

**Role of Social Presence, Choice of Online or Face-to-Face  
Group Format, and Satisfaction with Perceived Knowledge  
Gained in a Distance Learning Environment**

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**Abstract:** This mixed-methods study examined factors that contributed to satisfaction with perceived knowledge gained in a distance learning environment where collaboration represents a major portion of the course structure. Giving learners authority over the physical learning environment and offering different formats for collaboration, either online or in person, contributed to the learners' overall satisfaction with the course. Results indicate that social presence may not have played a role in choice of distance learning format.

**Introduction**

The environment in which learning takes place—whether online or in person—involves a complex array of factors that influence learner satisfaction and achievement. The physical space and psychological climate in which learning occurs, as well as social aspects of instructional activities, play an important role in successful learning (Hiemstra, 1991; Merriam & Brockett, 1997; Sisco, 1991).

This study considers the interrelationships among the physical, psychological, and social dimensions of the teaching-learning setting. It examines three aspects of the learning environment: (a) the role of learner choice in selecting whether to collaborate in physical space or cyberspace, (b) efforts to compensate for the psychological gap inherent in distance education, and (c) the ability of learners to perceive and establish social presence in collaborative work. The purpose of this paper is to discuss results of a mixed-methods study addressing the above aspects of the learning environment that influence satisfaction with the overall conduct of the course.

The primary research question is: Is there a difference in satisfaction with the course between the group of learners who chose an online collaborative format and the group who chose a face-to-face collaborative format? Two additional research questions were addressed: (a) How does course structure affect collaborative format choice and satisfaction with the course? (b) Is there a difference in the perceived social presence of computer-mediated communication technologies between the group who chose an online collaborative format and the group who chose a face-to-face collaborative format?

**Pedagogical Considerations**

The learners in this study were enrolled in a course about the role of adult education in American society. The course uses a constructivist approach in which learners make meaning by formulating ideas and refining them through the responses of others. Therefore, collaborative

work is central to the completion of the academic tasks. Because of the importance of learner-learner interaction to educational success in this course, learners had the opportunity to make two critical choices: (a) the composition of their groups and (b) whether to conduct group work online using WebCT chat rooms or in person at a location of their choice.

There were three face-to-face sessions—at the beginning, middle, and end of the course. Throughout the quarter, learners worked in small groups (ranging from three to six members) to complete course requirements. This included contributing to weekly threaded discussion sessions related to issues presented in the course readings and writing a final paper, either as a group or individual project.

### **Conceptual Framework**

Fulton's SPATIAL model for assessing physical environments, Moore's theory of transactional distance, and social presence theory provide the conceptual framework for assessing satisfaction with the distance learning environment in this study.

#### ***Learning Spaces***

Fulton (1991) considers the relationship of physical environment to satisfaction as being germane for adult learners. His SPATIAL model posits that (a) learners' perceptions of space affect their satisfaction, participation, and achievement, (b) certain aspects of a space are subjective, and (c) the authority that is conveyed by the physical environment and its layout can be changed (Fulton, 1991). Authority is particularly affected by the instructor's educational philosophy and a course design that encourages learners to take control of their environment (Fulton, 1991). Having the ability to choose whether to work collaboratively in physical space or cyberspace ameliorates an authoritarian learning environment.

#### ***Transactional Distance***

The flexibility of the course design in accommodating learner needs is an important element of Moore's theory of transactional distance, which is defined as the "psychological and communications space to be crossed, a space of potential misunderstandings" between instructors and learners who are physically separated (Moore, 1993, p. 22).

Transactional distance is a function of structure (course design), dialogue between the instructor and learner, and learner autonomy (Moore, 1993). For example, high structure and low dialogue result in greater transactional distance and more responsibility on the part of the learner to be autonomous in order to succeed (Moore & Kearsley, 1996). Transactional distance is lessened in courses with high levels of dialogue and little predetermined structure because learners receive ongoing guidance from instructors and are able to modify instructional materials to meet their needs (Moore & Kearsley, 1996).

Moore sees interaction as a product of course design and recommends that instructors incorporate three types of interaction into distance education courses: learner-content, learner-instructor, and learner-learner (Moore & Kearsley, 1996). As a function of learner-learner interaction, students build learning communities by formulating and testing ideas related to course content (Moore & Kearsley, 1996).

#### ***Social Presence***

The ability to work effectively in small groups is at the heart of social presence theory and of interest to those involved in creating communities of learners. Social presence involves

the ability of people to be perceived as real, three-dimensional beings despite not communicating face to face (Garrison, Anderson & Archer, 2000; Short, Williams & Christie, 1976; Tu & McIsaac, 2002). The greater the perception that social presence exists, the better the ability to substitute telecommunications media for face-to-face encounters and still achieve the desired collaborative outcome. When the degree of social presence is high, interaction will be high.

There is no widely accepted measure of social presence. Short, Williams, and Christie (1976) used semantic differential scales to assess the social and emotional capabilities of the medium; e.g., insensitive-sensitive, cold-warm, impersonal-personal, and unsociable-sociable. Gunawardena and Zittle (1997) developed a scale that consisted of 14 Likert items addressing the social presence of a computer-mediated conferencing environment, particularly the concept of immediacy. They found that social presence is a strong predictor of overall course satisfaction.

Garrison, Anderson, and Archer (2000) developed a template for analyzing and coding transcripts from a computer conference in terms of cognitive, social, and teaching presence. Their template lists emotional expression, open communication, and instructional management as the categories that indicate elements of social presence (Garrison, Anderson & Archer, 2000).

Tu (2002) asserts that social presence is a complicated construct and involves privacy, social relationships, communication styles, the nature of the task, feedback, and immediacy, among other items. He developed a 42-item questionnaire that identified social context, online communication, and interactivity as factors that comprise social presence (Tu, 2002).

Distance education is a complex, dynamic system of teaching and learning. As in many complex environments, each element of the conceptual framework illuminates a different facet of the way in which learners interacted with the instructor and one another during the course. At a physical level, learners had the ability to choose the environment (in person or online) in which collaboration occurred. At a psychological level, transactional distance was examined primarily through course structure and interaction designed to lessen communication gaps. At a social level, interaction and the environment chosen for collaborative work was a function of the perceived social presence of computer-mediated communication technology used in the course.

### **Method and Procedures**

The population consisted of 37 undergraduate and graduate learners enrolled in a winter quarter 2003 course at a large midwestern university about philosophical and historical perspectives on adult education in American society. The mixed-methods study addressed the effectiveness of online and face-to-face collaborative work on satisfaction with perceived learning using a concurrent triangulation strategy with integration of data occurring during the analysis phase (Creswell, 2003).

For the quantitative portion, the question of interest was the difference in satisfaction with perceived learning between the group of learners who chose an online collaborative format and those who chose a face-to-face collaborative format. A static group comparison design was used. The treatment variable was group format (online or face-to-face). The main independent variable was degree of perceived social presence. Other independent variables were demographic characteristics related to gender, age, and computer use. The degree of perceived social presence was measured by the Computer-Mediated Communication (CMC) Questionnaire developed by Tu (2002). The questionnaire contains 17 social presence items and 13 privacy items, each with a Likert scale, as well as 12 demographic items.

The flexibility built into the course structure that provides for the learners' ability to choose their group format was measured by a 22-point checklist developed by the investigators.

The items in the checklist assess transactional distance concepts as defined in the literature and empirically tested (Braxton, 2000; Moore & Kearsley, 1996; Roblyer & Ekhaml, 2000).

The dependent variable was satisfaction with the overall conduct of the course, which was assessed on an end-of-course questionnaire developed by the investigators (alpha reliability coefficient of .96). The 10-item instrument consists of Likert-scale items that ask respondents to rate the level of the interaction in the course and their satisfaction with different aspects of the course and knowledge gained.

In addition to quantitative methods, focus groups were conducted with volunteers to identify themes that clarified why learners made the collaborative format choice they did and how that choice contributed to their perceived learning and satisfaction with the course.

Questions addressed the breadth and depth of information exchange and the factors that affect interaction and social presence.

## Findings

### *Format and Satisfaction*

A *t*-test for independent samples showed no difference in satisfaction with the overall course between the group of learners who chose an online collaborative format and the group who chose a face-to-face collaborative format ( $t(33) = .93, p = .36$ ). The 22 learners who chose the online format had an average overall satisfaction with perceived learning score of 4.45 on a five-point scale ( $SD = .60$ ) compared with 4.23 ( $SD = .83$ ) for the 13 learners who chose the face-to-face format.

### *Structure and Satisfaction*

A *t*-test for independent samples showed no statistical difference in satisfaction with the course structure between the online group and the face-to-face group ( $t(33) = .38, p = .70$ ). The 22 online collaborators had an average satisfaction with course structure score of 4.28 on a five-point scale ( $SD = .88$ ) compared with 4.15 ( $SD = .90$ ) for the 13 learners who collaborated face-to-face.

The checklist designed to measure the flexibility in course structure showed a moderate opportunity to decrease transactional distance in this course. Learners were able to alter some elements of the course to accommodate their individual needs, such as whether to meet in person or online.

Focus group interviews support the finding that the ability to choose collaborative format was a factor in satisfaction with course structure for both groups. A learner in a group that met face to face said, "When we were given a level of comfort, when we were allowed to design our own group and our own way and our own means of meeting, that took every weight off my shoulders as far as the burden or the issues I had with the class and all of a sudden it became a pleasurable experience." A face-to-face collaborator in another group echoed that sentiment: "I think the way he has it formatted is perfect. There's a lot of freedom. Because if we would have had to meet in a chat room, I know [Elaine] would have freaked out." An online collaborator said the instructor did not put "too many controls in place. The flexibility worked for us."

### *Format and Social Presence*

A *t*-test for independent samples showed no difference in the perceived social presence of computer-mediated communication technologies between the online and face-to-face collaborators ( $t(29) = 1.23, p = .23$ ). Twenty online collaborators had an average social presence

score of 3.56 on a five-point scale ( $SD = .48$ ) compared with 3.37 ( $SD = .24$ ) for 11 face-to-face collaborators.

Focus group interviews with 15 volunteers representing five of the eight groups in the class complicate this finding. Some face-to-face collaborators expressed strong opinions about the inability to express emotion online: “I just feel like you can get your point across better [in person]. Interrupting is . . . a major way of showing emotion, I think. And you can’t do that online.” Another face-to-face collaborator reflected on a previous online experience: “It was horribly frustrating to try to carry on a dialogue. What ultimately ended up happening was that they were blurbs of thoughts, or blurbs of fact, but it wasn’t a dialogue.”

Online collaborators countered that the lack of visual cues fostered an environment free of pretense: “It seemed like we were really open with each other from the very first chat, and I feel that has caused us to grow as a group because there’s an intimacy, if you will, about that forum that we wouldn’t necessarily have face to face.”

### ***Conclusions and Implications for Practice***

This study examined whether there was a difference in overall satisfaction with perceived knowledge gained between learners who chose to collaborate online and those who chose to collaborate face to face. The quantitative finding of no difference has implications for course design wherein collaborative activities comprise a major portion of the course work. If learners are able to choose their collaborative format, it is expected that they would select what is most comfortable for them to bring about satisfactory results. The instructor ceded authority over the physical learning environment, which contributed to learner participation and satisfaction.

That conclusion is also supported by findings from the second research question, which addressed how structure affected collaborative format choice and satisfaction with the course. Having the ability to choose group members as well as collaborative format as part of the course structure emerged in the qualitative analysis as a factor in course satisfaction. It contributed to a greater comfort level with group members, which increased learner-learner interaction and lessened the effects of transactional distance.

The quantitative analysis for the third research question showing no difference in perceived social presence of computer-mediated communication technologies between the online and face-to-face collaborators was unexpected and contradicts the strong opinions expressed during focus group interviews. It is possible that dominant group members who feel less socially present online may have persuaded the other members of their groups to meet face to face. This area of research requires more exploration.

For instructors, this research suggests that it is worthwhile to offer different methods of collaborative learning that promote the ability for adults to interact with one another and the instructor in ways that foster their learning. In essence, if a course is designed to accommodate either online or face-to-face learning formats, the choice of format becomes simply a matter of individual preference given no overriding factors, such as time and geographic limitations or social relationships within groups.

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