Immediacy, Composure, Receptivity, Communication Quality, Communication Satisfaction, Involvement, and Connectedness/Mutuality in Face-to-Face and IITV Instruction

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Abstract

Relational communication characteristics of immediacy, composure, and receptivity; the experience of communication quality and communication satisfaction; and the sense of involvement and connectedness-mutuality are shown to differ in significant ways for students taking courses offered through interactive instructional television (IITV) and those taking the same courses in a face-to-face context. More importantly, the relationships among these communication variables, and particularly the effects of immediacy and receptivity upon the experience of communication quality and satisfaction, and upon the sense of connectedness-mutuality and involvement, suggest ways in which instructors can more effectively communicate with students through an IITV mediated communication environment.

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Increasing use of technology in the classroom is changing and shaping the communication of instructors with students. The use of fiber-optic and satellite technologies are flourishing in distance education courses, allowing students at remote locations to participate in the classroom through web courses and live-video instruction (Chavkin, Kennedy, & Carter, 1994). Classes take place over the computer using web programs such as WebCT and Blackboard, and through interactive instructional television (IITV). Research devoted to the study of mediated communication, and its impact on a variety of communication processes and outcome variables, has accompanied this development in distance learning via web and IITV courses.

This research has shown how the use of these new technologies affect the ways in which humans communicate through mediated contexts that place fewer restrictions on the time and place of the communication (Spears & Lea, 1994). The present study extends previous research (a) by examining the features of mediated IITV instruction, comparing IITV to face-to-face instruction, (b) investigating the properties of human communication that change as a result of communicating through an IITV mediated environment, and (c) making suggestions for how instructors might modify their communication style to more effectively use the technologically mediated communication to enhance their classroom instruction. Specifically, the study examines students' perceptions of the relational communication components of immediacy, composure, and receptivity; their sense of the communication quality in and communication satisfaction with the classroom instruction experience; and their resulting feelings of

involvement and connectedness-mutuality when taking a course face-to-face or through IITV instruction.

LITERATURE REVIEW

The use of technology creates more opportunities and channels for instructors and students to communicate with each other. Colleges and universities have harnessed the new technologies of IITV, web-based instructional software such as Blackboard and WebCT, and combinations of these technologies, to provide students who live in remote areas access to a college education. If students and instructors are communicating with each other through mediated settings, an important question to ask is: What makes technologically mediated communication different from face-to-face interaction, and how can that difference be positively influenced to increase the beneficial effects of interpersonal communication on the instructional outcomes, even when that education is delivered at a geographical distance through technologically mediated means? In order to understand how to positively influence the interaction, we need to first understand the characteristics of the mediated communication and the relationships among them.

Mediated Interaction and Relational Communication

As individuals interact with each other, regardless of the medium, the nature of their relationship is shaped through their relational messages. "Relational messages are those verbal and nonverbal expressions that indicate how two or more people regard each other, regard their relationship, or regard themselves within the context of the relationship" (Burgoon & Hale, 1984, p. 193). Past research suggests that these relational messages are affected by the medium through which people communicate.

Immediacy is the level of attraction and perceived instructor involvement conveyed through a communication interaction. Immediacy is important in instruction because Hackman and Walker (1990) report a positive relationship between instructor immediacy and student learning and satisfaction in mediated contexts. Composure is the degree of calmness and relaxation that one displays (Burgoon & Hale, 1984). Hackman & Walker (1990) also find that instructors who display nonverbal behaviors that are more relaxed and natural are evaluated more favorably. Receptivity reflects "the observer's degree of interest and openness to sensory stimulation" (Burgoon & Hale, 1984, p. 198). Johnson and Roman (2003) suggest that IITV may be a hindrance to creating trust between an instructor and a distance-learning student, although this has not been empirically tested to date. A reduction in vocal, visual, environmental, and non-verbal cues present in a technologically mediated communication can increase the likelihood of students perceiving their instructor as less immediate, composed, and receptive compared with instructors communicating face-to-face. It is hypothesized that the nature of the relational communication will be affected by IITV mediated instruction such that perceptions of instructor immediacy, composure, and receptivity will each be reduced.

Research on IITV has compared communication through a mediated environment with a face-to-face environment and examined perceptions of interactivity (Himpens, 2003), instructor immediacy (Carrell & Menzel, 2001), instructor competence (Cyrs, 1997; Guerrero & Miller, 1998), instructor effectiveness (Rifkind, 1992), and satisfaction with the instruction (Petracchi & Patchner, 2001). This research suggests that instructor effectiveness can be explained, in part, by perceptions of instructor immediacy over IITV (Rifkind, 1992), such that the greater the immediacy displayed, the greater the perceptions of instructor effectiveness (Andersen, 1979). This conclusion leads to the first hypothesis in the present study.

H1: Students communicating face-to-face will perceive the instructor to be expressing greater immediacy, composure and receptivity than students communicating with the instructor through an IITV mediated interaction.

Communication Quality and Satisfaction.

Although differences in relational perceptions of the instructor are important to the educational experience, perceptions of the communication quality and communication satisfaction of mediated interactions may also differ in important ways from face-to-face situations. Communication quality is the degree to which interactions are "personal, smooth, efficient, important, and satisfying" (Sprecher & Duck, 1992, p. 3). Communication satisfaction is the degree to which an individual receives positive reinforcement from a communication event which fulfills positive expectations (Hecht, 1978). The experience of communication quality and satisfaction may not necessarily be directly and inherently influenced by the medium itself, and simply because an interaction is not face-to-face, does not necessarily imply an automatic reduction in communication quality or communication satisfaction. Indeed, individuals can send asynchronous, written e-mail messages that are perceived to be personal, smooth, efficient, and satisfying. Yet, certain forms of mediated communication, such as IITV, may be perceived by participants as less personal, smooth, efficient, and satisfying than face-to-face interactions.

The communication medium can make it more difficult for participants to interact, and to the degree that communication interaction expectations are not fulfilled due to a lack of vocal, visual, or environmental cues, the mediated communication context may decrease a student's sense of the quality of the communication and of communication satisfaction.

Although some research has, at times, found only small differences in levels of communication satisfaction between live-video and face-to-face instruction (Allen, Bourhis, Burrell, & Mabry, 2002), communication satisfaction continues to be of interest to scholars studying distance education because participants often expect IITV to simulate face-to-face instruction, and deviations from expected relational components of communication may negatively influence communication satisfaction. Also, as Hecht (1978) suggests the previous interactions with an individual shape our expectations of the other's behavior. If the other adheres to those expectations in an interaction, communication satisfaction can be achieved. IITV instruction reduces the opportunity for this previous interaction and the development of a relationship upon which satisfying communication can be built. Overall, research suggests that the communication quality and communication satisfaction may be reduced by the use of mediated communication versus face-to-face interaction. One purpose of the present study is to test these two related hypotheses:

H2a: Students communicating face-to-face will perceive a higher level of communication quality than students communicating through IITV mediated interaction.

H2b: Students communicating face-to-face will perceive a higher level of communication satisfaction than students communicating through IITV mediated interaction.

Interpersonal Interactivity: Involvement and Connectedness/Mutuality

Much research has been conducted on "interactivity" in mediated settings (Kiousis, 2002; Rafaeli, 1988). However, depending on the medium, interactivity has been conceptualized in a number of different ways. Research on human-computer interactions, for example, often defines interactivity in terms of the technological structure (Reeves & Nass, 1996) or the extent to which a user can adapt the form and content of a mediated environment, such as a web page, to their

own uses (Heeter, 1989; Steuer, 1992). In contrast, a communication perspective on interactivity examines the extent to which a mediated environment is similar to, or simulates, a face-to-face interaction (Walther & Burgoon, 1992). From this perspective, characteristics inherent in a mediated environment can facilitate or hinder interpersonal interactions. Thus, the degree of interpersonal interactivity is conceptualized in terms of the properties of the interaction (Burgoon et al., 2002). These interaction properties include: (a) propinquity or proximity, (b) participation, (c) modality richness, (d) synchronicity, and (e) identification. Propinquity refers to whether the interaction takes place in the same location or in a geographically different location (Burgoon et al., 2002). IITV students in remote areas can go to a local IITV site to participate in a class that originates at a different location. Participation, however, depends on the degree to which students are able to be both senders and receivers in the interaction (Burgoon et al., 2002). Although IITV closely simulates face-to-face instruction when compared to asynchronous audio or written communication, even when that is carried out over the web, the quality of the link, the level of expertise of the technician facilitating the technological link, and the communication style of the instructor, can sometimes make interaction as a sender or even as a receiver less than fluid and fully participatory. Modality richness is the degree to which individuals can use a variety of environmental, verbal, nonverbal, and visual cues to send and receive messages (Burgoon et al., 2002). In IITV participants have somewhat reduced cues and modality richness can be lacking compared to a face-to-face instructional interaction. Synchronicity occurs when participants are able to communicate synchronously in real time rather than asynchronously with delays between their interactive turns (Burgoon et al., 2002). IITV attempts to achieve real time participation without delays in the back and forth nature of conversations, however, distance can create some slowness in response between sites, reducing the synchronicity of the interaction. Finally,

identification is the degree to which an individual is known as a unique person to the other, rather than being anonymous or known as a member of a generalized group such as "student" (Burgoon et al., 2002). A degree of anonymity is more likely to be present in IITV interactions than in a face-to-face setting. In sum, IITV courses originating from remote locations are more likely to be characterized by less proximity, less participation, less modality richness, less synchronicity, and less identification with the instructor than students taking the course through a face-to-face medium.

These properties of communication can influence the degree of involvement and connectedness/mutuality students experience when taking a course through mediated interaction. Involvement is how engaged people are and their level of participation in the communication (Burgoon et al., 2002; Cegala, Savage, Brunner, & Conrad, 1982). Connectedness/mutuality is the degree to which participants feel connected with each other (Burgoon et al., 1999).

IITV distance-learning contexts, when compared to face-to-face instruction, offer: (a) fewer visual and vocal cues in mediated communication, (b) these reduced visual and vocal cues can result in reduced levels of interactivity and, (c) this interactivity is itself mediated by the communication channel such that mediated communication is less interactive than face-to-face communication (Burgoon et al., 1999). The following hypotheses are therefore proposed:

H3a: Students communicating face-to-face with the instructor will feel more involved in the interaction than students communicating with their instructor through IITV mediated interaction.

H3b: Students communicating face-to-face will feel greater connectedness/mutuality with the instructor than students communicating with their instructor through IITV mediated interaction.

Immediacy, Composure, Receptivity; Quality, Satisfaction; Involvement, Connectedness/Mutuality

Beyond predicting the influence of the IITV mediated communication environment upon the students' relational characteristics of immediacy, composure, and receptivity; the experience of communication quality and communication satisfaction; and sense of involvement and connectedness-mutuality; it is important to ask the question: What is the relationship between and among these communication variables? In order to avoid an overly simplistic and technologically deterministic perspective one must expand the notion of "medium" beyond the influence of the IITV technology to a larger conceptualization of a communication medium in which the communicators participate and actively modify and shape the effects of the technology upon their communication relationship. To investigate the multiple human communication influences present in and modifying the IITV instructional context the present study constructs and tests a path analysis model.

Although these relationships have not been previously tested, within both the IITV and the face-to-face contexts the three characteristics of relational communication immediacy, composure, and receptivity are expected to influence the experience of communication quality and of communication satisfaction. The experience of communication quality and communication satisfaction should, in turn, influence participants' sense of involvement and of connectedness-mutuality with the instructor and the other students in the course.

RQ1: What are the influences of immediacy, composure, and receptivity upon communication quality, communication satisfaction, connectedness-mutuality, and involvement?

RQ2: What are the influences of communication quality and communication satisfaction upon connectedness-mutuality and involvement?

METHODS

Participants

The sample for this study was drawn from the total population of students enrolled in 24 different IITV classes teaching course contents across the curriculum at a medium sized southwestern university. For a class to be included in the study, one location had to communicate with the instructor face-to-face while at least one other location interacted with the instructor through IITV. A total of 524 students were sent an e-mail asking them to participate in a study of IITV classes. 163 surveys in total were completed making a 32% response rate. Seventy-seven (77) of the students participated in the class face-to-face with the instructor while 86 participated in the IITV class from a remote location. In terms of age, 31.1% of participants were between the ages of 18 to 22, 24.4% were between 23 to 30, 25% were between 31 to 40, 11.4% were between 41 to 50, and 7.9% were between 51 to 60. In terms of gender, 16.9% were male and 83.1% were female. In terms of ethnicity, 55.8% were Caucasian, 27% were American Indian, 14.1% were Hispanic and .6% were African American and 2.5% indicated ethnic "Other".

Procedures

The survey was completed by participants online. The principal investigator (PI) obtained a list of all IITV classes and the e-mail addresses of all students enrolled in those classes. Each student was sent an e-mail asking for their participation in a study on attitudes and perceptions of IITV classes from the PI. In the e-mail, the PI explained the nature of the study, told participants their rights as a research subject (IRB approval was granted), and elicited their participation in the online survey. The URL for the study was provided in the e-mail correspondence. As an

incentive to participate, the participants were told that they would be entered in a drawing to win an MP-3 player.

Communication Measures

Relational communication: Immediacy, Composure, Receptivity. The Relational Communication Scale (Burgoon & Hale, 1987) was used to measure the dimensions of relational communication (immediacy, composure and receptivity). The measure was a 7-point Likert scale with items ranging from 1 (strongly disagree) to 7 (strongly agree). *Immediacy* was measured with 7 items (e.g., "The instructor communicated coldness rather than warmth") and had a reliability of .85. *Composure* was measured with 6 items (e.g., "The instructor was calm and poised with the class") and had a reliability score of .86. *Receptivity* was measured using 3 items (e.g., "The instructor was willing to listen to the class") and had an Cronbach's alpha of .86.

Communication quality. Communication quality was measured using a section of the Iowa Communication Record (ICR) (Duck et al., 1991). The scale consists of four 7-point semantic differential items tapping into understanding, satisfaction, communication breakdown, and interest (alpha = .85).

Communication satisfaction. The measure of communication satisfaction was from the Interpersonal Communication Satisfaction Inventory (ICSI) (Hecht, 1978). The language of the ICSI was adapted to the classroom context (alpha = .84).

Involvement. Involvement was measured using 4 items from the Interaction Involvement Scale (Cegala 1981). The Cronbach's alpha of the scale was .89.

Connectedness/Mutuality. Connectedness/Mutuality was measured with two items. The first item "I feel connected to the instructor", was rated on a 7-point scale from Strongly Agree to Strongly Disagree. The alpha for this scale was .84. The second item used 7 drawings, each

containing two circles similar to Venn-diagrams (Aron, Aron, & Smollan, 1992). One circle represented "Self" and the other represented the "Instructor." The first drawing displayed the two circles contiguous and non-overlapping. Each of the following drawings showed an increase in overlap until the seventh drawing which displayed the circles almost completely overlapping. The instructions read as follows: "Please circle the picture below that best represents how connected you felt with your instructor during this class."

Analysis

A MANCOVA was used to test differences between face-to-face and IITV instructional interactions with the medium (IITV versus face-to-face) as the independent variable and measures of immediacy, composure, receptivity, communication quality, communication satisfaction, involvement, and mutuality/connectedness, as the dependent variables. Following the MANCOVA, a path analysis was employed to examine and model the relationships among the dependent measures for the present sample of students.

Previous research has shown differences in attitudes among students enrolling in distance education classes depending on whether the student is a distance-site student or an on-site student taking the course through IITV (Bisciglia & Monk-Turner, 2002). Distance-site students are more likely to be female, older, to live in rural areas, to be more motivated to take distance education classes, and often do not have a viable alternative to the technologically mediated instruction (Bisciglia & Monk-Turner, 2002). There is some evidence that, because of this set of demographic characteristics, distance students may be more willing to overlook difficulties in the communication, the quality of instruction, and the technology; and to focus more on their personal educational gains. They often also have fundamentally different expectations of the instructor and of the interaction (May, 1994). For this reason, in the present study, a variable

identifying students enrolled as a distance-site student versus a traditionally on-site student was treated as a covariate to whether the student was taking this specific course through face-to-face or IITV mediated instruction. In the present study 16 (18%) of the distance-site students were taking the course through face-to-face instruction while 72 (82%) were taking the course through IITV. Of the traditional students 55 (86%) were engaging in face-to-face instruction while 9 (14%) were engaging in IITV instruction.

RESULTS

The MANCOVA produced a significant overall effect for the measures showing a significant difference in the perceptions of instructional communication between the IITV and face-to-face conditions (Wilks' lambda = .84, F (7, 143) 3.97, $p < .001$, partial eta^2 = .16). To parse out this overall effect the MANCOVA was followed by univariate F tests for each of the dependent measures. Table 1 presents the F statistics and group means for each of these tests.

Insert Table 1 about here

Hypothesis 1, predicted that students communicating face-to-face would perceive the instructor as expressing greater immediacy, composure and receptivity than students communicating through IITV. Hypothesis 1 received partial support. Immediacy, F (1, 152) = 7.14, partial eta^2 = .046, $p < .01$ and receptivity, F (1, 152) = 3.78, partial eta^2 = .025, $p = .05$ showed significant differences in the face-to-face and IITV group responses. Composure showed a non-significant trend in the appropriate direction, F (1, 152) = 2.90, partial eta^2 = .019, $p = .09$. The instructor was perceived by students in the IITV condition as less immediate (M = 5.40) and less receptive (M = 5.85) than by students in the face-to-face condition (immediate M = 5.76; receptive M = 6.06).

Hypothesis 2a and 2b also received support. Students communicating face-to-face perceived better communication quality than students communicating through IITV interactions, F (1, 152) = 12.88, partial eta^2 = .08, p < .01. Students in the face-to-face group (M = 5.36) perceived a higher level of communication quality than students in the IITV group (M = 4.63). In support of hypothesis 2b students perceived a higher level of communication satisfaction F (1, 152) = 5.65, partial eta^2 = .037, p < .05 when communicating face-to-face (M = 5.65) than the students communicating through the IITV mediated interaction (M = 4.99).

Hypothesis 3a and 3b received support as well. Hypothesis 3a predicted that students communicating face-to-face with the instructor would feel more involved than students communicating with their instructor through IITV interaction. Results show significant differences in involvement between the face-to-face and IITV groups, F (1, 152) = 14.68, partial eta^2 = .09, p < .01. The group means show that students in the IITV condition (M = 4.62) were significantly less involved in the interaction than students in the face-to-face condition (M = 5.02). In support of hypothesis 3b students communicating face-to-face with the instructor (M = 4.53) expressed greater connectedness/mutuality with the instructor than students communicating with their instructor through the IITV interactions (M = 3.55), F (1, 152) = 18.91, partial eta^2 = .11, p < .01.

Table 2 shows the correlations among these communication characteristics. Immediacy is correlated with composure, receptivity, communication quality, connectedness/mutuality, communication satisfaction, and to a lesser extent to involvement. Composure and receptivity show similar patterns of correlation. This correlation matrix helped to develop and refine the path analysis model.

Path Analysis

The path analysis was conducted to model the relationships among the set of communication characteristics and respond to the research questions about the relationships among the communication characteristics. The resulting model depicted in Figure 1 begins with the instructor relational expression variables of immediacy, composure, and receptivity and shows the relationships among these and the indices of perceptions of communication quality, communication satisfaction, connectedness/mutuality, and involvement. The statistical program AMOS was employed to develop the path analysis.

Insert Figure 1 about here

Insert Table 2 about here

The goodness of fit of the path analysis model to the sample data was assessed using five indices (Tabachnick & Fidell, 2001). These indices are (a) a χ^2 value with a non-significant difference between the model and the observed data, (b) the ratio of the χ^2 to the degrees of freedom of 5 or less (Marsh & Hocevar, 1985), (c) a Bentler-Bonett normed fit index (NFI) of .90 or greater (Bentler & Bonett, 1980), (d) a relative fit index (RFI) of close to 1 (Bollen, 1986) and (e) a root mean square error of approximation (RMSEA) of less than or equal to .08 (Browne & Cudeck, 1993). Each of these parameters indicates an acceptable fit of the path model to the data with a (a) $\chi^2 = 4.86$, df = 4, $p = .30$, (b) χ^2:df =1.21, (c) NF I= .995, (d) RFI = .995, and (e) RMSEA = .036.

In response to the two research questions concerning the multiple influences of immediacy, composure, receptivity, communication quality, and communication satisfaction the path coefficients in the model show, as expected, that the immediacy, composure, and receptivity measures of relational communication are correlated. More importantly the model also shows that how connected students feel with their instructor (connectedness / mutuality) is influenced by their perceptions of teacher immediacy (β = .40) and receptivity (β = .21); however, composure is relatively unrelated to it (β = .01) and the link was dropped from the model. In addition, how satisfied students feel about the classroom interaction (communication satisfaction) is influenced by the student's perceptions of teacher immediacy (β = .16), composure (β = .11), and receptivity (β = .20). Immediacy is a moderately strong predictor (β = .38) of communication quality while composure (β =.00) and receptivity (β = -.01) appear unrelated to it and are dropped from the model. Immediacy (β =.40), receptivity (β =.21), and communication satisfaction (β =.24), together account for 64% of the variance in the measured perceptions of connectedness / mutuality. Immediacy (β =.16), composure (β =.11), receptivity (β =.20) together with communication quality (β = .42) account for 64% of the variance in communication satisfaction. Immediacy (β = .38) along with connectedness/ mutuality (β = .40) account for 57% of the variance in communication quality. Finally, communication satisfaction (β = .42) and communication quality (β = .28) account for 42% of the variance in the measure of involvement.

DISCUSSION

The results of the present study suggest some of the communication influences of IITV mediated interaction on instruction in the classroom. The study shows that communication variables, as well as the technological medium, have an impact on the instructional environment.

The first hypothesis predicted that perceptions of the instructor differ in terms of immediacy, composure, and receptivity. In the face-to-face condition students perceived the instructor as more immediate and more receptive than students in the IITV mediated condition. These results indicate a relationship between the perceptions of the communication and the medium of communication. Although IITV is considered a rich medium compared to other mediated modes of communication such as e-mail or voice mail, the medium appears to influence and dampen perceptions of instructor immediacy and receptivity in mediated interactions. Immediacy, the building of a strong positive relationship through interaction, and receptivity, displayed through behaviors that communicate interest in students, including being open to students' comments and a willingness to listen to students. The present findings generally support past research in suggesting that nonverbal behaviors that display a natural and calm demeanor enhance student communication and the learning experience (Hackman & Walker, 1990). The present findings build and add on to that past research in suggesting that immediacy and receptivity also contribute to the experience of connectedness / mututality, communication satisfaction, and communication quality in ways that indirectly influence the instructional environment and experience.

The second hypotheses predicted that communication quality and communication satisfaction would differ such that the face-to-face students would perceive greater communication quality and greater communication satisfaction than for the IITV mediated students. The results show significantly lower levels of communication quality and communication satisfaction in the mediated communication group than in the face-to-face. This suggests some interesting implications for distance education instructors. The medium is a significant consideration when designing distance class instruction. Although IITV may seem

like a medium that can foster full interpersonal relationships as well as face-to-face interactions, the results of the present study indicate that this does not happen without some direct and specific efforts on the part of the instructor. Transactional distance theory suggests that three areas need to be addressed in order to improve an IITV learning experience (Moore, 1973; 1993). The structure, dialogue, and autonomy of the interaction are important to a mediated course interaction. The structural rigidity or flexibility of the course's organization and delivery, and the reliability and quality of the technology itself influence the educational experience and can become a significant distraction to the learning environment (Burrow & Glass, 2001, Johnson & Roman, 2003).

The IITV system is designed to provide smooth, flawless interactions that simulate face-to-face interactions. Although broadcast quality is not necessary, it is important to reduce audio and video transmission delays which can result in students' rejection of the technology (Hackman & Walker, 1990; Rice, 1984). A technician needs to test the system before the class begins to know how to trouble shoot the system, to talk to the instructor about the quality of the transmission and to communicate with the instructor about how he or she wants the classroom shots to be handled. The instructor has a responsibility to learn how to navigate on the IITV equipment with ease, to learn how to create effective and easy to read presentation tools, and to learn the best teaching practices for this medium. In addition to the technology itself, the instructional design needs to be considered in light of mediated interactions. A change in the structure can produce a pronounced change in the classroom dialogue that occurs between the students and instructor (Johnson & Roman, 2003; Moore, 1993).

The third hypotheses predicted that students communicating face-to-face would feel more involved and more connected to the instructor than students communicating in mediated

interactions. The results show the differential effects of the medium of communication on the level of student-instructor involvement. When students communicate with the instructor through IITV they feel less involved in the interaction than students in the face-to face interaction. In addition to involvement, students in the mediated group also feel significantly less connectedness / mutuality with the instructor.

The present study suggests that although the medium affects the dialogue between the student and instructor in important ways, by influencing the flow of the interaction, that the student's perceptions of the instructor can change the communication experience as well. Changes in an instructor's relational expressions of immediacy, composure, and receptivity affects the dialogue and classroom instructional experience of connectedness / mutuality, communication satisfaction, communication quality, and involvement. A previous study found that instructors who smiled, used vocal variety, invited questions, asked questions of distance students, and encouraged distance students to contribute to discussions, had a better sense of rapport and engagement with the class (Hackman & Walker, 1990). The present study's path analysis suggests that instructors can use these verbal and nonverbal cues and strategies in ways to facilitate a greater sense of immediacy which influences the students' perceptions of connectedness / mutuality with the instructor, their feelings about communication quality, and how satisfied they are with the communication. In addition, cues that express trust and generate receptivity, also affect connectedness / mutuality and communication satisfaction as well.

By focusing some specific attention on these aspects of the relational communication, instructors can encourage students who are hesitant or intimidated by the IITV system, and facilitate student involvement and student responsibility for learning (Johnson & Roman, 2003). The present model suggests that in addition to instructor immediacy, a calm presentation with

relaxed nonverbal expressions that communicate composure and cues that express trust, can increase a student's experience of communication quality and communication satisfaction, and ultimately, the communication quality and satisfaction affect the student's involvement in the course's interaction and learning experience.

Instructors have the ability to focus attention on these relational communication variables, even in the IITV medium, and through them influence the IITV mediated communication experience of connectedness/mutuality, communication satisfaction, communication quality, and sense of student involvement. Taking into account the significant differences found in the experiences of students in the face-to-face and IITV mediated instruction contexts, instructors should focus particular attention on these communication strategies in the IITV mediated course context to create an environment that encourages student interaction, enhances the IITV mediated classroom environment, and improves the learning experience.

Table 1
MANCOVA Comparing Face to Face and Mediated Classroom Instruction with Distance Student as a Covariate

Classroom Instruction Medium						
Wilks' lambda =.84, $F(7,143)=3.97$, $p=.001$, partial $eta^2=.16$						
Relational Expression	Face to Face Group Mean and (SD) (n=71)	Mediated Group Mean and (SD) (n=81)	*F*	*p*		partial eta^2
Immediacy	5.76 (.97)	5.40 (1.12)	7.14	0.01	**	.05
Composure	5.92 (.91)	5.87 (.95)	2.90	0.09		
Receptivity	6.06 (1.06)	5.85 (1.13)	3.78	0.05	*	.02
Perceptions of Communication	Mean (SD)	Mean (SD)	*F*	*p*		partial eta^2
Communication Quality	5.36 (1.20)	4.63 (1.59)	12.88	0.001	***	.08
Involvement	5.02 (1.41)	4.62 (1.79)	14.68	0.001	***	.09
Connectedness / Mutuality	4.53 (1.51)	3.55 (1.66)	18.91	0.001	***	.11
Communication Satisfaction	5.65 (1.34)	4.99 (1.70)	5.65	0.02	*	.04

N = 152, Standard deviations in parentheses

Table 2

Correlations

	Immediacy	Composure	Receptivity	Communication Quality	Involvement	Connectedness / Mutuality	Communication Satisfaction
Immediacy	1.00						
Composure	0.73	1.00					
Receptivity	0.85	0.68	1.00				
Communication Quality	0.68	0.51	0.61	1.00			
Involvement	0.45	0.35	0.40	0.59	1.00		
Connectedness / Mutuality	0.75	0.58	0.71	0.73	0.55	1.00	
Communication Satisfaction	0.70	0.58	0.67	0.74	0.62	0.72	1.00

Note: All correlations were significant at the $p < .05$ level.

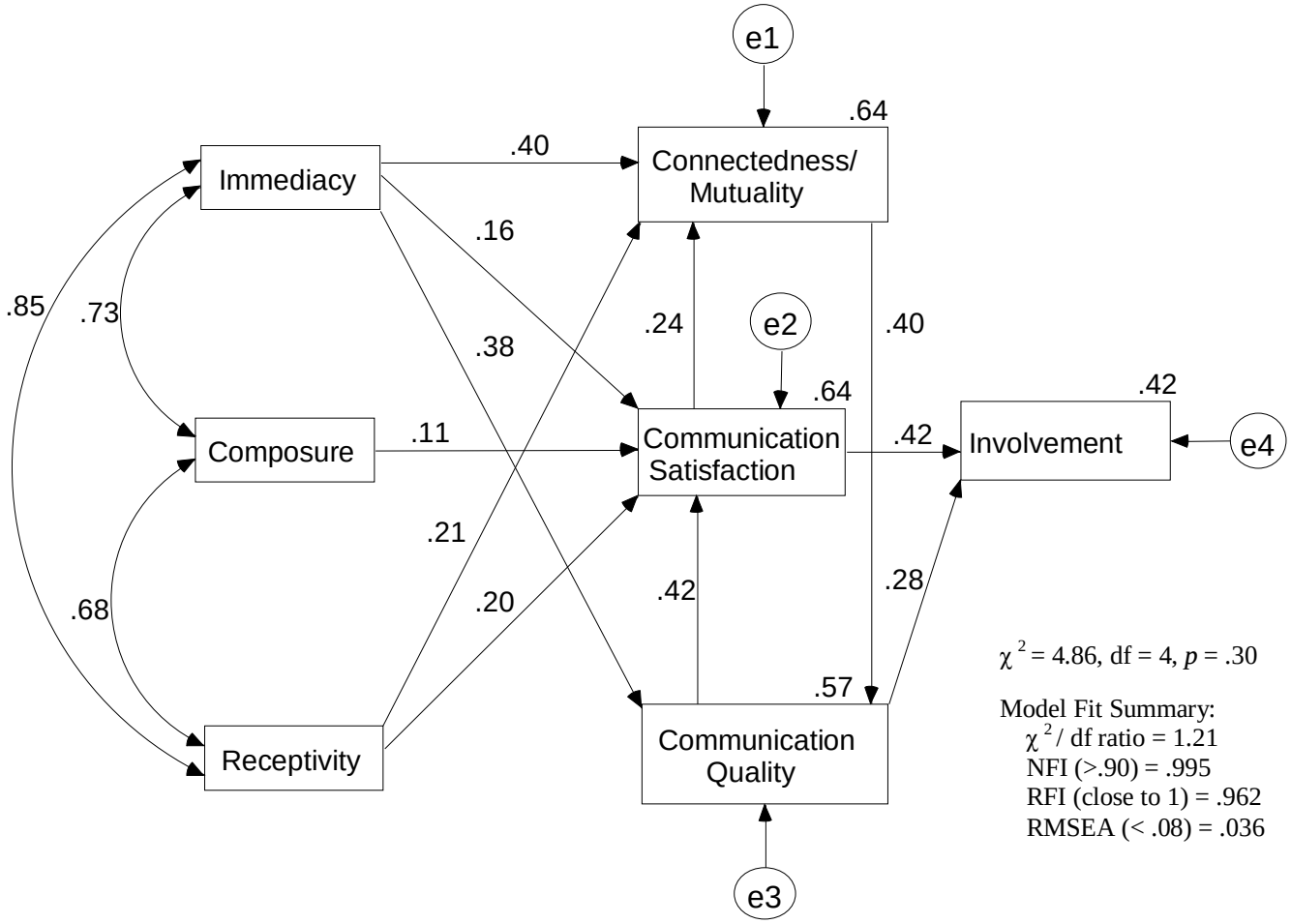

Figure 1: Path Analysis showing relationships among relational communication variables and perceptions of the communication in face-to-face and mediated instruction contexts.

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