Similarly, although all students appreciated that discussion questions asked them to relate course content to their own experiences and stated they found this helped them better understand concepts, high social presence students also found this useful for getting to know their classmates, whereas low social presence students were disappointed in their peers' responses, finding them mostly "a waste of time." Indeed, while high presence students found peer interactions "stimulating" and reported developing personal relationships with some students, low social presence students found discussions "uninteresting" and did not develop any interpersonal relationships with their classmates. Finally, although all but one student interviewed reported very positive interactions with their instructors, there were meaningful differences between their perceptions and the one student who felt his instructor was distant. Specifically most students reported that their instructors fostered community building through regular interaction, personal sharing, constructive and prompt feedback, and the encouragement of students' knowledge building efforts. The student with negative perceptions of instructor interaction believed that his instructor should have been more in control of the discussions

EDUCATIONAL SIGNIFICANCE

The results of this study not only extend our understanding of both the importance and the nature of the development of social presence in online course discussions, but suggest ways to support such development. Specifically, they highlight the importance of instructor presence, instructional design, and students' own presentation of themselves in online discussion. They suggest that social presence can be fostered through pro-social instructor behaviors and careful design of online discussions, as well as faculty development focusing on social presence issues. In addition, they suggest that explicit training for students in the importance of social presence, ways of presenting themselves online and the nature of online discussion might help particular students better adapt to the medium. As this and previous studies have demonstrated links between perceived social presence and learning, such findings have both theoretical and practical significance.

REFERENCES

- Asteroff, J. (1987) *Paralanguage in electronic mail: a Case Study*. Unpublished doctoral dissertation, Columbia University.
- Brown & Duguid (1998). Organizing Knowledge, *California Management Review*, 40(3), 90-111.

- Brundage, H., & MacKeracher (1980). *Adult learning principles and their application to program planning* (Research project report). Toronto: Ministry of Education, Ontario.
- Gunawardena, C. (1995). Social presence theory and implications for interaction and collaborative learning in computer conferences. *International Journal of Educational Telecommunications*, 1 (2/3), 147-166.
- Gunawardena, C., Lowe, & Anderson (1997) Analysis of a global online debate and the development of an interaction analysis model for examining social construction of knowledge in computer conference. *Journal of Educational Computing Research*, 17 (4), 397-431.
- Gunawardena, C., & Zittle (1997) Social presence as a predictor of satisfaction within a computer-mediated conferencing environment. *The American Journal of Distance Education*, 11 (3), 8-26.
- Harasim, L. (1990) *On-line Education: Perspectives on a New Environment*. New York: Praeger.
- Hiltz, S. R. (1994) *The Virtual Classroom: Learning without Limits via Computer Networks*. Norwood, NJ: Ablex.
- Jiang, M. & Ting, E. (2000) A study of factors influencing students' perceived learning in a web-based course environment. *International Journal of Educational Telecommunications*, 6 (4), 317-338.
- Lave, J., & Wenger (1997) *Situated Learning: Legitimate Peripheral Participation*. Cambridge: Cambridge University Press.
- Levin, J. A., Kim, H. & Riel, M. M. (1990) Analyzing instructional interactions on electronic message networks. In L. Harasim (Ed.), *On-line Education: Perspectives on a New Environment* New York: Praeger.
- Picciano, A. (2002). Beyond student perceptions: Issues of interaction, presence and performance in an online course. *Journal of Asynchronous Learning Networks*, 6 (1), <http://www.aln.org/alnweb/journal/jaln-vol6issue1.htm>
- Poole, D. M. (2000) Student participation in a discussion-oriented online course: a case study. *Journal of Research on Computing in Education*, 33, (2), 162-177.
- Richardson, J. C. & Swan, K. (2003). Examining social presence in online courses in relation to students' perceived learning and satisfaction. *Journal of Asynchronous Learning Networks*, 7 (1), 68-88.
- Rourke, L., Anderson, T., Garrison, D. R. & Archer, W. (2001) Assessing social presence in asynchronous text-based computer conferencing. *Journal of Distance Education*, 14, (2).
- Short, J., Williams, and Christie (1976). *The social psychology of telecommunications*. London: John Wiley and Sons.
- Swan, K. (2003). Developing social presence in online discussions. In S. Naidu (Ed), *Learning and Teaching with Technology: Principles and Practices*. London: Kogan Page, 147-164.
- Swan, K. (2002). Building communities in online courses: the importance of interaction. *Education, Communication and Information*, 2_(1), 23-49.
- Tu, C. (2000) Strategies to increase interaction in online social learning environments. (ERIC Document Reproduction Service No. ED444550).
- Walther, J. (1994) Interpersonal effects in computer mediated interaction. *Communication Research*, 21, (4), 460-487.