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ABSTRACT

The objective of this paper is to review and analyze several aspects of computer mediated learning and how future communication research questions will be explored. Some of the questions addressed in the paper are: Does this format affect learning performance? Is there enough verbal interaction in a cyberspace class? How are communication researchers affected by not having a face-to-face platform? and How does computer-mediated learning become the great equalizer? The paper describes increasing media richness and social presence in computer-mediated learning. It notes that in online courses, feedback is very important for students to maintain progress, and what ties the student group together is a common goal such as finishing the course with a decent grade. As for communication research, the paper suggests that the ethnographic researcher will have to find a way to penetrate the online community and then remain as an active participant to understand and become part of the community world of his or her subjects. When this is accomplished, an effective analysis and interpretation can be completed. (Contains 30 references.) (NKA)

# Interpersonal Communication in Computer Mediated Learning

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## ABSTRACT

The objective of this paper is to review and analyze several aspects of computer mediated learning and how will future communication research questions be explored. Does this format affect learning performance? Is there enough verbal interaction in a cyberspace class? Without a face-to-face platform how are communication researchers affected? How does computer mediated learning become the great equalizer?

## Functions of face-to-face Interpersonal Communication

When we engage in communication with another individual, we can gain knowledge about the other person so we can interact more effectively. We can therefore try and predict how they will think, feel, and act if we know them (Snyder, 1999).

Interpersonal communication helps us to understand what someone says in a given context. Understanding relates to perceptions, attitudes, role expectations, relationship beliefs and patterns, self-concepts, conflict issues, communicative intentions, feelings, and immediate thoughts while observing and analyzing conversation (Sillars, 1998). What we say can mean different things depending on how they are said and in what context.

We may need to express and receive interpersonal needs such as inclusion, control and affection.

- Inclusion is the need to establish identity with others. The roles we play and the face that we project to others contribute to an identity.
- Control is the need to exercise leadership and prove one's abilities. Groups provide outlets for this need. Some individuals do not want to be a leader. For them, groups provide the necessary control over aspects of their lives.
- Affection is the need to develop relationships with people. Groups are an excellent way to make friends and establish relationships (Borchers, 1999).

Included in interpersonal communication is facial expression, direction of looking, posture, dress and nonverbal, vocal cues. There is a social presence that

suggests to each actor that they are jointly involved in the communicative interaction. This is confirmed by the fact that there is an availability of immediate feedback when each actor is physically present.

## Information Richness and Media

Information richness is defined as the capability of information to change understanding within a time interval (Daft & Lengel, 1986, p. 560). Communication transactions that can overcome different frames of reference or clarify confusing issues to change understanding in a timely manner are considered rich. Face-to-face is the richest medium because it provides immediate feedback so that interpretation can be checked. Face-to-face also provides multiple cues via body language and tone of voice. The message content is expressed in natural language (Walther, 1992, pp. 56-57). Communications that require a long time to enable understanding or that cannot overcome different perspectives are lower in richness. In a sense, richness pertains to the learning capacity of a communication.

Communication media vary in the capacity to process information. In order of decreasing richness, the media classifications are (1) face-to-face, (2) telephone, (3) personal documents such as letters or memos, (4) impersonal written documents, and (5) numeric documents. The reason for richness differences include the medium's capacity for immediate feedback, the number of cues and channels utilized, personalization, and language variety. Rich media facilitate unclear messages by enabling facilitators to overcome different frames of reference and by providing the capacity to process complex, subjective messages. Media of low richness process fewer cues and restrict feedback, and are less appropriate for resolving vague issues. However, an important

point is that media of low richness are effective for processing well-understood messages and standard data (Daft & Lengel, 1986 p. 560).

**Increasing media richness in computer-mediated learning**

Feedback has been associated with kinds of responses that provide information to students about the correctness of their assignments, homework, and class contributions. In distance education feedback is more important than just a means of informing the student on how well an assignment was done. In face-to-face situations nonverbal gestures are constantly exchanged thus providing both the teacher and learners with feedback. A verbal comment by the teacher, a smile, a facial expression, and a gesture, are all ways with which students can get feedback on their work and ideas. A confused face can indicate to the teacher that further elaboration is needed on a topic. In the online environment, however, all the contextual cues of communication are lost, which may be important in creating the feeling of social presence.

Frequent feedback is very important in online courses. Students need many opportunities for feedback on their assignments, discussion participation, and overall progress. Feedback needs to be personalized and addressed to the individual student's work. General feedback addressed to the class as a group is also advisable, but it is individual feedback that touches the student. In addition, it is important to contact the students on a weekly basis to check if they are having any problems with the course, assignments, use of technology, and get their continuous feedback for improving the course.

## Social Presence in computer-mediated learning

In addition to media richness, social presence theory assists in the understanding of messages, which contributes to the learning process. Social presence is the feeling that others are involved in the communication process. As social presence declines, messages are more impersonal. Considering this, social presence becomes a quality of the communications medium.

Communication is the essence of the cyberspace environment. The connections between how people communicate, relate, collaborate, and how they learn are strong and integral to a study aimed at describing what happens in a new instructional domain. The learning literature provides insight about how people learn and a framework for assessing the characteristics of cyberspace environment in terms of how such an environment may support or affect learning. Collaborative learning literature draws direct connections between learning and social interaction and holds that learning can be facilitated by the provision of an environment rich in social interaction (Thompson, 1999).

Two studies that examined whether social presence is largely an attribute of the communication medium or users' perception of the medium are discussed. According to the studies it can be concluded from the results that even though cyberspace is considered to be a medium that is low in social context cues, participants can perceive it as interactive, active, interesting, and stimulating. However, it is the kind of interactions that take place between the participants, and the sense of community that is created during the interaction, that will impact participants' perceptions of the cyberspace meeting as a 'social' medium (Gunawardena, 1995).

One technique that can be used in the cyberspace environment is the structuring of collaborative learning activities. This came as a suggestion by students during course evaluations in a study. The cyberspace class should allow the use of techniques such as collaborative group work, group discussions, and brainstorming (Sankaran, 2000).

In order to increase the feeling of social presence and the idea of online learning communities, group activities need to be planned in advance. Organizing more group activities can increase learner-learner interaction and take advantage of the medium that can support collaborative work. Some other kinds of activities that can be incorporated to increase learner-learner interaction include group assignments, group projects, and online group debates.

Online environments that rely heavily on text-based communication lack the visual and audible cues present in traditional face-to-face classrooms. As a result, communication that takes place in such environments has often been criticized as lacking in richness. It is therefore assumed that the instructor must create the feelings of the learning communities and social presence. Only good balance between the structure of the course and the online interactions can provide for an optimal learning experience (Vrasidas & McIsaac, 1999).

**Effect of normal communication patterns**

Participants of computer-mediated communication were found to be more task oriented than face-to-face interactants. In many instances, computerized group communication steers users away from irrelevant interpersonal and theoretical issues by focusing attention on the process and content of the problem solving discussion. Also when there is a lack of audio or video cues the communication is perceived as impersonal

and lacking in normative reinforcement, therefore there is less socioemotional content exchanged (Walther, 1992, p. 55).

Although communication was found to be more task oriented in cyberspace, case studies on particular conferences or networks found the development of numerous personal relationships through computer-mediated communication. Interaction among participants reflected similarities in the actors' interests and attitudes. In some instances, online communities are formed due their specialized nature. The fact that they transcend geography and the need for physical presence, pose a challenge for sociologists and communication researchers (Thomsen, Straubhaar & Bolyard, 1998).

In particular situations, people feel more comfortable around us when they believe we share a kinship and common values. Judgment or assumption that we do is usually made quickly within a matter of two to thirty seconds and based on what we see. We may mirror someone else since they tend to feel more comfortable around us. Mirroring is more than just doing the same gestures or mimicking the other person. The more differences we perceive in each other, the more difficult it is to create a rapport. Mirroring helps us to overcome those differences (Brownell, 1999).

The participants of an online class have a common goal, such as finishing the course with a decent grade. Since the actors cannot see the participants physical mirroring cannot occur. They do not know if the participants have similar clothing or similar facial expressions. They cannot see or hear the other actors. What ties the group together is the common goal of the group. Positive effects of intergroup contact occur in situations where the group has equal status within a situation, common goals, intergroup cooperation and the support of authorities, law, or custom (Pettigrew, 1998).

Also, computer-mediated communication allows a greater equality of participation with less dominance in comparison to face-to-face group discussions. The tendency for an individual or a faction of a group to dominate group discussions dissipates in the computer environment (Walther, 1992).

**A Perspective on teaching and learning**

The Computer Supported Intentional Learning Environments (CSILE) has created an example of innovative education. It places public construction of understanding rather than knowledge that exists in individual minds. The curriculum permits the pursuit of topics of inquiry, a classroom culture that fosters collaboration among peers and an instructor that engages in instructional design work. It engages the teacher in moving the knowledge that is in the student's head to what is taking shape in the public domain. The students are partially responsible for the design of their own curricula. They work on assigned themes, form research groups to become experts on subtopics and thereafter conduct seminars in which they share their expertise so that all members of the group can master the entire theme (Palincsar, 1998).

Knowledge is readily available, whether it is contained in books and manuals, on CD-ROMS or in cyberspace, or in other people's experience. The online class teaches the student how to feed him or herself. This changes the role of the teacher. Instead of being the sole repository of knowledge, which has traditionally been the source of their authority, teachers will have to be prepared to encourage their students to search for facts and theories in the depths of the Internet. The real job of the teacher is to set the task, which requires the search for the knowledge, to help the individual or the group to seek it out and to demonstrate how the knowledge can be used (Handy, 1998).

The principles involved in the delivery of distance education are basically those attributed to a more active, constructivist form of learning with one significant difference: there must be a development of a sense of community in distance education within the group of participants in order for the learning process to be successful (Palincsar, 1998; Vrasidas & McIsaac, 1999).

## Communication Effects

In some instances, messages in computer-mediated communication were described as impersonal, cold, and unsociable when compared to face-to-face communication (Hiltz et al., 1986, p. 228). This may occur since the actors in the computer-interaction are self-absorbed. They apparently do not see the other person as a distinct individual. Further, as indicated previously, participants in computer-mediated communication were found to be more task oriented than face-to-face interactants in their communication (Phillips & Santoro, 1989, p. 152).

Impersonality findings were refuted by Foulger (1990) who reported that experienced computer users rated several text-based media were rich or richer than telephone conversations, television and face-to-face conversations (Foulger, 1990). This is also reflected in a growing number of community networks, newsgroups and electronic bulletin boards although they do not possess the traditional dimensions of real communities that have been the focus of ethnographic and social research (Thomsen, Straubhaar & Bolyard, 1998).

## Effects on Communication Research

The researcher, in particular the ethnographer researcher, would have to find a way to penetrate the online community and then remain as an active participant in order

to understand and become part of the community world of his or her subjects. When this is accomplished, then an effective analysis and interpretation can be completed. In addition to the observations, interviews may have to be conducted to give meaning to the descriptive data that has been taken from the postings in the community groups (Thomsen, Straubhaar & Bolyard, 1998).

When the conversation analyst obtains permission to observe an on-line classroom community, presence of the researcher is often unseen and unknown. Initially, the students and instructor are advised that there will be an observer during the class; however, over a period of time the participants in the class may not pay any attention to the observer. For instance, in WebCt, an on-line classroom application, the presence of the observer is unknown to the participants unless they are having a discussion in the Chatroom. A natural discussion in this instance is more likely to occur. There are still limitations, since there are cues that are filtered out such as nonverbal messages. In a traditional analysis, the researcher has audiotape recordings that are transcribed. Interaction coding that does not consider nonverbal behavior may miss the meaning of the conversation (Walther, 1992, p. 63; December, 1996).

An approach to researching on-line communication is a focus on language and rhetoric. Researchers in these areas have likewise discovered many insights into the structure and content of computer-mediated communication and how literacy and orality are affected by communication technology (Baron, 1984; Black, Levin, Mehan & Quinn, 1983; Ferrara, Brunner & Whittemore, 1991; Finnegan, 1988; Gurak, 1994; Lakoff, 1982; Murray, 1991; Ochs, 1989; Ong, 1977, 1982; Spitzer, 1986). These studies have

examined a variety of on-line content and used many schemes for defining or discussing units of analysis.

## Conclusion

We are living in a global society during the 21st Century Information Age. The computer allows us to access information globally. The Internet enables us to communicate with persons around the world and schools, institutes and universities are becoming electronically linked, providing supportive and parallel computer-mediated learning curricula. "Traditional universities seem to be scrambling to partner with the private companies to put courses online. This year at least 75 percent of colleges and universities will offer courses on the Internet, and a growing number will offer degrees earned entirely in that way. Elite institutions such as the Harvard Business School and Columbia University are planning to offer degrees through computer-mediated learning" (Howd, 2000).

The challenge we face in this high tech world is maintaining a personal connection with each other. Face-to-face communications were a daily occurrence in the past and interpersonal skills were mastered by the business world (Hyatt-Grebow, 2000). The availability and the number of personal interactions using computers are limited only by time and access, not by distance or social class. We can create, cultivate, and maintain social relationships with anyone who has access to a computer. Connections are made through the sharing of ideas and thoughts. How people look or what their cultural, ethnic, or social background is become irrelevant factors in a computer-mediated learning environment, which has been referred to as the great equalizer (Palloff & Pratt, 1999).

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