Student's Perceptions of Social Presence in an On-Line Course Using Student Presentation Software

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Abstract

On-line education offers flexibility for today's learner; however, they may perceive a lack of presence and engagement in this environment. Using the Community of Inquiry Model (COI) comprised of teacher, cognitive, and social presence, the authors examined perceptions of social presence among nursing students enrolled in five on-line courses. They also explored whether the use of oral/video software as a teaching strategy enhanced social presence. A Social
Presence Scale developed by Gunawardena and adapted by Cobb was used to survey students. Findings revealed a significant relationship between social presence and instructor satisfaction; and the number of different interactive teaching techniques employed by the instructor, such as introductions with texts and pictures. The use of oral/video software, YouSeeYou®, was also noted to foster social presence among the respondents. As the components of the COI Model are interdependent, it was found that all three are needed to support student learning goals.

The growth of online education over the past decade has provided increased educational opportunities for nursing students to achieve their academic goals. These asynchronous courses offer flexibility for both the instructor and the learner. Learners receive the information when it's most convenient and act upon the assignments when they have time to do so. Learners have time to assimilate the information and place it in the proper context and perspective prior to interaction. The disadvantage of an online offering is that learners may lack a sense of presence and engagement. Literature reveals that as blended and asynchronous learning has become increasingly popular in today's university/college settings, there has been an increasing need to enhance the courses to foster student engagement, critical thinking, and the achievement of learning outcomes. In addition, nurses in today's workforce need to be able to communicate effectively with individuals and groups, collaborate with other professions, solve problems, and skillfully use technology in their professional roles [1]. The use of the Community of Inquiry Model [2], comprised of three elements, cognitive presence, teaching presence, and social presence, has been shown to support effective educational transactions and learning in a computer mediated format.

Cobb [3] noted that social presence is a key influence of the quality of on-line instruction from a nursing student perspective. She used the Social Presence Scale developed by Gunawardena and Zittle [4] to assess satisfaction with online education; her results indicated that the participants perceived themselves as "real" or present in the on-line course offering and were likely to take additional asynchronous on-line courses in the future.

Figure 1. Community of Inquiry Model reprinted with permission from D. R. Garrison (2011)

Social presence is identified as one of three core elements for an educational experience in a conceptual framework/model of community of inquiry (COI) developed by Garrison, Anderson, & Archer [2] (Fig. 1) for use in computer mediated education. Subcategories within social presence include open communication, group adhesion, and expression of emotion. Garrison et al. supported the premise that social presence is needed to sustain a community of learners in an on-line course offering. According to the authors of the COI Model, social presence is the ability of the learner to project his/her personal characteristics as "real people" into the community of inquiry [2]; [5]. Garrison in 2011[6] revised the definition slightly as "the ability of participants to identify with the group or course of study, communicate purposefully in a trusting environment, and develop personal and affective relationships progressively by way of projecting their individual personalities" (p. 34). Another factor in social presence is recognition. Garrison et al. [2] describe recognition as the "fuel" needed to develop and maintain relationships in an online learning environment. Acknowledging student contributions as well as complimenting and encouraging students contributes to social presence in the absence of body language, eye contact, and smiles which are used in a face to face venue to demonstrate support [7].

Teaching presence, including the course design, facilitation, and active involvement by the instructor, fosters social and cognitive processes and positive learning outcomes [8]. Examples of teaching behaviors that promote social presence among learners are displaying humor, engaging in selfdisclosure, greeting learners by name, alluding to shared physical space and acknowledging and supporting learners' ideas [7]. Learners construct meaning via sustained communication and activity, and tools are needed to assess critical discourse and

reflection. YouSeeU® presentation software program is an example of such a tool. The software exists on a website where students are able to use their web camera and microphone to record a video of themselves giving an oral presentation. Alternatively, students can use a digital camera or other device to create the video and then upload it to the website. In addition, the students can upload Powerpoint® slides to synchronize with their presentation. The resulting videos can be individual or combined into a group presentation. There is also an interface where peer comments and instructor comments can be recorded. The purpose of this study was to determine perceptions of social presence in online RN-BSN courses and to ascertain whether the use of oral and video presentation software (YouSeeU®) in an online course affects students' perceptions of social presence.

Method

Sample and setting

Table 1. Social Presence Scale by Gunawardena & Zittle (1997) as adapted by Cobb (2009)

1.	Messages in the online course were impersonal
2.	Computer-mediated communication is an excellent medium for social interactions
3.	I felt comfortable conversing through this text-based medium
4.	I felt comfortable introducing myself in the online nursing course
5.	The introductions enabled me to form a sense of online community
6.	I felt comfortable participating in the course discussions
7.	The instructor created a feeling of an online community
8.	The instructors facilitated discussions in course
9.	Discussion using the medium of computer-mediated instruction tend to be more impersonal than face-to-face discussions
10.	Computer-mediated discussions are more impersonal than audio teleconference discussions
11.	Computer-mediated discussions are more impersonal than video teleconference discussions
12.	I felt comfortable interacting with other participants in the online course
13.	I felt that my point of view was acknowledged by other participants in the course
14.	I was able to form distinct individual impressions of some course participants even though we communicated only via a text-based medium

This descriptive study was reviewed and approved by the California State University, Fullerton, and Institutional Review Board and used a previously validated survey questionnaire (Table 1) to query all students enrolled in online RN to BSN nursing courses during spring semester 2013. A total of 91 RN – BSN students in the School of Nursing (SON) from the total population of 377 students responded regarding their perceptions of social presence in five online BSN nursing courses, including Professional Nursing, Nursing Research and Evidence-based practice, Art and Science of Nursing, Advanced Concepts (physical assessment), and Community Health. Students were also queried regarding the use of student presentation software that incorporated asynchronous video and slides in a single interface in one (N305) online course.

An explanation of the study was provided by the researchers to the respondents via an Adobe Connect® webinar. A cover letter explaining the study was also included on Survey Monkey®. By completing the survey, the students voluntarily agreed to participate in the study.

Instrument

The survey used was adapted from the Social Presence Scale (SPS) originally developed by Gunawardena & Zittle [4] and subsequently adapted by Cobb [3]. In Gunawardena and Zittle's original work, social presence was found to be a strong predictor of student satisfaction in computer-mediated courses. Cobb [3] used the Social Presence Scale and Satisfaction Scale [4] to query students in an online RN to BSN program to evaluate student perceptions of social presence and satisfaction with courses. She made a minor adjustment to the scale by changing the word "GlobalEd" (the computer-mediated conferencing platform) to "online nursing course" or "course." Cobb [3] found that students were "comfortable relating and interacting in the online environment and are satisfied with online courses" (p. 241).

Permission to use the Social Presence Scale was procured by the authors from Gunawardena. The adaptation made by Cobb [3] was retained for this study (the word "GlobalEd" was replaced by the words "online course"). The instrument was comprised of 14 items measured on a 5-point Likert Scale where 1 = strongly disagree, 2 = disagree, 3 = uncertain, 4 = agree, and 5 = strongly agree. The survey questionnaire also queried participants about the types of activities/media used in their respective courses and had them rank activities they perceived as most influencing their feelings of "being part of the online community of learners."

Analysis

All analyses were conducted using SPSS version 20. Descriptive statistics were used to highlight the demographic characteristics of the sample population and to examine their experiences in their online courses. Psychometric properties of SPS scale in this sample of nursing students were examined via Cronbach's □, principle components analysis (PCA), and inter-item correlations. Perceived social presence between the five classes was examined through a series of oneway ANOVAs.

Results

Demographic characteristics

Table 2. Demographic Characteristics of Population Sampled (n = 377)

	Descriptive Statistics	
	M (SD)	n (valid %)
Age	34.0 (8.4)	
Gender		
Female	320 (84.9%)	
Male	57 (15.1%)	
Ethnicity		
American Indian / Alaska Native		1 (0.3%)
Asian		132 (35.0%)
Black / African American		18 (4.8%)
Hawaiian / Pacific Islander		5 (1.3%)
Hispanic / Latino		78 (20.7%)
White		111 (29.4%)
Biracial		19 (5.0%)
Unknown		13 (3.4%)

1st Generation to Attend College	
Yes	109 (30.9%)
No	244 (64.7%)
Veteran	
Yes	8 (2.1%)
No	369 (97.9%)

Table 2 illustrates the characteristics of the population sampled**.** As revealed in the table, the student population is older, predominantly female, and primarily comprised of three ethnic groups: Asian, Caucasian, or Hispanic (Latino). In addition, nearly one in three students identified as being the first in their family to ever attend college.

Online experiences

The majority of nursing student respondents had some experience with online courses; only 16% of the participants indicated that the course was their first online course, and 35.7% indicated that they were taking more than one online course during the semester. Within these courses, students reported a high incidence of media use and interaction; 64 % reported that instructors used video lectures or presentations, 50 % reported the use of webinar, and 40 % reported the use of student oral presentations with recorded video. Only 12 % reported no use of such activities in their online course.

When asked to indicate which of the following media "most influenced your feeling of being part of the online community," students ranked the following media and course activities as the highest: introductions with text and pictures, introductions with text only, and instructor feedback using audio. The number of media reportedly used in each of the five online courses is summarized in Figure 2. Students who experienced the YouSeeU® oral and video presentation software rated it second highest behind introductions using pictures and text.

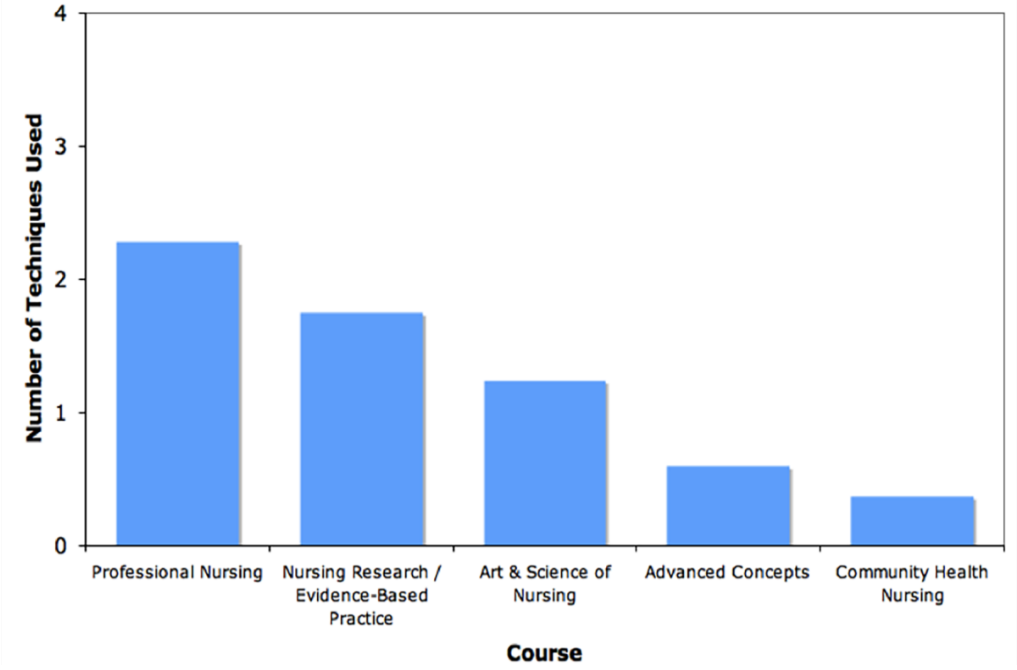

Figure 2. Average Number of Teaching Technologies/Techniques Employed across Five Online Nursing Courses (n =70)

Psychometric characteristics of the SPS scale

Table 3. Factorial Structure of Social Presence Scale

Subscale and Items	M (SD)	Component Loading	Cronbach's Alpha
Subscale 1: Comfort with Online Experience			
2. Computer-mediated communication is an excellent medium for social interactions	3.54 (1.00)	.79	
3. I felt comfortable conversing through this text-based medium	3.90 (0.90)		
4. I felt comfortable introducing myself in the online nursing course	3.99 (0.88)	.86 .85	
5. The introductions enabled me to form a sense of online community	3.49 (1.06)	.79 .87	
6. I felt comfortable participating in the course discussions	3.99 (0.88)		0.93
12. I felt comfortable interacting with other participants in the online course	3.94 (0.88)	.78	
13. I felt that my point of view was acknowledged by other participants in the course	3.83 (0.88)	.68[c]	
14. I was able to form distinct individual impressions of some course participants even though we communicated only via a text-based medium.	3.69 (0.97)	.64[c]	
Subscale 2: Perceived (relative) Social Presence			
9. Discussion using the medium of computer-mediated instruction tend to be more impersonal than face-to-face discussions	2.67 (1.09)	.83	
10. Computer-mediated discussions are more impersonal than audio teleconference discussions	2.97 (1.02)	.90	0.88
11. Computer-mediated discussions are more impersonal than video teleconference discussions	3.01 (1.01)	.94	
Subscale 3: Satisfaction with Instructor			
1. Messages in the online course were impersonal.	4.49 (1.16)	.74[b]	
7. The instructor created a feeling of an online community	3.76 (1.07)	.77[a]	0.79
8. The instructors facilitated discussions in course	3.81 (1.16)	.78[a]	
Total Scale	3.58 (0.62)	-	0.88

An exploratory factor analysis of the data was used to examine the SPS for the presence of underlying subscales. An examination of the SPS's 14-items was performed via PCA using orthogonal rotation (varimax). In addition, the decision was made a priori to examine the internal consistency of the total 14item scale and any identified subscales by calculating Cronbach's alpha in order to determine if any of the scale items should be removed. The Kaiser-MeyerOlkin measure revealed that the sample size in the study was appropriate for PCA analysis (KMO = .81). In addition, Bartlett's test of sphericity ($x^2_{(91)} = 841.11$, $p < 0.001$) indicated that the correlations between the individual items were high enough to warrant examination using a PCA approach. Prior to rotation, eigenvalues of the unrotated matrix were calculated, producing three factors with eigenvalues of greater than one. Visual examination of inflexion with a scree plot further supported a three-factor solution. The resulting threefactor solution explained 76.62% of the observed variance in participants' responses. A total of 5 items cross-loaded onto two factors (component loadings .40), and in each instance items were placed on the scale that resulted in the highest component loading. The factors revealed, as well as tentative descriptions of the subscale constructs, are described in Table 3.

The Cronbach's values for the Total SPS scale (= 0.88) and three subscales (= 0.79 – 0.93; see Table 3) were adequate, with single item deletions making negligible improvements to the scales' internal consistencies.

a Item cross-loaded onto subscale 1
b item cross-loaded onto subscale 2
c item cross-loaded onto subscale 3

Table 4. Correlations between the three SPS subscales (n = 70)

	Subscale 1: Comfort with Online Experience	Subscale 2: Perceived (relative) Social Presence	Subscale 3: Satisfaction with Instructor
Total Scale	.89***	.37***	.77***
Subscale 1: Comfort with Online Experience	-	.02	.57***
Subscale 2: Perceived (relative) Social Presence	-	-	.11

*** p 0.001

Table 5. Inter-item Correlations by Individual Question & by Subscale (n = 70)

		Subscale												
		1								2			3	
Subscale	Question	2	3	4	5	6	12	13	14	9	10	11	1	7
1	2	-												
	3	.70***	-											
	4	.52***	.73***	-										
	5	.70***	.63***	.61***	-									
	6	.59***	.82***	.81***	.63***	-								
	12	.46***	.65***	.73***	.48***	.73***	-							
	13	.53***	.61***	.60***	.43***	.69***	.75***	-						
	14	.51***	.49***	.49***	.53***	.64***	.64***	.80***	-					
	9	.17	.06	-.10	.22	.03	-.14	-.12	-.04	-				
2	10	.17	.08	-.05	.09	.03	-.18	-.09	.01	.59***	-			
	11	.16	.08	-.03	.12	.03	-.24*	-.11	-.01	.70***	.84***	-		
3	1	.06	.10	.01	.06	.11	-.001	.18	.16	.35**	.52***	.45***	-	
	7	.49***	.59***	.54***	.57***	.65***	.51***	.68***	.60***	-.15	-.05	-.13	.41***	-
	8	.46***	.56***	.47***	.48***	.58***	.46***	.66***	.57***	-.06	.07	-.11	.39***	.90***

* $p \leq 0.05$, ** $p \leq 0.01$, *** $p \leq 0.001$

Examinations of the correlations between the subscales (see Table 4) as well as between the individual scale items (see Table 5) largely validate the 3 subscales identified during the initial PCA. For example, subscale 2's items showed strong positive correlations with one another but were generally not strongly correlated with the majority of the items in subscales 1 or 3. For Subscales 1 and 3 an correlations between items was noted, but this was anticipated due to the cross-loadings observed during PCA (see Table 3), reflecting that students' comfort in online learning environments is positively correlated with their satisfaction in online classes.

Differences in perceived social presence across classes

Table 6. Variation in Social Presence across Five Class Sections (n = 70)

Scale	F	df	*p*	□2
SPS Total	1.77	4, 65	.15	0.10
Subscale 1: Comfort with Online Experience	0.69	4, 65	.60	0.04

Subscale 2: Perceived (relative) Social Presence	0.62	4, 65	.65	0.04
Subscale 3: Satisfaction with Instructor	12.42	4, 65	<.001	0.43

In order to determine whether students' perceptions of the social presence within their course varied between the five classes examined, a series of oneway ANOVAs were conducted (see Table 6). The decision was made a priori to conduct post hoc analyses, if warranted, using the Games-Howell test in order to account for the unequal sizes of the samples from each class.

As shown in Table 6**,** no statistically significant differences between the classes were observed for scores on the Total SPS scale or subscales 1 or 2 ($p > 0.05$ for all). Further examination of $\square^2$ revealed clinically insignificant effect sizes for each of these comparisons.

However, a substantive, statistically significant difference was observed in Instructor Satisfaction, with the Games-Howell test revealing that classes 1, 2, 3
& 5 all had significantly higher scores ($M_{\text{difference}} = 1.73 – 2.06$) than class 4.

Differences in teaching techniques employed

A one-way ANOVA revealed a substantive, statistically significant difference in the number of online teaching techniques used across the five class sections studied ($F_{(4, 65)} = 22.28$, $p < .001$, $\square^2 = .58$), with a Games-Howell post hoc test revealing that Community Health (the course with lowest instructor satisfaction ratings) was taught using fewer techniques than any other class (all p's < .05; see Figure 2).

Discussion

Overall, the participants expressed a comfort level with using media and interactive activities in their online course offerings. The data revealed a high perception of social presence among the participants. The course activities ranking the highest were congruent with those identified by Borup, West, and Graham [9] and Lyons, Reyson, and Pierce [10], such as shared social identity,
"just in time" interactions, and salient on-line discussion forums. The integration of various social presence cues (humor, self-disclosure, support for learners' ideas, greetings, etc.) also seemed to enhance the perception of social presence within the course, which is also consistent with Wise et al.'s [7] findings.

Cobb [3] reported the highest scoring items in the Social Presence Scale in her study as items 4, 6, 12, and 13; all concerning comfort with communication. Congruent with Cobb's results, the highest scoring items in the present study were: # 4. I felt comfortable introducing myself in the online nursing course, # 6. I felt comfortable participating in the course discussions, and # 12. I felt comfortable interacting with other participants in the online course

Each of which was included in subscale 1, which we labeled as the broader construct "Comfort with Online Experience."

Providing a supportive online learning environment to promote meaningful learning is the primary role of the teacher. Arbaugh, Cleveland-Innes, Diaz, Garrison et al. [11] found teaching presence highly correlated with cognitive presence; they also revealed that two factors comprised the construct of teacher presence; online course design and teacher behavior throughout the course. This study's salient finding of an association between student satisfaction with instructor and comfort with online learning supports the above. It is also noted

that four out of five instructors in the courses surveyed employed a variety of interactive and innovative teaching techniques which was consistent with Anderson et al.'s [8] and Lowenthal and Parscal's [12] construct definitions regarding teacher presence.

All three dimensions of the COI Model (teacher, cognitive, and social presence) as previously stated, are interdependent on one another, and all contribute to an online environment that facilitates and supports the achievement of student learning goals.

Limitations

Nursing students in the RN to BSN program are upper division transfer students. Although a large percentage of the RN to BSN student population have historically been older and often work full time, the demographics of this population have changed in more recent years as the job market tightened and institution hiring practices changed to a preference for bachelor's prepared nurses. The group that participated in this study was a transitional group and, as such, may not represent the larger student body of the institution or the more traditional nursing student population who are characteristically younger (Table 2).

This study was limited to the students who responded to the survey and scored their perceptions of social presence, and the viewpoint of other students who were taking online nursing courses might differ from the sample group. Most students who responded to the survey were familiar with online courses and had completed an associate degree before attempting an online course at the university level. The students also completed a "Boot Camp" before taking their first courses at the university, which introduced them to technology used in the nursing program including the learning management system (LMS). This initial preparation for the program may have influenced the results.

In regards to the demographic data for the population that was studied, the results were anonymous and could not be linked to existing demographic records. As a result, the authors cannot be sure of the degree to which the sample reflected the demography of the program as a whole; response biases are possible and could limit the generalizability of the results.

Conclusion

Social presence or a shared social identity in online learning appears to be one of the key factors in satisfaction with online learning experiences. Incorporating the COI Model into educational practice and fostering social presence can be challenging for the faculty. It requires additional knowledge of technology and online teaching techniques, incorporating the use of different products, such as Socrative©, Padlet, TurnItIn® or video presentation software like YouSeeU®, and the use of videos, small group discussion forums, introductory blogs, etc.

This study adds to growing body of knowledge about social presence in online educational offerings. Additional larger scale studies regarding social presence in online nursing courses would further elucidate the value of using the COI Model in nursing distance education. As evidenced in the COI Model (Figure 1), each of the elements is not experienced in isolation; cognitive presence, where participants construct meaning via communication and activities that promote and assess critical inquiry, is created and supported in an online environment. Course activities that are structured, engaging, and "fit together" foster teaching presence. Ultimately, the learners are able to project their personal selves into the community of inquiry as "real people" in this online learning world [5].

References

[1] L. Mayne and Q. Wu, Creating and Measuring Social Presence in Online Graduate Nursing Courses. *Nursing Education Perspectives, 32*(2), 2011, pp. 110-114.

[2] D.R. Garrison, T. Anderson, and W. Archer, Critical inquiry in a text-based environment: Computer conferencing in higher education model. *The Internet and Higher Education*, 2(2-3), 2000, pp.87- 105.

[3] S.C. Cobb, Social Presence and Online Learning: A Current View from a Research Perspective. *Journal of Interactive Online Learning, 8,* 2009, pp.241-254.

[4] C.N. Gunawardena and F.J. Zittle, Social Presence as a Predictor of Satisfaction Within a Computer-Mediated Conferencing Environment. *The American Journal of Distance Education,11,*1997, pp.8-26.

[5] L. Rourke, T. Anderson, D. Garrison, and W. Archer, Assessing Social Presence in Asynchronous Text-Based Computer Conferencing, *Journal of Distance Education, 14,* 2001, pp. 50-71.

[6] Garrison, D.R., *E-Learning in the 21st Century: A Framework for Research and Practice.* Taylor and Francis, Hoboken: NJ, 2011.

[7] A. Wise, J. Chang, T. Duffy, and R. Del Valle, The Effects of Teacher Social Presence on Student Satisfaction, Engagement, and Learning, *Journal of Educational Computing Research, 31*(3), 2004, pp. 247-271, doi:10.2190/VOLB-1M37-RNR8-Y2U1

[8] T. Anderson, L. Rourke, D.R. Garrison, and W. Archer, Assessing Teaching Presence in a Computer Conference Environment, *Journal of Asynchronous Learning Networks*, *5*(2), 2001, pp.117.

[9] J. Borup, R. West, and C. Graham, Improving Online Social Presence Through Asynchronous Video. *Internet and Higher Education, 15*(3), 2011, pp.195-203, doi: 10.1016/j.iheduc.2011.11.001

[10] A. Lyons, S. Reysen, and L. Pierce, Video Lecture Format, Student Technological Efficacy, and Social Presence in Online Courses, *Computers in Human Behavior, 28*(1), 2011, pp.181-186, doi: 10.1016/j.chb.2011.08.025

[11] J. Arbaugh, M. Cleveland-Innes, S. Diaz, D.R. Garrison, P. Ice, J. Richardson, and K. Swan, Developing a Community of Inquiry Instrument: Testing a Measure of the Community of Inquiry Framework Using a Multi-Institutional Sample. *Internet and Higher Education, 11,* 2008, pp.133-136, doi:10:1016/j.iheduc.2008.06.003

[12] P.R. Lowenthal and T. Parscal, Teaching Presence. *The Learning Curve, 3*(4), 2008, pp.1-2, 4.