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Résumé de l'article

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Computer-Mediated Communication: A vehicle for learning

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Abstract

The axiom of humanity's basic need to communicate provides the impetus to explore the nature and quality of computer-mediated communication as a vehicle for learning in higher education. This exploratory study examined the experiential communication perceptions of online doctoral students during the infancy of their program. Eighty-five students were electronically queried through a 32 item open-ended questionnaire within a 13 day time frame. Preliminary findings supported the experience of Seagren and Watwood (1996) at the Lincoln Campus of the University of Nebraska, that "more information widens learning opportunities, but without interaction, learning is not enhanced" (p. 514). The overarching implications stress that faculty development and instructional planning are essential for the effective delivery of online courses, and even more so when collaborative learning is used. Facilitating group communication and interaction are areas beckoning attention as we continue to effectively organize the online classroom of this new millennium.

Keywords: Computer-mediated communication; online instructional pedagogy; virtual classroom; online learning; higher education; interaction; immediacy

Computer-Mediated Communication: A vehicle for learning

One much higher than ourselves indicated with the creation of the universe, that it was not good for man to live alone. Inherent in this Judeo-Christian declaration is the implication that communication is a fundamental necessity for our longitudinal survival. Reinforcing this supposition the German philosopher Karl Jaspers (1954) went so far as to advocate that, "man's supreme achievement in this world is communication from personality to personality" (p. 71). This basic need for communication begins at birth with our first exhalation of air when we exhibit an innate cry to be heard and to socially interact with those in close proximity. This belief of man's innate need for social interchange permeates the writings of such psychosocial theorists as Freud (1935), Skinner (1953), Piaget (1959), and Erikson (1963), while manifesting itself in the plethora of communication venues abounding in the new millennium.

Whereas not long ago the delivery time for Pony Express ranged from days to weeks, trans-global communication is now possible with the mere touch of a button. With the advent of the Internet, computer-mediated communication (CMC), aptly described as synchronous and asynchronous communication using text messages sent via the computer (Walther, 1992), has increased both the

breadth and depth of interconnectivity between individuals. This scenario is a far cry from communicative transactions of the past, particularly within the halls of learning.

Shortly after the beginning of time, itinerant wanderers began traveling from place to place delivering information by word of mouth to the many eager recipients they encountered along the way. Surviving the test of time, this form of knowledge dissemination was the norm for centuries; however, with the evolution of print, the potential to spread the ever-growing body of information became much more far-reaching. Later, in the mid to late 1800s and via the development of correspondence courses, venturous institutions of higher education began to expand their traditional boundaries of classroom walls (Brown and Brown, 1994; Misanchuk, 1994; U.S. Congress Office of Technology Assessment, 1989). With the initiation of radio broadcasts, the early 1930s heralded the birth of the current technological explosion, which was soon followed by the use of television and video instruction. From this proliferation of technology, computer-mediated instruction has now been catapulted to the forefront of distance education.

With the exponentially burgeoning population of eager adult learners, the knowledge explosion, and the ubiquitous nature of CMC, institutions of higher education are currently undergoing a paradigmatic shift from the more traditional face-to-face delivery mode to online course delivery. In his national study of 67 land-grant institutions in the US, Kambutu (2002), found that 81percent of administrators surveyed perceived distance education as critical to institutional survival, citing computer technology as the preferred mode of distance delivery. Concurrently, Bianco and Carr-Chellman (2002) stated that online delivery was becoming an increasingly integral and prevalent part of institutions today.

Lewis, Farris, Snow, and Levin (1999) predicted these findings in the second nationally representative survey of distance education undertaken by the US National Center for Education Statistics (*http://nces.ed.gov/*). In that report, 44 percent of all US institutions of higher education were noted as offering some form of distance education during the 1997/ 98 academic year, one-third more than two years prior. Lewis et al., further cited that “the percentage of institutions using asynchronous Internet-based technologies . . . nearly tripled, from 22 percent of institutions in 1995 to 60 percent of institutions in 1997/ 98” (p. 8). Furthermore, 82 percent reported plans to increase this usage in the subsequent three years.

These figures suggest that greater numbers of students are seeking graduate degrees, possibly due to the increased complexity of human life, in addition to the surging availability of interconnectivity made available through CMC. Where previously individuals often had to relocate their families in their quest to seek higher quality educational opportunities, they now can enter the boundary-less walls of the online classroom.

The possibilities for interaction introduced by CMC, provides a powerful environment for collaborative learning across the globe. As students enter any virtual environment, the nature of the entire communication process is transformed. Where social context clues were once vitally important, the text-based medium of CMC eliminates this variable; however, social presence (Short, Williams, and Christie, 1976) or “the degree to which a person feels ‘socially present’ in a mediated situation” (McIsaac and Gunawardena, 1996, p. 408) remains significant. Rourke, Anderson, Garrison, and Archer (1999) reinforced this need for social presence as a necessary element in what they identified as the community of inquiry. This type of environment in which instructors and learners engage in deep, meaningful learning is typical in the traditional doctoral level classroom, and Rourke et al., believed it particularly important for asynchronous text-based computer conferencing. As students become self-directed and active participants engaged in

CMC, instructors become organizers and facilitators of group communication (Berge and Collins, 1995; Harasim, 1990; Hiltz. 1994; Kaye, 1989). Thus, CMC provides a tremendous pedagogical vehicle, providing a collaborative learning environment for a community of learners. However, with alterations to the communication process, the transformation of instructional delivery is inevitable.

With a growing number of institutions using some form of CMC when entering the arena of electronic delivery systems, it becomes increasingly important to gain a better understanding of student perceptions of this learning environment (Bianco and Carr-Chellman, 2002). Because there is a close match between learner perceptions and reality, at least in Sorensen and Baylen's (2000) study with interaction in interactive television courses, there also appears to be a need to ascertain learner perceptions of the general communication climate emerging within the online community. Once cognizant of these perceptions, implications in planning for the online classroom of the future can be inferred.

This exploratory study was constructed to examine the experiential communication perceptions of students in an online doctoral level course. To guide this inquiry, the following two questions were investigated:

1. What are the learners' perceptions of the nature and quality of the computer-mediated communication that occurs within the online doctoral classroom?

2. From these communication perceptions, what are the pedagogical implications?

Methodology

Participants

Participants in this study were enrolled in Regent University's School of Leadership Studies (SLS), which has been actively involved in the delivery of a doctoral program to mid-career professionals since 1996. Espousing both professional and ethical leadership paradigms, and applications for a variety of organizational settings – business, religious, communication, education, and government – the online classroom has been the cornerstone of this multidisciplinary program. With the exception of three brief summer residencies, all courses are designed and delivered primarily using CMC or asynchronous instruction via the Internet.

At the time of this investigation, and although in its infancy, SLS had two cohorts or groups of doctoral students actively engaged in academic pursuits. The majority of the 31 learners in the first cohort were in their second full year of coursework, while the other 54 learners were concluding their first semester.

Data Collection

Voluntary participation was solicited from the entire population (n = 85) on a 32 item open-ended questionnaire. After its initial electronic distribution, two follow-up reminders were issued to reiterate the value of learner input. In addition, a total of 114 email exchanges occurred, the majority of which specifically addressed technical issues raised by participants. Following a 13-day data collection period, 28 students responded, yielding a total response rate of 33 percent.

Two interesting phenomena might account for the rate of response. Upon entry into the SLS program, it was strongly suggested that students obtain a particular word processing program to ease technological issues of document conversion. However, the sheer number of email exchanges reflecting specific technological problems revealed that some students were using alternative programs, and this may have possibly be hampering their ability to download the questionnaire, and thus affecting their ability to participate. Another important variable potentially impacting the number of responses was the timing of the survey. This was a busy time in the semester for a survey of this magnitude to be administered. Participation in an optional academic activity outside the parameters of students' course work might have been an additional stressor inducing many to choose not to engage. The strength of this investigation, a broad open-ended survey, also became its greatest weakness. The lengthy questionnaire format was utilized for the specific purpose of gathering as much descriptive data as respondents could tolerate. Even with the relatively low rate of response, based upon the demographics of the population, respondents were a fairly representative sample.

Demographics of the respondents revealed that 46 percent (n = 13) were male, and 54 percent (n = 15) female. The mean age range was between 35 and 50 (68 percent; n = 19), and of the five cognates, 46 percent reported they were in the individualized track, 29 percent in education, 18 percent in business, and 3.5 percent in religious and government respectively. Fifty four percent (n = 15) were from the first cohort, and 46 percent (n = 13) from the second.

Instrumentation

Upon review of the available instruments in the field, it was determined that no appropriate assessment measure existed to meet the specific needs of this study: to collect a broad spectrum of descriptive data concerning a spectrum of communication perceptions of online doctoral learners. Based upon the existing literature and designed to gather general descriptive information, the *Communication Perception Questionnaire (CPQ)* was comprised of 32 open-ended questions specifically targeting perceptions of both general and group online communication, while an additional four questions to ascertain respondent demographics. Although each question contained one general idea, several had multiple parts. For example, one question addressed student perceptions concerning the nature and quality of the general CMC process with SLS, with faculty, and with peers. Although this question solicited student perceptions regarding three distinct relationships, to facilitate aesthetics and to not give the appearance of increased length, the sub-questions were collapsed into one major conceptual question with multiple parts.

Face validity for the *CPQ* was based upon a review of the experiential literature on CMC and the online classroom, the needs of SLS, and the researcher's experience, while content-validity was determined by expert reviews made by members of the administration and the faculty. A sample of potential respondents was randomly selected to pilot the instrument. Upon completion, follow-up communication sought to determine potential issues or concerns in wording, format, sequence, and length. An overview of the distribution of questions for the *CPQ* may be seen in Table 1.

Table 1. *Communication Perception Survey* Question Distribution

Topic	Number of Items	Information Collected
General CMC Process	3	Importance, nature, and flow of communication
Information Exchange and Instructional Pedagogy	4	Quality, volume, overload, and gaps of information
Immediacy and Interaction	7	Importance of immediacy, nature and medium of response, response frequency, time demand comparisons, and isolation
Online Group Process	3	Perceived purpose, most important gains, greatest difficulties
Online Group Membership	4	Assignment vs. selection, group repetition, homogenous vs. heterogeneous, group size
Online Group Protocol	6	Asynchronous vs. synchronous, decision-making, conflict, leadership skills
Faculty role expectancy	3	Overall role, accessibility, and responsiveness
Learner motivation	1	Self-directedness
Program Strengths	1	Perceived programmatic strengths
Demographics	4	Gender, age, cohort, cognate,
Total	36	

The open-ended questions were grouped into the following nine categories: 1) CMC Process; 2) Information Exchange and Instructional Pedagogy; 3) Immediacy and Interaction; 4) Online Group Process; 5) Online Group Membership; 6) Online Group Protocol; 7) Role Expectancy of the Online Faculty Member; 8) Learner Motivation; and 9) Greatest Perceived Program Strengths. A systematic analysis of the responses examining key adjectives and other descriptors revealed several recurrent themes.

Results and General Conclusions

CMC Process

Questions concerning the overall importance, nature, and flow of communication in the CMC process provided a general overview of learner perceptions. Respondents' disclosure concerning these issues paralleled those mentioned in subsequent responses.

All respondents articulated the fundamental importance of communication in the online program. Specific descriptors relating to its significance repeatedly resonated with words such as: "very important," "vitally important," "absolutely vital," "essential," "crucial," and "paramount."

Concerning the nature of online communication, the virtual pioneers of this program expressed the desire to be informed of all current developments and future plans for SLS. In an effort to bridge the communication gulf created by sheer physical distance and to maintain a sense of connectedness, which some researchers consider critical (Eastmond, 1995; Kerka, 1996; Kimball, 1995), respondents expressed a desire to periodically engage in some form of real-time or synchronous activity. This appears to support Wilson's (1997) assertion that "an important element of any virtual classroom [is] synchronous activity in which students and instructors interact through live voice or video" (p. 52). Two respondents offered suggestions that could easily facilitate this need for synchronous communication. One suggested online town meetings perhaps once a semester, in which there would be a synchronous open forum where administrators and faculty would be available to share programmatic updates, and students would have an opportunity to ask questions and offer input. Another student suggested an electronic bulletin board to facilitate posting of pertinent personal information. This need for connectedness resonated throughout the responses.

Regarding communication flow, respondents in this study clearly mirrored the concerns of Hiltz (1994) and Miller (1994), in that non-respondents or lurkers are a potentially problematic occurrence. To thwart this issue, respondents suggested the need for instructors to continually encourage the participation of all.

Information Exchange and Instructional Pedagogy

Learners' responses to the quality and volume of information exchange elicited suggestions, which once again reflected their desire for connectedness and interactivity, while also acknowledging the reality of overload. In terms of information exchange within the confines of instructional pedagogy and supporting the work of Chen (1997), Kimball (1995), and Poling (1994), students collectively expressed the need for early delivery of syllabi and timely, regular, and encouraging feedback and direction from faculty.

Supporting Wilson's (1997) assertion that the goal of the virtual classroom is "to provide the distant learner with as much of the classroom experience as possible" (p. 52), this particular group of learners unswervingly expressed the need for intellectual dialog with the faculty, perhaps even on a weekly basis. A suggestion was offered that after the completion of student assignments, instructors could culminate units of study by sharing their scholarly insights and wisdom with the collective group. Another respondent described this need for a community of inquiry (Rourke et al., 1999) as "just picking the brain of the professor" much like sitting around the collegial table discussing the deeper things of life.

In addition to meaningful discussion with faculty, respondents expressed their desire to enter the intellectual dialogue with their peers, although several felt it necessary to articulate that the quality of information received varied with the individual sender. Supporting Lowry, Koneman, Osman-Jouchoux, and Wilson (1994) and Seagren and Watwood (1996), respondents praised the use of asynchronous discussion for its allowance of reflective time to stimulate deeper thought. In spite of having more time available to engage in online communication to challenge and critique the thoughts and ideas expressed by peers, many respondents confessed their hesitancy to do so.

The asynchronicity of the program, one of its perceived greatest strengths, was also identified as one of its greatest communication challenges. Often learners felt their postings to the discussions were merely a response to the instructor's weekly questions, or what one termed "a broadcasting of responses," rather than intellectual discourse with either the professor or their peers. Factors cited as influencing the quality of intellectual dialogue included: learner preparation, internal locus of control, motivation to be original, and ongoing feedback from both peers and faculty.

Although information overload is a given in any doctoral program, one student keenly described this as occurring "when one is expected to read a very prodigious amount of material and constantly be able to assimilate all the information on a deep level of analysis." This appears to be compounded in the online environment. Two predominant factors emerged as possible contributors to this issue: (1) the need for attention to detail, and (2) the sheer volume of text-based communication. In support of the work of Barnes and Greller (1994), McCandless (1997), and Miller (1994), respondents acknowledged that written message composition needed to be approached with immense care. According to Albrektson (1995) such message composition is a process in which participants, "knowing their input would be carefully scrutinized by the group, . . . think through their proposals carefully, research them fully, and argue them persuasively" (p. 105). Respondents agreed that in order to avoid confusion and ambiguity, particular attention to detail was required. Also contributing to overload, and supporting the work of Hiltz (1994), Kerka, (1996), and Kimball (1995), was the sheer volume of the text-based communication platform. Heavy amounts of reading are commonplace in a doctoral program, but the added dimension of CMC and the perceived need to respond to every message contributed significantly to this perception. Within the time constraints of the semester format and the increased time needed for online communication, it could be surmised that survival in an online doctoral program greatly depends on one's rapid adjustment to CMC.

Immediacy and Interaction

Several questions elicited learners' perceptions of communication immediacy, which included such interaction variables as the nature and medium of response, response frequency, and time demand comparisons. In addition, learners were queried as to their experience with what may appear to be the opposite of overload – isolation.

Learners predictably expressed the vital importance of immediacy, or involvement and closeness. Supporting the phenomenon of student need for social-emotional interaction (Miller, 1994; Grooms, 2000), respondents indicated their use of online communication for both social and spiritual interaction (e.g., prayer and the sharing of scriptures or devotionals of encouragement), in addition to academic and informational purposes. About half of the respondents reported exclusive use of electronic communication for all university and class-related interaction; the remainder reported using a combination of both electronic and synchronous avenues.

The frequency that respondents opened their email varied dramatically: from 2-4 times per week, to throughout the day. Average response time ranged from within a day or two, to immediately. Concerning frequency and response time, Poling (1994) offered two admonishments for instructors that are also equally applicable to students: check email several times throughout the day and always respond in some manner to each and every message received.

As previously discussed, time demands are a serious concern for most doctoral students. A little over one-third of respondents reported that online communication significantly increased the demands placed upon them in comparison to what might be expected in the traditional classroom.

Sample comments follow: “It can have adverse effects if one is not careful, such as utilizing all ones’ time.” “I always feel like I’ve left something undone, or someone unattended.” “Many tasks are lengthened because of the online nature of the course.” “Group collaboration is very challenging.”

At the other end of the interaction continuum, the literature refers to the physical separation from the institution that precipitates some degree of isolation and loneliness (Eastmond, 1995; Kerka, 1996). An overwhelming majority (86 percent) of respondents expressed the belief that their fellow learners may have experienced isolation at one time or another, while notably fewer (9 percent) candidly confessed their own personal times of loneliness. Cognizant of this potential peril, it would behoove faculty to remain mindful of designing instructional protocols to facilitate the needed communication and interaction, particularly in an asynchronous environment.

Online Group Process

It was enlightening to ascertain what students believed to be the primary purpose of online group communication, what they considered to be their most important gains, and what they perceived as their greatest online group difficulties and frustrations. In soliciting the perceived purpose of online group communication, access to the knowledge of others was repeatedly cited. The preponderance of respondents reported that their group experience broadened their individual perspectives through the sharing of information and ideas, and through posting and responding to thought-provoking questions. Once again, the need to include faculty in this community of scholars was articulated, supporting the paradigmatic shift from the traditional lecture method of higher education (e.g., sage on the stage), to the more learner-centered and learner-controlled environment with the professor acting as learning facilitator (e.g., guide on the side).

Concerning valuable gains from this virtual group communication experience, students reinforced their earlier responses regarding the general CMC process: 1) stimulation of thought; 2) openness to new perspectives and ideas; 3) continued growth in the ability to communicate without the advantage of nonverbal cues; and 4) the realization of the importance of choosing words carefully and precisely so as not to be misunderstood. Additionally, relationship building was highlighted as a valued by-product of the social and spiritual interaction occurring between individuals.

Frustrations with online groups clustered around two issues: 1) lack of responsiveness of fellow group members; and 2) problems with technology. These online difficulties echoed the problematic acknowledgements of Miller (1994) concerning the non-participation of lurkers, and the variations of technology cited by Kerka (1996).

Online Group Membership

Concerning online group membership, despite the relative inexperience of the second group at the time of this study, the responses of the two cohorts were similar. Due to their tenure in the program, the first cohort had the distinct advantage of working in a variety of groups: those assigned and those self-selected, those groups that were heterogeneous (from varied disciplines of study), and those that were homogeneous (similar disciplines), as well as groups of varying size.

Respondents noted distinct advantages to both assigned and self-selected groups. General feelings of those preferring group assignment focused more on the *negatives* of group self-selection than on the *positive* aspects of group assignment. Concern was expressed that if students self-selected

their groups, cliques were possible leaving some learners feeling "left out." Others feared polarization within the cohort, the limitation of potential experiences, or the possibility of "getting into a rut." Apprehension concerning the time required for online group self-selection was also articulated. Some asserted that homogeneous self-selection defeated the purpose of the multidisciplinary program. If groups were assigned, respondents overwhelmingly preferred heterogeneous rather than homogeneous clustering, thus creating opportunities for wider exposure to a diversity of perspectives.

On the opposite end of the spectrum, trust and mutual respect were the overarching issues of those preferring group self-selection. Because rapport building was both time-consuming and extraordinarily difficult with unresponsive peers, several expressed the view that CMC was enhanced when working with others whom they knew and were comfortable. By selecting others with either similar interests or similar motivation and skill levels, some believed that this time could be applied more advantageously to assimilate unfamiliar academic content.

Based upon the differences of longevity in the program, more group opportunities had availed themselves to the first cohort who frequently found they were working with the same individuals semester after semester. Again, "trust" was the clarion determinant for this repetition of group membership. Other results reported included: "comfort," "ease," "dependability," "mutual respect," "rapport," "convenience," "common interests," and "personality also arose."

The preferred group size was between three and five students. This size was considered manageable yet equitable in terms of workload and accountability. Learners articulated that the communication process for this size of a group resulted in less confusion, complication, and miscommunication. They also believed this to be a better size in terms of online consensus building. For those that preferred larger groups, variety was the only reason cited.

Online Group Protocol

Reinforcing earlier findings concerning immediacy, learners confirmed their use of a combination of both asynchronous (e.g., email) and synchronous (e.g., telephone and face-to face-meetings) communication for group interaction, particularly in the completion of assignments. Protocol for the completion of these group assignments varied. Some circulated documents for editorial comments, while other groups selected one compiler/ editor, and still others established synchronous times to simultaneously communicate. Once again, these learner preferences concretely reaffirmed the need for communicative interaction throughout the learning process.

Active decision-making occurred due to the nature of groups themselves, and the ongoing demand for collaborative projects. Increased opportunities for group work naturally elevated the potential for conflict. Typical issues cited as stimulants for conflict were: 1) procrastination; 2) lack of experience and expertise in effective critiquing; 3) communication difficulties which included inexperience with the medium, conversation drift, lack of responsiveness, misperceived attitudes; and 4) misunderstandings regarding assignments. Slightly more than half of the learners reported that participation in the online group process had increased their leadership skills.

Role Expectancy of the Online Faculty Member

Respondents un-hesitantly verbalized their role expectations of the online faculty member. The following 15 descriptors were offered: 1) to guide; 2) to facilitate; 3) to teach; 4) to mentor; 5) to

encourage; 6) to challenge; 7) to provide direction and timely feedback; 8) to interact; 9) to respond to students both collectively and personally; 10) to empower; 11) to moderate; 12) to monitor intellectual development; 13) to communicate clearly and explicitly; 14) to grade consistently; and to 15) help steer research and discussion.

Learners mentioned the importance of the professor to participate actively in the discussion forum, not only in asking probing questions, but interacting in that process, once again reinforcing the need for social presence in the community of inquiry (Rourke et al., 1999). Faculty accessibility and timely responsiveness were also critically important to these learners, and could easily be accommodated through virtual or electronic office hours (Bailey and Cotlar, 1994; Chen, 1997; Hiltz, 1994; Willis, 1993b).

Learner Motivation

Participants in this study declared their self-motivation, claiming to be driven by an internal locus of control, which distinctly supports the self-direction tenet of adult learning theory (Brookfield, 1986; Knowles, 1968; Knox, 1977; Tough, 1979). Other factors which appeared to inspire these learners were the challenge, the spiritual motivation and benefit, the applicability and practicality, deadlines, grades, the degree itself, feeling connected with others, feedback, thought-provoking questions, stimulating resources, and self-discovery.

Greatest Perceived Program Strengths

Respondents noted several significant programmatic strengths: the Christian foundation and its inherent moral and spiritual support; flexibility of asynchronous communication; multidisciplinary nature of the program; required on-campus summer residencies; possibilities of communication immediacy; commitment and pioneering spirit of SLS to be on the cutting edge; warmth and friendliness of the staff; appropriateness of course reading materials; and the challenge.

Conclusions and Implications

In summary, although the findings of this investigation were not surprising, they offered support to the existing literature, raised additional questions, and served to mold and shape a virtual program in its infancy. Examination of learner perceptions of CMC in the online doctoral program revealed that communication and interaction were considered vitally important. To accommodate the perceived need for connectedness, and in an effort to close the gulf of interactive differences between the traditional and online classrooms, it was suggested that this program implement periodic town meetings along with an electronic bulletin board to facilitate the exchange of information beyond the expected content-related discussion. These information-sharing forums would facilitate a feeling of “belonging,” which was considered a basic communicative need of the virtual learner. Although the program was praised for its asynchronicity, this was also considered its greatest weakness. To overcome this barrier, one might seriously consider the addition of some form of regularly scheduled synchronous communication.

The literature strongly supports the belief that faculty development and instructional planning are essential for the effective delivery of online courses, and even more so when collaborative learning is used (Barnard, 1997; Boettcher, 1997; Brown and Brown, 1994; Chen, 1997; Dennen

and Branch, 1995; Kerka, 1996; Martin and Taylor, 1997; Seagren and Watwood, 1996; Willis, 1993a; 1993b, 1994). In an effort to ride the crest of computer-mediated instruction while planning for the online classroom of the future, instructional designers must continue to recognize man's basic need for communication and make a conscious attempt to facilitate this within their instructional protocol. Although Boettcher (1997), and Martin and Taylor (1997), claimed that technology amplifies the negatives in any teaching, several preventative measures may be taken. Several suggestions for faculty communication emerged from this study:

- Facilitate the communication of all learners to promote and enhance interactivity
- Deliver syllabi early
- Provide regular, timely, stimulating, and encouraging feedback and direction
- Be cognizant and watchful for information overload
- Approach all written correspondence with extreme care and encourage learners to do the same
- Recognize that increased time is required to respond to the sheer volume of messages generated through online communication
- Become an active participant in the intellectual dialogue, leading the community of scholars
- Facilitate trust within groups
- When designing online courses of study, consider motivational issues
- Consider having virtual office hours

In this study, the recurrent theme of the importance of communication and interaction, particularly in the desire for true intellectual discourse with faculty, raises additional questions: Do learners prefer specific types of interaction? Does frequency, amount, or speed of communication and interaction come into play? Could this expression of need for high caliber scholarly dialogue, particularly with the faculty, possibly relate to the doctoral level of academic endeavor? Is this group representative of online learners from other disciplines or educational levels?

As the concept of the virtual classroom continues to be widely embraced by the global higher educational academic community, the field is ripe for scholarly research and development. While this study of two groups of online learners provided qualitative support for the current literature, experimental studies in the areas of interaction and isolation and their impact on CMC are needed.

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Appendix

Communication Perception Questionnaire

1. What is your perception of the nature and quality of the online communication between you and the SLS staff? Between you and faculty? Between you and fellow students?

2. How important do you feel online communication is between you and the SLS staff? Between you and faculty? Between you and fellow classmates?

3. Do you believe online communication flows smoothly between you and the SLS staff? Between you and faculty? Between you and fellow students?

4. Is the information that you receive from SLS meaningful, useful and in a useable form? From the faculty? From other students?

5. Do you ever experience "information overload?" If so, what do you believe attributes to this?

6. What types of information do you believe students are not receiving that you feel may be necessary?

7. Is communication immediacy (i.e., involvement and closeness) between student and faculty important to you? Between you and fellow students? How are you obtaining/maintaining this?

8. Do you perceive that any student may feel isolated? If so, to what do you attribute this? Do you personally ever experience isolation?

9. How often do you open your e-mail? How quickly do you typically respond to it?

10. What types of formal and informal communication networks do you utilize within your cohort?

11. Which communication channel (e.g., electronic, telephone, written, etc.) do you use most often when communicating with SLS staff? With the faculty? With fellow classmates? How do you feel about its effectiveness? Why?

12. In what ways do you feel online communication effects the demands placed upon your time?

13. What do you think should be the primary purposes for online group communication?

14. What have you gained most from the experience of working with groups online?

15. What have been the greatest difficulties you have experienced in working with online groups?

16. Would you prefer to choose your own group members or would you rather that they be assigned? Which do you think works best for online communication? Why?

17. Do you find yourself frequently working with the same individuals semester after semester? Why?

18. If groups were assigned, would you prefer that they were grouped heterogeneously or homogeneously in regards to your relative interests?

19. What size online group have you found to be the most ideal? Why?

20. For your SLS classes, what methods of group interaction have you found work best (e.g., telephone, e-mail, get together)?

21. What types of protocol have you used in group communication (e.g., set times to simultaneously communicate through e-mail, conference calls, chat rooms, pass around the document, have one editor/compiler)?

22. Have you found true intellectual interaction in your group communications? What do you think stimulates this? What could be done to improve this?

23. Do you ever find yourself posting an answer just to satisfy a requirement? How often?

24. What methods of decision-making have occurred in your groups?

25. Have you experienced any conflict in your online groups? What do you feel are the most common sources and nature of this conflict? How have they been resolved?

26. Do you feel that you have gained any leadership skills in your online group communication? If yes, what skills have you gained?

27. What do you feel is the primary role of the online professor?

28. How do you envision the online professor facilitating group discussion? How do you envision this occurring?

29. Do you feel that your professors are readily accessible via your choice of communication channel?

30. What motivates you as a learner? How do you feel this method of online learning/communication is meeting your learning needs?

31. Do you use the Internet to communicate with fellow students purely for class-related purposes? Do you ever use it for social and spiritual interaction with fellow classmates? Which? How often?

32. Overall, what do you see as the greatest communication *strengths* in this online program?

Demographic Information

33. Male _____ Female _____

34. Age _____

35. Cohort _____

36. Cognate _____