Social Presence in Online Conferences: What Makes People 'Real'?

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Abstract

Online conferencing is increasingly being used as a mechanism for promoting peer discussion in distance education, which has traditionally isolated students. However, online communication lacks the nonverbal and paralinguistic signals normally available in face-to-face interaction that convey the *social presence* (SP) of interlocutors and help interlocutors respond in appropriate ways. This study examined how online interlocutors, in the absence of such cues, establish SP in a wholly text-based environment. The data consisted of the written interactions in two online distance-education courses and interview responses from 12 students. The data were analysed to identify textual elements that conveyed to the students the SP of the interlocutors. Personal and relational cues were identified, out of which six sub-categories emerged. Interactional Prompts, Self-Disclosure Cues and Indicators of Interest in Others were the most highly rated categories. More frequent cue usage was associated with students perceived by their coursemates to have stronger SP. Interview responses indicated that the SP of interlocutors was most essential in collaborative learning tasks requiring negotiation. The findings show how, in the absence of physical proximity, online participants use written text in strategic ways to create SP, and suggest how instructors can better support interaction in online learning environments.

Abstrak

Sidang dalam talian semakin banyak digunakan sebagai mekanisme yang membolehkan perbincangan antara pelajar dalam arena pendidikan jarak jauh (PJJ), yang mana para pelajar secara tradisinya belajar bersendirian. Walau bagaimanapun, komunikasi secara dalam talian tidak dapat menampung petunjuk *nonverbal* dan *paralinguistic* yang terdapat pada interaksi bersemuka, yang menyorotkan *social presence* (SP) *interlocutor* dan membantu mereka berinteraksi dengan cara yang sesuai. Penyelidikan ini mengkaji bagaimana sekumpulan *interlocutor* mewujudkan SP walaupun dalam situasi yang hanya menggunakan teks bertulis. Data kajian terdiri daripada teks interaksi bertulis antara pelajar dalam dua kursus PJJ yang dijalankan secara dalam talian serta maklumat daripada temu bual dengan 12 orang pelajar. Data tersebut dianalisis untuk mengenal pasti unsur berbentuk

teks yang digunakan sebagai petunjuk SP. Petunjuk *personal* dan *relational* telah dikenal pasti, yang seterusnya dibahagi kepada enam subkategori. *Interactional Prompts, Self-Disclosure Cues* dan *Indicators of Interest in Others* merupakan subkategori yang paling penting bagi pelajar. Pelajar yang telah dikenal pasti oleh rakan sekursus sebagai pelajar yang memiliki SP tertinggi didapati lebih kerap menggunakan petunjuk SP. Maklumat temu bual menunjukkan bahawa SP adalah paling penting dalam tugasan yang memerlukan perundingan. Dapatan kajian menunjukkan bagaimana *interlocutor* dalam talian menggunakan teks bertulis secara strategik untuk mewujudkan SP dan meninggalkan implikasi kepada pengajar tentang cara mempertingkatkan interaksi dalam situasi pembelajaran dalam talian.

Introduction

Online conferencing is increasingly being utilised as a learning tool, particularly in distance learning. The benefits of the online conference as an educational medium are numerous. First and foremost, the conferencing tools enable the setting up of online courses that are accessible to learners who are geographically isolated from the instructor, the institution and other learners. Conferencing tools also afford learning environments to be more interactive, as these tools allow the creation of discussion spaces, thereby supporting collaboration and easing the exchange of ideas and information among learners. Thus, instead of being limited to one-to-one communication with instructors, distance learners are able to participate within online learning communities comprising the instructor and other learners.

There are also social advantages to online conference courses. Online conferencing depends wholly or largely on written communication, and is substantially text-based. Thus, there is none or very little likelihood of more vocal learners dominating the discussions, as might occur in oral face-to-face (FTF) exchanges. This phenomenon allows less outspoken learners a greater opportunity to make their views heard, as less proficient or articulate learners have sufficient time to compose, edit, and post their queries and responses.

Despite its obvious benefits, online conferencing is still different from FTF interaction and learning. While the online medium makes it possible to bring people together in a cyberspace conference, the participants' relationship can still be seen as a distant one – both physically and socially. Asynchronous (non-real time) conferencing, in particular, redefines the spatial, temporal and social parameters of communication (Tornow, 1997). Typically, participants experience long lapses between responses, instead of obtaining immediate feedback from instructors and classmates. Online conferences are highly structured – both spatially and temporally – in order for the instructor to organise and monitor discussions, whereas FTF communication is less neatly packaged.

In addition, online written interaction is notably absent of the paralinguistic features available in FTF communication, such as voice quality, facial expressions and body movements that mark the presence of 'real' speakers. Conversational features of communication that signal the presence of other participants in the interaction, such as interruptions, pauses and turn-taking are also absent. The absence of such cues reduces the sense of social presence among interlocutors.

Social Presence

The construct of social presence (SP) is drawn from various studies on the social aspects of communication. Mehrabian's (1969) research on *immediacy*, which he defines as "communication behaviours that enhance closeness to nonverbal interaction with another" (p. 203), indicated that nonverbal cues such as facial expressions, and eye and body movements function as sensory stimulators among interlocutors, leading to a greater degree of 'immediacy' or closeness in the interactions. The presence of these cues also enhances intensity and affect in the interactions. The importance of nonverbal cues in mediated communication was subsequently highlighted by Short et al. (1976), who studied a variety of communication media in organisational settings. Noting the inability of media such as audio tele-conferencing and fax machines to transmit nonverbal cues, they proposed that the resultant communication would be unable to convey the 'richness' of the presence, or the salience, of the interlocutors. Short et al. (1976) thus introduced and defined SP as the extent to which a user of a medium psychologically and subjectively perceives that medium to be able to convey information about the 'salience' of the other communicators. SP determines "...the salience of the other in a mediated communication and the consequent silence of their interpersonal interactions..." (p. 65).

Applying these definitions of SP and characteristics of FTF communication to online interaction, SP can be understood as a sense that online users have of the communicators being 'real' interlocutors with personalities and physical presence, who possess facial and voice qualities, as much as people whom one has never seen or heard can have those qualities. In other words, an interlocutor's SP is like the impression one would have of him or her if that interlocutor were physically present in the communication. Since reciprocity or mutual awareness among the communicators is also important in two-way computer mediated communication (CMC) (Heeter, 1992; Cutler, 1995), a sense of SP has to be mutual as well.

Social Presence and Choice of Medium

In explicating their theory of SP, Short et al. (1976) suggest that there are varying extents to which media users psychologically perceive those interacting with them to be physically present. Media perceived to have a high degree of SP were those that were judged to be personal, warm, sensitive and sociable. The theory proposes that people recognise differing amounts of SP afforded by different media; consequently, people choose to use a medium based on the degree to which social presence is necessary for the particular communication task.

Short et al. (1976) were basically referring to the choice of physical media such as e-mail and video-conferencing, but their theory invites us to think about how interlocutors also make choices in the use of the linguistic medium – language – to establish social presence, when the physical medium has already been determined for them. Online conference participants communicate almost purely through the medium of language, and if interlocutors seek to establish SP, then online participants will incline toward language use that constructs and maintains a sense of SP. Although much of the literature suggests that CMC lacks the capacity to support the richness of social and affective interaction because it 'filters' cues that would be found in FTF communication, more recent reviews of the literature suggest that users of the online medium are finding ways to invest the interactions with affect, making the interlocutors more 'salient'. Walther (1992), for example, characterises some cases of CMC as 'hyper-personal' rather than the predicted impersonal (p. 9). Walther (1996) cites several studies in which "...experienced CMC users rated text-based media including e-mail and computer conferencing as 'as rich or richer' [in social and personal cues] than telephone conversations and face-to-face conversations..." (p. 18). Thus, one of the aims of this study is to examine more closely how language is used to convey the affective and nonverbal aspects of SP. A study of the written discourse in online courses and interviews with the course participants could help identify types of language acts and textual strategies that convey a sense of the SP of interlocutors, and illuminate our understanding of how SP is established and maintained in online conference courses.

Social Presence in Online Conference Courses

One of the primary goals of discussion in educational settings involving adult learners is to encourage them to "...undertake intellectually challenging and personal precarious ventures in a nonthreatening setting..." (Brookfield, 1986: p. 135). It is hoped that adult learners can exchange information, articulate changing ideas and opinions, and engage in productive arguments over differing

perspectives. For a setting to be non-threatening, however, there has to be a degree of comfort and trust – qualities that may not be easily established when interlocutors never meet. Eastmond's (1992, 1995) studies on adult distance-education learners document their views that they sometimes feel alone and cut-off, and that they lack the sense of communicating with real people. There are also learners who feel they are not able to present themselves as real personalities (e.g. Eastmond, 1995; Leh, 1997; Tornow, 1997; Banks, 1998).

These expressions of need for a sense of SP are not surprising in light of the substantial evidence available on the importance of nonverbal cues in communication. Studies on body language such as facial expressions, hand gestures, nods, and bodily orientation (e.g., Argyle, 1988; Goldman, 1994; Burgoon et al.,1996; Segerstrale & Molnar, 1997) and prosodic features or paralinguistic cues in speech such as intonation and pauses (e.g. Crystal & Quirk, 1964; Bolinger, 1989; Clenell, 1997) show that these features contribute to the overall message of a speaker.

Short et al. (1976) explain that these cues carry information about a person's self-image, attitudes, moods and reactions that impact the affect of the interaction. They further postulate that while the affective element may not impact the transmission of cognitive information, its presence or absence is more likely to be felt during interactions in which the expression of emotion (and perception of this emotion) is an important part of the interaction, particularly where there is a great need to manipulate others. This view is echoed by Daft and Lengel (1986) who, while agreeing that terse, pragmatic, very simple messages without nonverbal dues are sufficient for effective communication in the lean medium of CMC, assert that for participants in a CMC situation to understand information that is ambiguous, emphatic, or emotional, a richer medium is needed. This view suggests that if participants of online interactions have to deal with extended discussion that involves debate, negotiation and emotion, the medium would have to be richer, in that it would need to support a greater degree of SP or what Shin (2003) refers to as transactional presence. One type of task that would call for manipulative interaction is a collaborative problem-solving task or inquiry project requiring its participants to negotiate in order to reach a consensual decision or solution. Such tasks are currently found in abundance in online courses.

Purpose of the Study

Previous research conducted on the effectiveness of online learning communities and online courses have focused on factors related to course design, learning tasks and instructor effectiveness (Schulman & Sims, 1999).

While these factors are important variables in determining the effectiveness of online courses learning communities, the success of learning communities also depends on the social relationships that are established among the students. Other studies conducted on the social aspects of online interaction have focused on online users' descriptions of their experiences, noting positive and negative reactions to participation in online courses (Eastmond, 1995; Walther, 1992, 1996; Tornow, 1997). Studies have also examined differences between online communication and FTF interaction (Ma, 1996; Galegher & Sproull, 1998; Mikulecky, 1998). Research on language in online communication has also been carried out, describing the textual aspects of online interaction: describing language conventions and specific textual characteristics that have been observed in online writing (Davis & Brewer, 1997; Yates, 1996). However, the research focused on communication conventions found in the primarily social and recreational activities of real-time MOO and IRC.

While these studies provide valuable theoretical and practical information about online learning communities and online instruction, there is a scarcity of studies examining how developments in online language may be related to the social needs of online learning communities. Although research on the development and use of communication conventions in computer mediated instructional environments has been conducted (Harasim, 1989; Hiltz, 1994), and there have been suggestions that SP has to be supported by appropriate didactical arrangements and instructional measures (Hron & Friedrich, 2003), only one other study (Rourke et al., 2001) appears to have been explicitly aimed at relating the use of linguistic (textual) strategies to the construct of SP in online communication. In light of the fact that the social dynamics of online learning communities are established almost solely through the written interactions, that relationship needs to be further researched. This study contributes to that body of research by examining how language use is related to one social aspect of online participation – the need to perceive and establish social presence.

The purpose of this paper is:

(i) to identify communication conventions and strategies perceived by online conference participants to be SP cues, and

(ii) to determine the importance of SP cues to participants engaging in particular learning tasks in online courses.

Context of Study

Respondents

The respondents for the study were 12 graduate students enrolled in two online courses. A total of 22 students were enrolled in the courses, but only 12 of them were able or willing to participate in the study. Four were males and eight females, and their ages ranged from 25–60. They were located in various parts of Asia and the United States. None of these respondents had met FTF, and were incommunicado except for the online course conferences.

The Courses

One of the two graduate courses in which the respondents were enrolled was taught by the researcher, and the other by a colleague from an American university. One was a course on issues in language instruction and the other a course on issues in information and communication technology (ICT) use. The courses shared a number of features. First, both were taught completely online for a total of 14 weeks. They were both conducted using an Asynchronous Conferencing Tool (ACT) environment designed and maintained by a graduate student in the American university.

Besides sharing a similar online environment, the courses shared tasks that were similar in nature. These tasks were also presented in the same sequence, as follows: each course began with highly structured questions and tasks to which students posted individual answers (and others could respond if they wished so). After three weeks of structured questions, the students were assigned questions or tasks that required them to explore their personal perspectives and interests in relation to the issues discussed. The final task in both courses was a collaborative inquiry tasks in which students were required to work in groups to solve a given problem.

Both instructors thus placed great emphasis on peer interaction and peer response to questions and issues raised. The interaction was considered important not only as a source of information but also as a prompt for further discussion on a topic.

Data Collection and Analysis

There were two sources of data for the study: (i) the respondents' posts in the online conferences, and (ii) their responses to interview questions sent via e-mail. Both sources of data were examined to yield data on what respondents considered to be indicators of SP or SP cues.

After the courses had ended, the students were contacted by e-mail and asked whether they would agree to participate in the study, and whether they agreed to let me examine their online posts. Although no one objected to their posts being studied, only 12 students were able to act as respondents for the study. The e-mail interviews were thus conducted with only the 12 students.

Procedure

The data collection and analysis procedure consisted of two main steps.

Step 1: Identifying Social Presence Cues (SPCs)

First, the respondents were asked to (i) identify two classmates whose SP they had felt the most and two classmates whose SP they had felt the least, and (ii) identify messages posted by those classmates which best contributed to that impression. Students from each course were ranked only by the respondents enrolled in that course. The result was a list of eight students: four who were top-ranked, and four who were bottom-ranked. The interview questions used to elicit this information were included in the first round of e-mail interview questions sent as follows:

(i) Here is a list of your classmates:

    (a) Please rank order them in terms of whose SP you felt the most, that is, in terms of how much you had a sense of interacting with people who were physically present in the communication, rather than with virtual objects.

    (b) Please explain why you ranked them that way.

(ii) You placed at the top of the list of classmates whose presence you felt the most. Can you identify two postings (or blocks of interactions) which defined him/her best? What did he/she write that gave you that impression?

    Another question asked in the subsequent round was:

    Did you do anything in your postings to convey an image of yourself to the rest of the class? Can you give examples?

The cues identified by the respondents in their responses to the above questions became one source of data. However, the conference posts which they identified were also a source of data to be subjected to further analysis for

indicators of SP. Some of the initial responses to these questions were too general, requiring inferences to be made about what constituted SP cues, so a follow-up question was posed that would prompt the respondents to directly identify cues, as follows:

> *What elements in the written interaction conveyed, or could convey, a sense that you were interacting with a real person?*

The respondents did not always explicitly name the SP cues, and some of them had to be inferred from the respondents' descriptions of their classmates, and from an examination of the postings that, according to the respondents, best defined those classmates. My interpretations of those interview responses were included in the member checks, during which my interpretations of each respondent's responses were sent back to the respondents via e-mail for validation.

Using a constant-comparative process of analysing data for emergent themes or categories, I analysed the interview responses and identified six categories of characteristics associated with interlocutors who were judged to have strong SP, and 12 sets of cues that conveyed those impressions. Three categories of characteristics were designated with more than one set of cues. An online instructor familiar with the ACT conferencing tool was given a list of cue set headings and the transcripts of 15 sample interview responses. This co-rater was asked to assign each interview response to one of the sets given, and to indicate if set headings needed to be added or revised. We disagreed on the assignment of one interview response, resulting in an inter-rater agreement rate of 93.3%. Subsequent to our discussions, I also re-assigned one sub-category of cues.

The cues identified in the responses to all the above questions were added to the list of cues identified from the literature and from a personal examination of online conference course postings. The result was a combined list of SP cues reflecting categories determined a priori as well as new sub-categories.

Step 2:   Rating SPCs

After the SP cues had been identified, a list of the cues (randomly reorganised and with the labels removed) was sent by e-mail to each of the respondents, along with the question:

> *Which of these items, in your opinion, helped convey a sense of the persons(s) you were interacting with, in the absence of FTF communication? (Please check each item).*

The purpose of this exercise is to:

(i)   determine which SP cues were most contributory in establishing the SP of interlocutors, and

(ii) identify the top 50% of the twenty-two cues that would be examined later for the frequency of their occurrence in the online postings.

The respondents' ratings determined the extent to which each category and sub-category of cues was considered to be contributory in establishing the SP of interlocutors.

Results

The findings of the analysis show that interlocutors with strong SP can be associated with six characteristics, as indicated by communicative acts identified in their postings. These communicative acts may thus be considered SP cues.

Characteristics of interlocutors with strong SP

Characteristic #1: They engage in self-disclosure

Interlocutors with strong SP disclose information about themselves more readily. They do this by making or using:

(i)   statements of emotion
(ii)   emoticons
(iii) references to real-life experiences

Characteristic #2: They initiate and support interaction

Interlocutors with strong SP tend to initiate and support interaction among class participants, by voicing:

(i)   invitations to others to react
(ii)   expressions of support
(iii) requests for support or clarification

Characteristic #3: They demonstrate an interest in others

Interlocutors with strong SP demonstrate an interest in others through:

(i)   expression of interest in others' lives and experiences
(ii)   discussion of interests shared in common with others

Interlocutors with weak SP do not show evidence of such interest.

Characteristic #4: They maintain an informal, unassuming tone

Interlocutors with strong SP maintain an informal, unassuming tone in their interactions with others. They maintain this tone through initiation of and responses to playful or humorous remarks or 'asides'.

Characteristic #5: They demonstrate courteousness

Interlocutors with strong SP demonstrate courteousness towards others by making the effort to capitalising of the first letter of classmates' names. Interlocutors with weak SP do not appear to observe this practice consistently.

Characteristic #6: Demonstrate logic and intelligence

Interlocutors with strong SP articulate logical, intelligent opinions more than others.

SP Cues

The respondents' descriptions of their classmates in response to the SP ranking task focused on two dimensions of interlocutor behavior: how interlocutors revealed information about themselves, and how they interacted with others. These two dimensions corresponded with the division of SP cues identified a priori, into two groups: personal cues that convey self-revealed information by an online interlocutor, and relational cues that characterise an interlocutor's role as a participant in the communication. The 12 sets of cues identified by the respondents in this study were thus assigned to one of these two groups of SP cues.

Eight of the 12 sets of cues corresponded with eight sub-categories in the priority list of cues as follows:

Personal cues
Category: Self-disclosure cues

- Statements of emotions
- Emoticons
- References to real-life examples

Relational cues
Category: Tonal indicators

- Playful/humorous remarks or 'asides'

Category: Interactional prompts

- Requests for support
- Clarification seeking
- Expression of interest in others – lives and experiences
- Discussion of interests shared in common with others

The remaining four sets of cues emerging from the study had not been identified a priori. I classified one of the sets under a new category of personal cues, and the other three sets under two *a priori* categories of relational cues as follows:

Personal cues
Category: Demonstrations of intellectuality

- Articulation of logical, intelligent opinions

Relational cues
Category: Interactional prompts

- Invitations to others to react
- Expressions of support

Category: Demonstrations of courtesy and interest in others

- Capitalising of the first letters of interlocutors' names

The addition of the element of *intellectuality* to the body of SP cues previously identified indicates that SP in online academic situations is also established through demonstrations of academic expertise. The acknowledgment of *courtesy* shown through the use of written conventions is an indication of online interlocutors' evolving perspectives on communication etiquette as a result of the use of the online medium. Although these two sub-categories of cues were the most interesting, the largest category of cues identified by the respondents consisted of six *interactional prompts*, followed by four *self-disclosure* cues, suggesting that these categories of elements might be the most important strategies by which SP was established online for the respondents.

The respondents' ratings determined the extent to which each category and sub-category of cues was considered to be contributory in establishing the SP of interlocutors. The results show that the categories of cues receiving the highest ratings were *interactional prompts* (70%), *demonstrations of courtesy and interest in others* (67%), and *self-disclosure cues* (67%). These ratings were consistent with the results of the earlier analysis of interview responses, in which the largest category of SP cues identified by respondents

was *interactional prompts*, followed by *self-disclosure cues*. Respondents also indicated that *demonstrations of courtesy and interest in others* were important.

The top 50% of the 22 SP cues consisted of 12 cues from five categories. There were 12 instead of 11 cues as there was a tie among four cues for the next highest rating after the first eight had been identified. The cues are as follows:

Category: Interactional prompts (These cues represent 83% of the cues in the category.)

- Invitations to others to react
- Requests for support
- Addressing of others by name
- Expressions of support
- Greetings

Category: Self-disclosure cues (These cues represent 40% of the cues in the category.)

- Reflections on personal perspectives
- Expressions of emotions
  (These cues represent 40% of the cues in the category.)

Category: Demonstrations of courtesy and interest in others
(These cues represent 67% of the cues in the category.)

- Capitalising the first letter of interlocutors' names
- Discussion of interest(s) shared in common with others

Category: Allusions to physical presence (These cues represent 50% of the cues in the category.)

- Allusions to being physically present in a conversation
- Text evoking sensory experience

Category: Tonal indicators (This cue represents 25% of the cues in the category.)

- Playful or humorous remarks or asides

Ten of the 12 cues are *relational* elements, a summary of which is listed in Table 1and they represent more than half (63%) of the items from the category of relational cues. The categories containing the greatest percentage of the top 50% of SP cues, in decreasing order, were *interactional prompts* (83%), *demonstrations of courtesy and interest in others* (67%), *allusions to physical presence* (50%), *self-disclosure cues* (40%), and *tonal indicators*.

Taken together, the ratings for SP cue categories and the top 50% of SP cues show that *interactional prompt cues* and *demonstrations of courtesy and interest in others* were the most highly rated categories of cues. These results suggest that for the students from the two online courses in this study, personal SP cues were important in establishing SP, but *relational* cues appear to have been more contributory.

An analysis of the messages posted by students with strong SP showed that their postings were richer in both personal and relational SP cues throughout the duration of the course, than postings by students perceived to have had weak SP, as shown in Table 1.

Table 1 Mean frequency of social presence cue occurrence per posting for interlocutors perceived to have strong and weak SP

SP cue occurrence (for top 50% of SP cues) in various parts of the course	Mean frequency of cue occurrence per posting	
	Interlocutors with strong SP	Interlocutors with weak SP
Beginning (Task: Responding individually to questions based on course readings, assigned by instructor)	2.05 (Range: 0 - 4)	1.04 (Range 0 - 3)
Middle (Task: Open-ended critique of course readings, examining personal perspectives on issues, sharing resources)	3.7 (Range: 1- 6)	1.9 (Range: 1- 4)
Ending (Task: Small-group collaborative project)	4.3 (Range: 1-7)	2.0 (Range: 0.4)

These results also show that the frequency of occurrence for particular SP cues varied across learning tasks. Noticeably, conferences that took place in the initial portion of the courses contained less SP cues overall than conferences that took place in the middle portion of the courses and during the collaborative task (as in Table 2).

Table 2 Mean frequency of SP cue occurrence, by category, in messages posted by interlocutors perceived to have strong and weak SP

Parts of the course	Categories of cues	Mean frequency of cue occurrence	
		Strong	**Weak**
Beginning	Interactional prompts	0.5	0.3
	Expressions of interest in others	0.5	0.2
	Self-disclosure cues	0.7	0.4
	Tonal cues (humor/asides)	0.3	0.09
	Allusions to physical presence	0.05	0.05
Middle	Interactional prompts	1.0	0.3
	Expressions of interest in others	1.4	1.1
	Self-disclosure cues	0.7	0.3
	Tonal cues (humor/asides)	0.4	0.1
	Allusions to physical presence	0.2	0.1
Ending	Interactional prompts	1.6	0.9
	Expressions of interest in others	1.6	0.7
	Self-disclosure cues	0.3	0.2
	Tonal cues (humor/asides)	0.5	0.1
	Allusions to physical presence	0.3	0.1

A two-way chi-square test done on the results in Table 2 determined that the difference in SP cue occurrence between the two groups was not statistically significant (0.32, df = 2). This was most likely due to the small number of respondents.

The nature of the learning tasks was most likely a contributing factor to the pattern. Initial tasks mainly required students to post responses to assigned questions. During that part of the course, there was relatively little *self-disclosure* (an average of four cues found in 20 postings), not a substantial number of *interactional prompts* (seven per 20 postings), and barely any allusions to having an oral conversation (very few occurrences of sensory cues and expressions suggesting physical presence of interlocutors). The total effect was that there was little semblance of conversation taking place.

As the courses progressed and the students were asked to voice personal perspectives on issues to a greater extent, as well as to share resources in addition to critiquing course readings, there was an increase in *interactional prompts*, *self-disclosure cues* (twice as many as were found in the initial part of the course), and *demonstrations of interest in others*. This indicates that students were probably volunteering information about themselves, expressing their sentiments more freely, and inviting reactions from others in various ways. There was also an increase in addressing classmates by name and engagement in humor and 'asides'.

The final portion of the course where the collaborative inquiry took place saw the greatest number of SP cues overall. In particular, there was an even greater increase in *interactional prompts* (15 cues per 20 postings), as students exchanged ideas, argued and made decisions. *Allusions to physical presence* were more abundant here as well, adding to the conversational tone of a group coming together to 'talk' things over. The use of names appears, too, to have been much higher than in other parts of the course, averaging 15 cues per 20 postings, as small-group conversation dominated. Participants were delegating responsibilities and reporting back on assigned duties. At this point, however, *self-disclosure* had declined to a minimum of five cues per conference, as the focus was on the group. Participants were more intent on forwarding ideas for the purpose of getting group members' opinions, rather than for the purpose of self-revelation. Throughout the course, *interactional prompts* and *demonstrations of interest in others* were the most dominant cues. This result is consistent with the highest ratings these categories of SP cues received. The first group was most dominant in collaborative situations, while the second was most dominant during tasks requiring the sharing of   personal information and perspectives.

These patterns of cue usage can also be seen in the cue usage patterns of students perceived to have strong social presence. The similarity may have been impacted by the greater proportion of students with strong SP than students with weak SP participating in the conferences sampled from those portions of the courses, particularly in the collaborative task portion of the courses, where the ratio was 12 to one. The number of messages posted by the students with strong SP, in proportion to the total number of postings examined, was lowest (three out of 20) in the portion of the course with structured questions, increased to four out of 20 (or one-third) of the messages in the tasks calling for personal perspectives and sharing, and highest (12 of 20 postings) during the collaborative tasks. This pattern suggests that the impression made by students with strong SP may have been strongest during the collaborative tasks due to the sheer number of their postings to that portion of the course. However, the relatively more modest number of postings by that group of students in conferences from other portions of the course suggests that it was their richer cue usage during those conferences that made an impression on the participants.

Discussion

The cue categories identified in this study correspond closely to those identified by Rourke et al. (2001). The findings indicate that what makes online participants seem real to the majority of the respondents, and what contributed to their presence being felt despite the absence of a physical venue for the

interactions was the extent to which the participants established themselves as interlocutors who sustained the conversation and discussions (established through interactional prompt cues), and their ability to maintain an informal, conversational tone in the academic discussions (established through the use of humor and off-topic remarks). Another important cue is the courtesy and respect they showed other interlocutors even in an online medium (established through demonstrations of courtesy and interest in others). SP is also moderated by the willingness and openness with which participants disclosed information about themselves (established through self-disclosure cues). For classmates to sense one's presence, evidence of one's content knowledge or intelligence did not appear to be as important as evidence of one's contribution as a member of the learning community. The study also shows how closely one's written postings can create the impression that the interlocutors are physically present in the communication (established through allusions to physical presence).

The relevance of these findings to online learning and instruction can be better understood when considered together with the social aspects of participating in online courses and the challenges posed by the limitations of the medium. Online conferencing provides a mechanism for bringing together students, particularly distance-education students who would otherwise be isolated, allowing them to exchange views and information with peers. However, it is a relatively impersonal medium because of the absence of the physical proximity of interlocutors and the accompanying nonverbal cues that facilitate interpersonal communication in FTF meetings. This presents a challenge to the development of rapport and comfort among the participants which would otherwise expedite discussion among members of a learning community. The second limitation of the online medium that has an impact on the social constructivist approach to learning is the asynchronous nature of the medium which makes the interaction seem slow and inhibited compared to the much quicker response time in FTF interaction. One respondent articulated the student perspective best when he wrote in his general comments about online interaction:

> ...I see the interaction in an asynchronous environment like ACT as more closely akin to that of colleagues at different universities arguing a point by writing responsive journal articles. The process is slow and is very unsatisfying in the way of gaining insights from your classmates or teachers. Text[-]based interaction in general lacks the backchannels that comprise so much of the meaning in FTF communication. By removing text interaction from [its] temporal component as well you lose an even larger chunk of meaning. The hundreds of questions that would normally be asked in a FTF discussion about the subjects in the course are reduced to only a few because of the sluggishness of the medium. Arguments develop

> during the course of [FTF] discussions in response to questions that arise. That evolution is slowed to the point [in asynchronous communication that] it almost dies... The format just couldn't hold a candle to arguing a point with a professor or fellow classmate FTF, and with others able to contribute and steer the topic as well. This is particularly important to me because of my learning style. I absorb quickly, and for that reason desire quick (read instantaneous) answers to my questions. This helps me sort things out and organise them in my head. Without immediate answers it turns from a learning experience into just another book. And an expensive one at that...

The third limitation of the online medium lies in the structural organisation of the online conference. Although the conferencing tool supports free accessibility to current and previous conferences, the way a tool is structured could pose navigational problems. For example, in both courses which used ACT, there were students who posted to the wrong location in the conference, causing confusion and slight, temporary friction. One of them inadvertently wandered into the wrong group conference and who felt slighted when a classmate sent a short, succinct message to say she did not belong there. Admittedly, such mishaps also happen in FTF situations, but the wait time before mistakes are clarified in such situations is much shorter, and what appears to be a brusque message in online interaction may not sound as terse when said with a smile.

These limitations present challenges to participating in online conference courses and necessitate the use of strategies that can overcome the limitations. All communication works using particular symbols or cues, and communication is successful when those cues convey similar meanings to the communicators involved.

Members of a learning community also operate with what they believe or perceive to be a shared sense of things and commitment to a body of symbols. The online learning community in this study also subscribed to symbols or cues that helped the participants – the majority of whom were interacting in an online conference for the first time – make sense of a new environment in which interlocutors were unseen and unheard, and the reactions considerably delayed. SP cues helped the participants develop a sense of each interlocutor, which was essential for meeting the task requirements set by instructors. Hron and Friedrich (2003) note that social presence in CMC cannot exist to the extent that is typical of FTF situations, but it is clear that the participants were able to strategically use linguistic textual features to develop cues conveying paralinguistic information.

The act of developing strategies does not mean that online users necessarily plan the use of these cues as strategies. Rather, my speculation is that their

discourse develops in response to reality, as Krippendorff (1980) suggests, in this case, the reality of asynchronous online interaction in which the interlocutors do not meet FTF. Online users react to the limitations of the medium and the demands of the learning tasks by making use of the medium's affordances. For example, the high incidence of self-disclosure cues suggests a strategy online participants use to address the lack of information they would get from meeting in person. In his comparison of web-based and campus-based versions of a graduate course, Mikulecky (1998) also reports a higher level of self-disclosure and openness in sharing and reflecting upon troubling professional experiences in the online version of the course than in the campus-based version. Griese (1998), too, observes that online users manipulate the written text for graphic self- representation. Mikulecky (1998, p. 90) speculates that,

> ...the safety of drafting one's comments away from an immediately present audience had something to do with [the high incidence of self-disclosure cues]. A related factor may be that the time allowed by electronic discussion for consideration between comment and response provided the opportunity for classmates to give thoughtful, tactful support instead of instant reactions or no reactions. This support seems likely to have encouraged further sharing and reflection...

The large number of *relational* SP cues identified by the respondents, and the high rating assigned to that *interactional prompts* and *demonstrations of courtesy and interest in others*, indicate that members of an online community sense the presence of their colleagues not only through their intellectual contributions, but also on the role they play as social beings in the learning process. Students with strong SP generally showed more interest in classmates through demonstrations of support and interest, and by prompting reactions. In the collaborative inquiry task conferences, in particular, the findings showed that students with weak SP not only posted half as many messages as students with strong SP, but the postings for the first group had much fewer relational cues. The latter group of students made a greater effort to establish interaction in addition to discussing the content of the task.

These observations suggest that in a social constructivist learning environment where the objective is for participants to reach new understandings through discussions with others, establishing and maintaining interpersonal relationships is important. In addition, an observation of the interactional patterns of the participants (not reported in detail here) shows more complex interactional patterns associated with students with strong SP, indicating that students who are more successful at establishing interpersonal relationships become involved in richer discussions that explore a wider range of perspectives.

Implications for Online Learning and Instruction

De Laat and Lally (2004) consider social presence a significant variable in any educational context and can affect the possibility of meaningful and balanced online discussions. The findings from this study suggest that instructors can play a role in developing of an online learning community whose members hope to learn through interacting meaningfully with others. If SP is important in the development of online learning communities, and if students with strong social presence are judged to be successful online participants, instructors can facilitate the process of establishing social presence.

First, instructors can make use of course requirements and learning tasks to encourage the occurrence of SP cues that help create the sense that a conversation among real interlocutors is taking place. As two respondents indicated, some courses focus only on students posting answers to questions, or expressing their own views, without meaningful and honest discussion that bonds class members. On the other hand, integrating self-introductions, reflections, responses to classmates' postings, and online collaboration into a course's requirements may lead students to actively establish their presences. Second, it is important for instructors to model the kind of behaviour that characterises a participant with strong social presence, such as setting a conversational tone, posing questions to others and inviting their reactions, examining personal perspectives, explicitly acknowledging students by name, and acknowledging their experiences and interests.

Conclusion

Many challenges face instructors and learners involved in online learning communities. The online medium brings numerous benefits, but it lacks cues that FTF interaction provides. This does not necessarily mean, however, that FTF interaction is preferable, but that the FTF mode of communication still appears to be a point of reference for online participants, particularly for those communicating online for the first time. What is clear from the study is that members of online learning communities perceive the need for a sense of interlocutors' SP, particularly in tasks requiring trust and comfort among participants. SP is defined by the extent to which interlocutors reveal themselves and how they play their roles as participants in the interaction. It also does not seem to be defined by any one characteristic, but is the sum of parts: a combination of factors – frequency of participation, SP cue usage, and interactional patterns – appears to play a part in determining whether online participants become real to others in a virtual learning environment, and whether they establish themselves as interlocutors with strong or weak SP. In the

absence of physical proximity, the medium of written language remains an important means of conveying and perceiving SP.

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