STUDENTS' PERCEPTIONS OF LEARNER EMPOWERMENT AND INVOLVEMENT AS FUNCTIONS OF STUDENTS' EXPECTATIONS OF INSTRUCTIONAL TECHNOLOGY USE AND NONVERBAL IMMEDIACY

by

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The purpose of this study was twofold: (1) to examine the interaction effect of nonverbal immediacy and expected instructional technology use on students' perceptions of learner empowerment and student involvement, and (2) to test learner empowerment as a potential mediator of perceived instructional technology use and nonverbal immediacy on student involvement. Participants included 264 college students who were randomly assigned to one of eight scenarios depicting first-day class sessions manipulating expected technology use across four levels (none, minimal, moderate, and complete use) and instructor nonverbal immediacy across two levels (high vs. low).

Contrary to what was hypothesized, the results failed to replicate the interaction effects of expected technology use and nonverbal immediacy cues found in previous research.

Instead, the results revealed only significant main effects for nonverbal immediacy cues on students' perceptions of learner empowerment and student involvement. The results of an analysis of covariance, however, revealed that learner empowerment fully mediates the association between an instructor's nonverbal immediacy cues and student involvement. A significant two-way interaction effect of perceived technology use and nonverbal immediacy on student involvement after controlling for the effect of learner empowerment also emerged, revealing a pattern of moderated mediation. Collectively, the results extend instructional communication theory by identifying learner empowerment as a key construct that facilitates the association between teacher nonverbal immediacy and student involvement in the course.

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Students' Perceptions of Learner Empowerment and Involvement as Functions of Students' Expectations of Instructional Technology Use and Nonverbal Immediacy

The use of instructional technology to facilitate student learning is becoming more prominent in college classroom environments, and integrating instructional resources such as PowerPoint, video, and web-based technologies into the classroom has become a custom practice for instructors. As Witmer (1998) noted, integrating communication technologies into the classroom can be used to enhance pedagogy and prepare students to compete in competitive job markets. Lane and Shelton (2001) have cautioned instructors, however, against the uncritical implementation of technology as an instructional tool without first carefully considering the pedagogical framework designed to achieve specific instructional objectives. Further, they called for researchers to empirically examine the influence of technology on instructor and student outcomes.

In response to their concerns, scholars have begun to examine critically the various pedagogical benefits associated with the use of technology in instructional settings. Specifically, the differential use of technology has been investigated with regard to students' perceptions of instructor credibility (Schrodt & Turman, 2005), as well as

students' perceptions of affect for the course and the instructor (Turman & Schrodt, 2005). In addition, researchers have noted that instructors' nonverbal immediacy behaviors moderate the impact of technology use on students' perceptions of instructor credibility (Schrodt & Witt, 2006) and affect for the course and the instructor (Witt & Schrodt, 2006). Although previous studies suggest an instructor's decision to use various types of technology can impact students' initial ratings of the course and the instructor, much less is known concerning the extent to which technology use and course design may empower students to learn and increase their involvement in the course. Consequently, this investigation extends current research on the pedagogical influence of differential technology usage in the classroom by exploring the effects of technological design on learner empowerment and student involvement.

The primary purpose of this investigation is twofold: (1) to explore the influence that varying degrees of instructional technology use and nonverbal immediacy behaviors have on perceived learner empowerment and student involvement, and (2) to test learner empowerment as a potential mediator of perceived instructional technology use and nonverbal immediacy on student involvement in the course. Instructional technology, if used appropriately and effectively to achieve

instructional objectives, can provide additional resources useful for learning and facilitating teacher-student interactions both within and outside of the classroom. Thus, one might reason that instructors' decisions to integrate technology into the college classroom may potentially impact students' empowerment to learn, and subsequently, their involvement in the course. Rather than blindly integrating technology without considering this potential impact, this investigation builds upon extant research (Lane & Shelton, 2001; Schrodt & Turman, 2005; Turman & Schrodt, 2005) to provide further empirical insight into the effects of instructional technology on student outcomes.

Theoretical Perspective

This study was informed by McCroskey, Valencic, and Richmond's (2004) general model of instructional communication. According to this model, there are six essential components comprising the instructional process, including (1) the instructional environment, (2) student characteristics, (3) teacher characteristics, (4) teacher verbal and nonverbal behaviors, (5) student perceptions of the teacher, and (6) instructional outcomes. Although testing the associations among all six elements lies well beyond the scope of this investigation, this study focused specifically on testing the associations between two of the elements in the

model: teacher verbal and nonverbal behaviors (i.e., instructors' use of technology and nonverbal immediacy) and instructional outcomes (i.e., learner empowerment and involvement).

Instructional Technology Use

"Tomorrow's technology is quickly transforming the role of learning" (Perelman, 1992, p.51). As such, instructors are faced with important decisions regarding the use of technology in the classroom. With the wide variety of instructional tools available to facilitate learning, scholars have called for empirical investigations examining the influence of technology on student outcomes (Frymier, Shulman, & Houser, 1996). However, due to the rapid expansion of technology, researchers have only begun to examine the various ways in which instructor decisions to implement, and communicate with, technology are associated with instructor and student outcomes.

Many scholars examining the effects of instructional technology have compared traditional face-to-face classrooms with distance learning environments (e.g. Carrell & Menzel, 2001; Witt & Wheeless, 1999). Despite the contributions of these studies, most college instructors are faced with decisions about how to integrate technology in traditional, face-to-face instruction. Thus, it is important for

researchers to examine how the choices instructors make when implementing technology in traditional classrooms affects teacher and student outcomes.

In an effort to facilitate instructors' use of technology, Bailey and Cotlar (1994) began compiling techniques and methodologies used by educational practitioners who were implementing technology into the traditional classroom curriculum. For example, these scholars encouraged the use of technology in the classroom as a means to connect with other students and professors in remote locations. They also promoted the use of electronic office hours and on-line sessions with students.

As the use of technology in the traditional classroom became more prevalent, however, it was important for scholars to examine the effects of technology as a supplemental tool assisting with classroom instruction rather than simply researching it as an alternative method of instruction. Subsequently, Schrodt and Turman (2005; Turman & Schrodt, 2005) examined the different implementation choices instructors have in the traditional classroom. These researchers used four experimental scenarios examining classroom environments when instructors implemented no technology, minimal technology, moderate technology, or complete technology. They found it is important to consider

the actual amount of technology used when examining the effects of technology on teacher outcome variables, as instructors who used minimal to moderate amounts of technology were perceived as being more credible than those who used no technology or complete technology.

Exploring how instructional technology can supplement face-to-face instruction is important for researchers to consider given the growing interest that today's college students may have in different mediated technologies. Specifically, McComb (1994) examined the advantages of using computer mediated communication (CMC) in the college classroom, and she argued that CMC increases instructor availability and enables the instructor to include additional course content otherwise not included in the classroom. Althaus (1997) considered the advantages of CMC and concluded that face-to-face and CMC discussions combined may produce a superior learning environment to that of the traditional classroom. Consistent with Althaus (1997), Schrodt and Turman (2005; Turman & Schrodt, 2005) documented a curvilinear relationship between varying levels of perceived technology use and students' ratings of affect and instructor credibility.

Although researchers have examined primarily instructor outcomes associated with using technology in the classroom,

what remains unanswered from these lines of research is the extent to which using technology invites student participation in the course. In particular, the use of various web resources and other forms of instructional technology may provide additional opportunities for student interaction with fellow classmates, instructors, and ultimately, with course content. As Frymier et al. (1996) noted, an instructor's communicative behaviors should impact students' feelings of empowerment, and thus, research further examining the role that instructional technology use and course design may have on students' initial feelings of empowerment appears warranted.

Learner Empowerment

In an effort to extend our understanding of the teacher-student relationship as one type of supervisor-subordinate relationship, instructional researchers have appropriated organizational constructs in their continued efforts to build instructional communication theory, including such constructs as French and Raven's (1959) typology of relational power, classroom justice (Chory-Assad, 2002), and teacher burnout (Teven, 2007). In a similar vein, the concept of empowerment, which was made popular by Block (1987), originated primarily within the organizational context focusing on the relationship between the manager and the employee. Extending Block's (1987) earlier work, Luechauer and Shulman (1993) conceptualized

empowerment in a way that was applicable to both educational and organizational settings. As such, the concept was extended beyond the manager-employee relationship to include the teacher-student relationship as well. These scholars defined empowerment as “the humanistic process of adopting the values and practicing the behaviors of enlightened self-interest so that personal and organizational goals may be aligned in a way that promotes growth, learning, and fulfillment” (Luechauer & Shulman, 1993, p. 13).

In organizational settings, empowered learners are vital to organizations because people, not organizations, are ultimately responsible for learning the kinds of information necessary for organizational success. Similarly, in instructional settings, one could argue that students are ultimately responsible for their own learning. In many ways, learning is so much more than the mere transmission of information in a classroom, as the transmission of information alone does not necessarily produce long-term learning and retention in students. One way to engage students in the learning process and hopefully increase long-term learning and retention, therefore, is to empower them to expand and extend their knowledge beyond the context of an instructional setting. As such, instructors who empower their students must communicate in a way that creates an environment in which

students will be motivated to succeed. As Frymier et al. (1996) suggested, the role of empowering faculty is to identify and remove factors promoting feelings of student powerlessness, and instead, foster feelings of ownership, self-efficacy, and intrinsic motivation to learn.

In addition, Thomas and Velthouse (1990) noted that empowerment is still a relatively new construct to consider in educational research and thus, further research is needed to examine the potential antecedents and outcomes of learner empowerment. Building on the earlier work of Conger and Kanungo (1988), Thomas and Velthouse (1990) identified empowerment as a process of fostering intrinsic task motivation by providing an environment which energizes individuals and increases their feelings of self-efficacy. They also identified four components of empowerment: impact, competence, meaningfulness, and choice (Thomas & Velthouse, 1990). The first component, *impact*, refers to the degree to which individuals perceive behavior as producing the desired effects for accomplishing a task. *Competence* refers to the ability of individuals to skillfully complete a task. *Meaningfulness* represents the perception of value individuals assign to the task and is dependent on individuals' ideals and standards, and finally, *choice* involves self-determination and

represents the causal responsibility an individual attributes to their own actions.

Extending Thomas and Velthouse's (1990) research, Frymier et al. (1996) succinctly defined empowerment in the instructional setting as a form of intrinsic motivation. These scholars viewed empowerment as an outcome variable that stems from communication, and they believed communication behaviors affect empowerment just as they frequently impact student motivation. Researchers have clearly identified the impact of communication on motivation in the classroom. For instance, teacher nonverbal immediacy cues (Frymier, 1993) and the use of relational power (Richmond, 1990) are associated with student motivation. Thus, one might predict that teacher communication variables may be linked to empowerment as well. As Frymier and her colleagues (1996) proposed, "a communication relationship is necessary to achieve an alignment of values and actions between those acting in an empowering manner and those feeling empowered" (p. 183). In fact, Schrodt et al. (2008) recently reported that learner empowerment varies as a function of an instructor's use of referent, reward, and legitimate forms of power. Consequently, how instructors design their courses and use (or refuse to use) various forms of instructional technology could

potentially influence students' reports of their own empowerment.

As noted above, previous researchers have shown that the perceived use of instructional technology has a curvilinear effect on students' initial affect for the course and the instructor (Turman & Schrodt, 2005). Scholars have also noted that students' positive affect for teacher and course is positively related to students' motivation to learn (Christensen & Menzel, 1998; Christophel, 1990) and their willingness to enroll in further courses in the content area (Gorham & Christophel, 1992; Richmond, 1990). Given that the expected use of instructional technology has a curvilinear effect on students' affect, and that affect is positively associated with motivation and empowerment (Weber & Patterson, 2000), one might hypothesize that students' expectations for the use of instructional technology could also be curvilinearly related to learner empowerment. To test this line of reasoning, the following hypothesis was advanced:

H1: Perceived instructional technology use has a curvilinear effect on learner empowerment, such that instructors described as using minimal to moderate amounts of technology will produce higher ratings of learner empowerment in students than instructors

described as using no technology or complete technology (i.e., a virtual classroom).

Student Involvement

A second, but equally important goal of this investigation was to examine the extent to which instructional technology use influences students' initial intentions to participate and/or be involved in classroom activities. Astin (1984) defined student involvement as the "amount of physical and psychological energy that the student devotes to the academic experience" (p. 297). According to Astin (1984), the quality and quantity of students' involvement, which encompasses both the academic and social realms of the collegiate experience, affects several educational outcomes (e.g., student learning and satisfaction). As Myers, Edwards, Wahl, and Martin (2007) suggested, two primary ways of exploring student involvement are to examine their motives to communicate with instructors and their willingness to participate in and out of class.

From a communication perspective, researchers have primarily focused their research on *interaction* involvement, which includes the extent to which communicators are responsive, perceptive, and attentive in social interaction (Cegala, 1984). *Responsiveness* refers to an individual's ability to mentally react in social situations and respond in

a socially appropriately manner. *Perceptiveness* refers to the ability to assess what meaning to assign to others' behaviors and what meanings others have applied to one's own behavior. Finally, *attentiveness* refers to one's ability to observe cues and be cognizant of the social environment. Cegala (1984) asserted that individuals who are highly involved tend to actively process information, whereas individuals who are less involved often remove themselves psychologically and communicatively from the interaction. Consequently, individuals who are highly involved in social interactions tend to communicate with greater competence (Cegala, 1981).

Building from Cegala's research on interaction involvement, instructional researchers have found student involvement to be positively associated with affective learning, state motivation, and satisfaction (Frymier, 2005; Myers & Bryant, 2002). These researchers have identified a number of pedagogical benefits associated with student involvement, and thus, examining potential antecedents of student involvement is warranted. In fact, Myers et al. (2007) suggested that student involvement is often influenced by perceptions of instructor communicative behaviors. Moreover, Myers and Bryant (2002) concluded that the relationship between interaction involvement and student outcomes is somewhat indicative of the learning environment.

Although the pedagogical strategies and communication behaviors instructors employ in the classroom are potentially associated with student involvement, researchers have yet to examine how the various ways in which instructors use technology to structure and deliver course content could enhance (or inhibit) student participation and involvement. Frymier et al. (1996) suggested that instructors act as managers in the classroom and are responsible for guiding student behavior. To the extent that instructional technology use affords students greater access and opportunities for learning course content, instructors may benefit from research documenting the associations among technology use, course design, and student involvement. Moreover, there is indirect evidence to suggest that the ways in which instructors structure course content and deliver instruction using technology could impact student involvement, as researchers have found that using positive facework when providing student feedback is positively associated with student involvement (Kerssen-Griep, Hess, & Trees, 2003). When coupled with extant research documenting the curvilinear effects of expected technology use on student affect for the course (e.g., Turman & Schrodt, 2005; Witt & Schrodt, 2006), it stands to reason that perceived technology use would produce similar effects on students' involvement and willingness to participate in the

course. To test this line of reasoning, a second hypothesis was advanced:

> H2: Perceived instructional technology use has a curvilinear effect on student involvement, such that instructors described as using minimal to moderate amounts of technology will produce higher ratings of perceived involvement in students than instructors described as using no technology or complete technology (i.e., a virtual classroom).

Nonverbal Immediacy as a Moderator of Technology Use

Although it was hypothesized in the present study that the curvilinear effects of technology use would replicate for student outcomes of empowerment and involvement, previous researchers have demonstrated that such curvilinear trends are moderated by an instructor's nonverbal immediacy cues (e.g., Schrodt & Witt, 2006; Witt & Schrodt, 2006). Albert Mehrabian (1969) was the first to introduce the construct of immediacy, identifying it as a set of communicative behaviors that enhance the perception of physical or psychological closeness between communicators. As a construct, nonverbal immediacy is grounded in approach-avoidance theory, which suggests that "People are drawn toward persons and things they like, evaluate highly, and prefer; and they avoid or move away from things they dislike, evaluate negatively, or do not prefer"

(Mehrabian, 1971, p. 1). Building from this theory, Mehrabian identified nonverbal and verbal communication behaviors that reduce perceived physical or psychological distance between communicators (Mehrabian, 1969, 1971; Wiener & Mehrabian, 1968). In the instructional context, teachers use nonverbal immediacy to reduce the physical and psychological distance between themselves and their students by communicating at close distances, engaging in eye contact, smiling, maintaining a relaxed body posture, and making use of gestures.

In general, then, scholars have documented the potential benefits of teacher nonverbal immediacy to the instructional environment, though more often than not, the effects are indirect rather than direct (Witt, Wheeless, & Allen, 2004). Moreover, in their investigations of perceived technology use, Schrodt and Witt (2006; Witt & Schrodt, 2006) found that nonverbal immediacy cues moderated the curvilinear effects of technology use on student affect and instructor credibility. Given that student affect is correlated with motivation (e.g., Christophel, 1990; Gorham & Christophel, 1992), and that intrinsic motivation is inherently tied to students' feelings of empowerment (Frymier et al., 1996), one might hypothesize similar moderating effects for perceived technology use and student outcomes of empowerment and involvement. To further

test this line of reasoning, the next set of hypotheses were advanced:

H3: Levels of expected instructional technology use will interact with levels of teacher nonverbal immediacy to influence students' ratings of learner empowerment.

H4: Levels of expected instructional technology use will interact with levels of teacher nonverbal immediacy to influence students' initial reports of involvement.

Is Empowerment the Key to Enhancing Student Involvement?

Based on extant research, it is clear that implementing technology as an instructional communication tool has important pedagogical implications in the college classroom. For example, researchers have shown the advantages of using computer-mediated communication to supplement face-to-face interaction in the classroom (Althaus, 1997; McComb, 1994). In addition, researchers have also shown that the differential use of technology in traditional, face-to-face classrooms influences such outcomes as students' perceptions of instructor credibility (Schrodt & Turman, 2005; Schrodt & Witt, 2006) and affect for the course (Turman & Schrodt, 2005; Witt & Schrodt, 2006).

If empowerment is conceptualized as a motivation-based construct that stems from an instructor's communication behaviors (Frymier et al., 1996), then one might hypothesize that students who feel empowered to learn would, in turn, be more involved in learning course content and in participating in class activities and discussion. Indeed, student motivation and involvement are two distinct, yet related concepts, and as Benigni, Lariscy, and Tinkham (2002) so aptly concluded, "motivation often predicates involvement" (p.9). Other scholars have also indirectly identified connections between empowerment, as a motivation-based construct, and involvement. For example, Frymier and Houser (1999) noted that empowered students tend to find course content as being important in their lives. Likewise, while interpreting the findings from their own research, Myers and Bryant (2002) suggested that students' interaction involvement should be associated with their own empowerment in the classroom. Instructional researchers often explore constructs such as empowerment and involvement in isolation of each other, yet in reality, students' reports of these feelings and behaviors are likely to co-exist within the same interaction. Consequently, the final purpose of this investigation was test learner empowerment as a potential mediator of perceived technology use, nonverbal immediacy, and student involvement. To explore

this possibility, the following research question was advanced:

RQ: How, if at all, does learner empowerment mediate the influence of perceived instructional technology use and nonverbal immediacy cues on student involvement?

Method

Experimental Design

In a 4 x 2 factorial design, 264 undergraduate students were randomly exposed to one of 8 different scenarios. The degree to which instructional technology is used in the course was manipulated across four conditions (no use, minimal use, moderate use, or complete use of technology) and across two levels of nonverbal immediacy cues (high vs. low) (See Appendix A). After reading the assigned scenario, students then completed modified measures of learner empowerment and involvement for the course described in each scenario.

Participants and Procedures

Participants included 264 students enrolled in a basic communication studies course at a medium-sized, private university in the southwest. Upon securing human subjects approval, student volunteers were randomly assigned to one of the eight hypothetical scenarios. After reading the scenario, participants completed a questionnaire assessing various student outcomes, after which students were thanked for their

participation and debriefed. All participation took place outside of regular class time, and students received minimal course credit for participation in the research.

Experimental Manipulations

Instructional technology use. The use of instructional technology was manipulated across four levels using Schrodt and Turman's (2005) hypothetical scenarios. Each scenario depicted the first day of a hypothetical class, during which the classroom instructor explained the instructional methods that would be used to deliver course content. In the *no technology* condition, all communication between the instructor and students was accomplished through traditional face-to-face methods of instruction (i.e., in-class lectures and testing, no e-mail, no PowerPoint, no on-line communication). In the *minimal technology* condition, the instructor incorporated a limited number of overheads and video clips during class, checked e-mail once a day, but used no PowerPoint or online testing. In the *moderate technology* condition, the instructor used PowerPoint, video clips, and Web resources during class, required students to turn in assignments by e-mail attachment, and made use of an on-line chat room, virtual office hours, and frequent use of e-mail. Finally, in the *complete technology* condition, the instructor announced that the first day of class would be the only face-to-face meeting and that

the remainder of the course would be delivered over the Web. All assignments were to be turned in via email attachments, and all exams would occur online. In addition, the instructor would make use of an on-line chat room, virtual office hours, and frequent use of e-mail.

Although these scenarios have been validated and used successfully in previous research (Schrodt & Turman, 2005; Turman & Schrodt, 2005; Schrodt and Witt, 2006; Witt & Schrodt, 2006), in this study, the scenarios were modified so as to account for potential confounds associated with some of the language used in the original scenarios. For example, in the original, *no technology* condition, students were described as "being required" to actively listen to the class lectures as a result of the instructor's choice not to use PowerPoint. This statement was removed because it was negatively valenced and may have implied that students must, in a sense, work harder because of the lack of technology used in the course. Likewise, in the original, *minimal technology* condition, the instructor was described as checking his university email account at least once a day, and that students should "feel free" to correspond in this manner. Using language such as "feel free," however, may have implicitly created a potential halo effect and inflated the positive perception of the instructor overall. Therefore, to address concerns about the

language used in the original scenarios, modifications were made to correct for any language that could potentially bias students' perceptions, and manipulation checks were performed to assess the validity of the revised scenarios. Fifty-four undergraduate students were randomly assigned to one of eight scenarios depicting a level of technology use combined with high or low immediacy. Using a checklist of all the technologies found in the scenarios (ranging from 0 to 12 types of technology), students were asked to recall the specific technologies presented in the scenario they read. A one-way analysis of variance (ANOVA) supported the validity of the conditions depicted in the scenarios, $F(3, 53) = 75.55$, $p < .001$. Planned cell comparisons revealed significant differences in the amount of technology used in each of the four scenarios, increasing successively from *no technology* ($M = 1.21$, $SD = 2.61$) to *minimal* ($M = 3.43$, $SD = 1.40$), *moderate* ($M = 8.33$, $SD = 1.45$), and *complete technology use* ($M = 10.45$, $SD = 1.13$).

Teacher nonverbal immediacy cues. Students' perceptions of teacher nonverbal immediacy cues were measured by adapting two scenarios originally developed by Thweatt and McCroskey (1996). In a recent report using these scenarios, Schrodt and Witt (2006) noted that some aspects of the nonverbal immediacy descriptions may not have measured actual immediacy behaviors

per se, “but rather *inferences* about potential behaviors from an approachable instructor” (p. 18). Thus, in an effort to further correct these limitations, modifications were made to the original scenarios so as to focus participants’ attention on describable behaviors (e.g., “maintains eye contact, moves around the room,” etc.) rather than on inferential descriptions of approachable instructors (e.g., “seems friendly”). Specifically, in this report, the instructor in the *high immediacy* condition was described as engaging in frequent eye contact, walking around the room while introducing the course, using vocal variety and gestures, smiling frequently, and presenting himself in a relaxed and enthusiastic manner. The teacher in the *low immediacy* condition, however, was described as looking at the board and standing behind the podium while introducing the course, speaking in a monotone voice without gestures, lacking facial expressions, and presenting himself in a tense and unenthusiastic manner.

Again, although the original scenarios have been validated and used successfully in previous research (Thweatt & McCroskey, 1996, 1998; Schrodt & Witt, 2006; Witt and Schrodt, 2006), manipulation checks were performed to assess the effectiveness and validity of the modified scenarios. Using the same sample described above, as well as a checklist

of all immediacy behaviors found in the modified scenarios, students were asked to recall the specific immediacy cues present in the scenario they read. An independent samples t-test was conducted to assess the validity of the nonverbal immediacy conditions depicted in the scenarios, $t(52) = 24.60$, $p < .001$. Students reported a significantly greater number of immediacy cues in the high immediacy condition ($M = 6.96$, $SD = .20$) than in the low immediacy condition ($M = .32$, $SD = 1.36$).

Measures

Learner empowerment. Students' perceptions of learner empowerment were measured using a modified version of Frymier et al.'s (1996) Learner Empowerment Scale (LES) (See Appendix B). The original scale consists of 35 items measuring three dimensions of empowerment, including impact, meaningfulness, and competence. For this study, the 35-item version of the LES was modified and used to assess students' perceived feelings of empowerment in the hypothetical course for which they were randomly assigned. Items in the original scale were adapted to refer to the interaction in the specific hypothetical course being described. For example, an impact item such as "I have the power to make a difference in how things are done in this class" was modified to read "I think I would have the power to make a difference in how things are done in this class." Responses were solicited using a 7-point, Likert scale ranging

from (1) *Strongly disagree* to (7) *Strongly agree*. Higher scores reflected greater feelings of empowerment, and an alpha reliability of .95 (M = 4.28, SD = .96) was obtained for the revised measure.

Student involvement. Students' perceptions of classroom involvement were operationalized using a modified version of Cegala's (1981) Interaction Involvement Scale (IIS) (See Appendix C). The original scale is an 18-item measure using 7-point, Likert-type responses ranging (1) *Not at all like me* to (7) *Very much like me*. The original IIS assesses the degree to which people are engaged, both cognitively and behaviorally, in conversations with others across three dimensions, including perceptiveness, attentiveness, and responsiveness. In this study, two modifications were made to the original IIS. First, a revised 12-item version assessing students' perceived attentiveness and responsiveness was used to measure students' perceived involvement in the hypothetical course. For example, an attentiveness item from the IIS that reads "My mind wanders during conversations and I often miss parts of what is going on," was changed to read "My mind would wander during this class and I would often miss parts of what is going on." Second, responses were solicited using a 7-point scale that ranged from (1) *Strongly disagree* to (7) *Strongly agree*. Again, higher scores reflected greater perceived

involvement in the hypothetical course. After conducting an initial analysis of internal reliability on the revised 12-item measure, two items were deleted to increase the internal reliability of the scale. The modified, 10-item measure of perceived involvement produced an acceptable alpha reliability coefficient of .88 (M = 4.10, SD = 1.09).

Data Analysis

The first four hypotheses were tested using two separate, factorial analyses of variance (ANOVAs). Specifically, two 4 x 2 factorial ANOVAs were obtained to examine the combined and unique influences of perceived instructional technology use ("no use" x "minimal use" x "moderate use" x "complete use") and nonverbal immediacy (high vs. low) on students' ratings of learner empowerment and involvement. The research question was addressed using a 4 x 2 factorial analysis of covariance (ANCOVA), using perceived technology use and nonverbal immediacy as the predictor variables, empowerment as the covariate, and involvement as the criterion variable. For significant effects, planned cell comparisons were conducted using LSD follow-ups.

Results

The first and third hypotheses predicted that the differential impact of technology use would have a curvilinear effect on students' initial reports of learner empowerment and

that the curvilinear effect would change as a function of teacher nonverbal immediacy cues. The results of the first factorial ANOVA produced a statistically non-significant interaction effect between technology use and nonverbal immediacy, $F(3, 256) = .01$, $MSE = .725$, $p > .05$. The main effect for perceived technology use was also non-significant, $F(3, 256) = 1.35$, $p > .05$. There was, however, a statistically significant main effect for nonverbal immediacy cues, $F(1, 256) = 72.68$, $\eta^2 = .18$, $p < .001$. Specifically, students reported significantly higher levels of learner empowerment for scenarios depicting an immediate teacher ($M = 4.73$, $SD = .81$) than for scenarios depicting a non-immediate teacher ($M = 3.83$, $SD = .88$). Taken together, these results provide no support for the first and third hypotheses.

The second and fourth hypotheses predicted that the differential impact of technology use would have a curvilinear effect on students' initial reports of involvement, one that would change as a function of teacher nonverbal immediacy cues. Again, the results of the second factorial ANOVA produced a statistically non-significant interaction effect between perceived technology use and nonverbal immediacy cues, $F(3, 256) = 1.94$, $MSE = .971$, $p > .05$. The main effect for perceived technology use was also non-significant, $F(3, 256) = 2.01$, $p > .05$. Consistent with the analysis for learner

empowerment, however, a statistically significant main effect for immediacy emerged, $F(1, 256) = 55.12$, $\eta^2 = .15$, $p < .001$. Again, students reported significantly higher levels of involvement for scenarios depicting an immediate teacher ($M = 4.55$, $SD = 1.03$) than for scenarios depicting a non-immediate teacher ($M = 3.65$, $SD = .96$). Similar to the findings for learner empowerment, these results also provide no support for the second and fourth hypotheses.

The research question explored the extent to which learner empowerment mediated the influence of perceived instructional technology use and nonverbal immediacy cues on student involvement. The results of the factorial ANCOVA, using perceived technology use and nonverbal immediacy cues as the predictor variables and empowerment as the covariate, revealed a significant main effect for the covariate, $F(1, 255) = 255.56$, $MSE = .487$, $\eta^2 = .28$, $p < .001$. According to Baron and Kenny (1986), in order for mediation to occur, the association between nonverbal immediacy and student involvement should be reduced after controlling for the relationship between learner empowerment and student involvement. To be considered full mediation, this association should be reduced to nearly zero (Baron & Kenny, 1986). Following these guidelines, the results revealed a statistically non-significant main effect for nonverbal

immediacy on student involvement after controlling for the effect of learner empowerment, $F(1, 255) = 3.01$, $p > .05$. Thus, in response to the research question, learner empowerment emerged as a full mediator of the association between nonverbal immediacy cues and student involvement.

Contrary to the results of the factorial ANOVA for student involvement (i.e., H2 and H4), the results of the factorial ANCOVA produced a significant two-way interaction effect of perceived technology use and nonverbal immediacy cues on student involvement after controlling for the effect of learner empowerment, $F(3, 255) = 3.79$, $p < .05$, $\eta^2 = .02$. Post hoc cell comparisons using LSD follow-ups revealed a pattern of moderated mediation whereby the mediation effect of learner empowerment for nonverbal immediacy and student involvement changed as a function of perceived technology use. As noted in Table 1 and depicted in Figure 1, the extent to which learner empowerment mediated the influence of nonverbal immediacy cues on student involvement depended on the type of technology used by the instructor.

Table 1

Cell Means for Student Involvement after Controlling for Learner Empowerment (N = 264)

Immediacy	Perceived Technology Use			
	None	Minimal	Moderate	Complete
High	4.49_{ab} (.78)	4.87_{ac} (1.06)	4.70_{d} (1.20)	4.12_{bcd} (.93)
Low	3.81 (.91)	3.64 (.72)	3.55 (1.12)	3.58 (1.06)

Note. Means in rows with the same subscripts are significantly different at $p < .05$. Standard deviations are in parentheses.

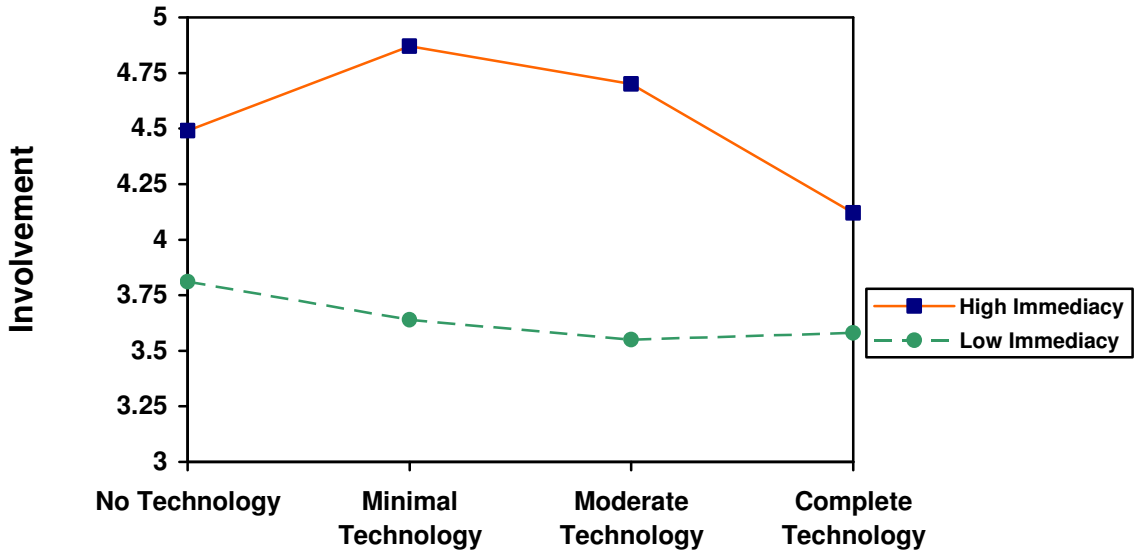

Figure 1. Technology x nonverbal immediacy interaction effect for student involvement after controlling for learner empowerment.

After controlling for learner empowerment, instructors described as being highly immediate and as using minimal to moderate amounts of technology produced higher levels of student involvement than immediate instructors described as using no technology at all or complete technology. The immediate instructor described as using no technology at all, however, produced higher levels of student involvement than the instructor described as using complete technology. Thus, the pattern of moderated mediation for nonverbal immediacy cues, empowerment, and student involvement varied as a function of perceived technology use and mirrored the curvilinear patterns for technology use and course design reported in previous research.

Discussion

The principal goals of this study were to test the extent to which perceived nonverbal immediacy and expected instructional technology use predicted students' perceptions of learner empowerment and student involvement, and to test empowerment as a potential mediator of perceived technology use and nonverbal immediacy on involvement. Overall, the results suggest that students' initial perceptions of learner empowerment and involvement vary independently of the types of technology an instructor uses in the design of a course, though such perceptions do vary somewhat as a function of an

instructor's use of nonverbal immediacy cues. In other words, the amount of technology an instructor intends on using in the design of a course may have little to no effect on students' initial reports of empowerment and involvement, even though the use of nonverbal immediacy while describing a course enhances feelings of empowerment, and ultimately, potential involvement in the course. The results also suggest that learner empowerment fully mediates the association between nonverbal immediacy cues and student involvement. In fact, a pattern of moderated mediation emerged whereby the mediation effect of learner empowerment for nonverbal immediacy and student involvement changed as a function of perceived technology use. Consequently, this study not only clarifies our understanding of some of the outcomes impacted by the use of instructional technology in course design, but it further delineates the process by which instructor behaviors empower students to become more involved in the college classroom.

The first hypothesis predicted that perceived instructional technology use would have a curvilinear effect on learner empowerment, while the third hypothesis predicted that this effect would change as a function of nonverbal immediacy cues. Contrary to what was hypothesized, however, perceived technology use failed to predict significant variance in students' initial reports of learner empowerment

for the course described in the scenarios. Rather, the results suggest that students' perceptions of empowerment varied only as a function of an instructor's nonverbal immediacy cues. Previous researchers examining the effects of technology use and nonverbal immediacy have focused primarily on *instructor* and *course* outcomes, such as credibility and student affect (Schrodt & Turman, 2005; Schrodt & Witt, 2006; Turman & Schrodt, 2005; Witt & Schrodt, 2006). Although these researchers documented curvilinear effects of technology use on instructor outcomes, the present study failed to replicate this pattern for *student* outcomes of empowerment and involvement.

One possible explanation for these findings may be that the dependent variable of interest was more of a student-owned construct than an instructor-owned construct. That is, learner empowerment consists of a student's sense of competence in completing course material, as well as a student's overall assessment of the meaningfulness and impact of learning course content. Given that the use of hypothetical scenarios in this study prevented the students from gathering any information relevant to the course content itself, the failure to replicate the curvilinear effects of technology use on empowerment may simply represent a limitation of the research design. Whereas Witt and Schrodt (2006) demonstrated that

perceived technology use and nonverbal immediacy impacts student affect, Schrodt et al. (2008) argued that “learner empowerment is much more than the internalization of positive attitudes . . . as it includes a cognitive belief state of personal involvement and self-efficacy that ultimately results in a heightened sense of personal effectiveness among students” (p. 184). Thus, longitudinal research that tracks the use of instructional technology at different points in the semester and its association with learner empowerment is needed before more definitive conclusions can be drawn about the non-significant findings in this report.

Consistent with the predictions for learner empowerment, the second and fourth hypotheses predicted that perceived technology use would have a curvilinear effect on student involvement, and that this curvilinear effect would change as a function of nonverbal immediacy cues. Similar to the findings for empowerment, the results suggest that students’ perceptions of classroom involvement vary primarily as a function of an instructor’s use of nonverbal immediacy cues; however, perceived technology use did not predict students’ initial reports of classroom involvement. Thus, the pattern for student involvement mirrored the pattern found for learner empowerment.

Although it was predicted that the differential use of technology might impact how involved students become because different forms of technology allow greater or lesser access to course content and materials, and potentially provide different opportunities for classroom interaction, the results failed to confirm this line of reasoning as instructor nonverbal immediacy cues emerged as the only significant predictor of involvement. Again, one possible explanation for the identical patterns found for both learner empowerment and student involvement is that both constructs are inherently relational constructs. Thus, both constructs may be more likely to change as a function of an instructor's relational behaviors (e.g., immediacy, confirmation, power) than as a function of an instructor's task behaviors (e.g., using technology to deliver course content). This, in turn, could help explain why both learner empowerment and involvement varied as a result of immediacy cues independent of the amount of technology used in each scenario. Of course, it could also be that the use of hypothetical scenarios provided only a brief introduction to the type of course students would be taking, and that constructs such as empowerment and involvement are more likely to vary as a function of *actual* classroom interactions over time.

Finally, the research question asked to what extent, if at all, learner empowerment mediated the influence of perceived instructional technology use and nonverbal immediacy cues on student involvement. Contrary to the results for the four hypotheses, this line of inquiry was supported, as learner empowerment emerged as a full mediator between immediacy and involvement. When instructors use a variety of nonverbal immediacy cues, such as maintaining eye contact, smiling frequently, and using appropriate nonverbal gestures, students are more likely to feel empowered to learn course content. This pattern corresponds with the intrinsic motivation identified as part of the larger construct of learner empowerment (Thomas & Velthouse, 1990). Such feelings of empowerment, in turn, increase student involvement in the classroom. Historically, instructional scholars have explored a variety of factors thought to enhance student involvement in the classroom (Kerssen-Griep et al, 2003; Myers et al., 2007), and consistent with previous research, the results of this study add to our understanding of student involvement by identifying learner empowerment as a key construct that facilitates the association between an instructor's nonverbal immediacy cues and students' potential involvement in the course.

Not only did learner empowerment fully mediate the influence of nonverbal immediacy on student involvement, but intriguingly, this mediation effect is moderated by the differential use of instructional technology in course design. Given the statistically non-significant interaction effect reported for perceived technology use and immediacy on involvement (i.e., H4), this finding is of particular interest. Consistent with Benigni et al.'s (2002) claim that "motivation often predicates involvement" (p. 9), the results of this study suggest that empowerment may operate as a key antecedent to student involvement and that the empowerment-involvement process may vary as a function of both the instructor's immediacy cues and use of technology. Although empowerment is owned internally by the student, once a student feels empowered to learn course content and sees the potential impact and meaningfulness that the content may have in their lives, such feelings may become one of the primary mechanisms through which other teacher communication behaviors (e.g., immediacy, technology use) ultimately enhance student involvement and participation in the course.

In their program of research on technology use and nonverbal immediacy, Schrodt and his colleagues (Schrodt & Turman, 2005; Schrodt & Witt, 2006; Turman & Schrodt, 2005; Witt & Schrodt, 2006) found that the perceived use of

instructional technology and nonverbal immediacy cues in traditional college classrooms was most likely to produce the highest ratings of instructor credibility and student affect when instructors employed minimal to moderate amounts of technology in the classroom. Consistent with their research, the pattern of moderated mediation for empowerment found in this report is most likely to occur when highly immediate teachers use minimal to moderate amounts of technology in the classroom. In fact, two different trends in this mediation effect emerged for the highly immediate and non-immediate instructor (see Figure 1). For the highly immediate instructor described in the scenarios, using minimal to moderate amounts of technology yielded the highest ratings of student involvement, confirming the curvilinear, "diminishing returns" trend previously reported by Witt and Schrodt (2006). For the non-immediate instructor, however, no significant differences in student involvement emerged among the four conditions of perceived technology use, though a general inspection of Figure 1 reveals a slightly inverted, curvilinear trend in the means for student involvement.

One possible explanation for the differences in moderated mediation may be that students carry different expectations for immediate and non-immediate instructors. For example, students may expect highly immediate instructors to design

courses in such a way so as to maintain the greatest opportunities for personal interaction which, in terms of technology use, would necessitate using no more technology than what is called for to achieve instructional objectives. On the other hand, students may report lower levels of involvement for non-immediate instructors who attempt to use some forms of technology, in part, because increased opportunities to engage the instructor and the course are less desirable when the instructor engages in behaviors thought to *increase* psychological distance. Both explanations, of course, are dependent upon the extent to which students feel empowered to learn in a given course.

Overall, then, the results of this study offer a number of theoretical and pedagogical implications. Theoretically, this study tested the associations between two of the six essential components comprising McCroskey et al.'s (2004) general model of instructional communication. Specifically, it extends our understanding of the types of outcomes that could potentially vary as a result of how an instructor incorporates technology into the design of a course. To the extent that an introductory discussion of how instructional technology will be used in a given course is accompanied by the use of nonverbal immediacy behaviors, the introduction of technology itself has very little impact on students' initial reports of

empowerment and involvement in the course. Rather, the results of this study clearly highlight the role of nonverbal immediacy and learner empowerment in facilitating increased levels of student involvement. Although some researchers have touted the advantages of using computer mediated communication to enhance the student experience (McComb, 1994), the results of this study point more so to the types of relational behaviors instructors enact than to the different types of technology used to facilitate classroom learning. Clearly, future investigations are needed to more carefully examine the unique and combined influence of technology use and instructor communication behaviors on student outcomes in the college classroom.

In terms of pedagogical implications, Witmer (1998) argued that instructional technology can be used to enhance pedagogy. Yet, the results of this study suggest that instructional objectives related to student outcomes, such as enhancing learner empowerment and increasing classroom involvement, may be less influenced by the technological design choices of the instructor than by the actual relational behaviors that encourage personal interaction and invite classroom participation. Therefore, instructors who want to enhance student involvement should perhaps focus less on the specific technological choices available to them, and instead,

employ more communication strategies that empower students to learn and create in them a heightened sense of personal effectiveness. Such efforts, in turn, may enhance student involvement in the course.

Despite the contributions of this study, the results should be interpreted within the limitations of the research design. Although hypothetical scenarios have been used successfully in previous investigations of instructional technology (e.g., Schrodt & Turman, 2005; Schrodt & Witt, 2006; Turman & Schrodt, 2005; Witt & Schrodt, 2006), there are obvious limitations associated with using such a design. For example, the findings merely speak to students' initial perceptions of empowerment and involvement and do not account for the various ways in which these variables could change over the course of the semester. However, the use of hypothetical scenarios for this study was deemed appropriate based on the practical and methodological challenges associated with manipulating the use of different forms of technology in actual communication courses. Sample characteristics may also represent a limitation to the results given that the majority of participants were white and from a medium-sized, private institution.

Future researchers might address these limitations and extend this study by examining specific communication

behaviors that foster students' feelings of empowerment and impact their involvement in a course over time. Researchers may find, for example, that an instructor's use of relational power (Schrodt et al., 2008), confirming messages (Turman & Schrodt, 2006), and principles of equity and fairness (Chory-Assad, 2002; Chory-Assad & Paulsel, 2004) are more closely associated with learner empowerment and student involvement than the actual use of technology per se, though again, such speculation awaits empirical investigation in longitudinal research. Researchers might also consider how an instructor's use of technology is interpreted by students through a socially constructed lens, one that is culturally bound and likely to vary as a function of student ethnicity. Indeed, we know very little about cultural and ethnic variations in the use of, and interpretation of, instructional technology. By examining these types of issues, researchers and educators may further our understanding of how instructors empower their students to learn, and thus, enhance classroom involvement.

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Appendix A: Hypothetical Scenarios

Scenario 1 – High Immediacy, No Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the syllabus, the instructor informs you that the content and material for the course will be covered through the use of traditional lectures and classroom discussions. During class, the instructor relies on traditional note-taking rather than using PowerPoint for his lectures. All written assignments will be turned in during class, and exams will be given in class. Finally, the instructor indicates that he does not use his university e-mail account, and that all correspondence with students should take place either during class or during posted office hours. You notice that the instructor seems very relaxed, walks around the room, and uses gestures. Moreover, he engages in frequent eye contact, uses vocal variety, smiles frequently, and is enthusiastic.

Scenario 2 – High Immediacy, Minimal Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the syllabus, the instructor informs you that the content and material for the course will be covered through the use of traditional lectures and classroom discussions. During class, the instructor uses a limited number of overheads and occasional video clips to address course content. All written assignments will be turned in during class, and exams will be given in class. Finally, the instructor indicates that he checks his university e-mail account at least once a day so correspondence can take place through e-mail, during class, or during posted office hours. You notice that the instructor seems very relaxed, walks around the room, and uses gestures. Moreover, he engages in frequent eye contact, uses vocal variety, smiles frequently, and is enthusiastic.

Scenario 3 – High Immediacy, Moderate Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the syllabus, the instructor informs you that the content and material for the course will be covered through the use of PowerPoint presentations, video clips, and various web resources. The instructor indicates that a course chat room has also been created for students to use. All written

Appendix A (cont.)

assignments will be posted on the web and turned in via an e-mail attachment, and exams will be given in class. Finally, the instructor indicates that he checks his university e-mail account on an hourly basis, and that he uses it to hold two virtual office hours each week in addition to his traditional office hours. You notice that the instructor seems very relaxed, walks around the room, and uses gestures. Moreover, he engages in frequent eye contact, uses vocal variety, smiles frequently, and is enthusiastic.

Scenario 4 – High Immediacy, Complete Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the syllabus, the instructor informs you that this will be the only class period in which you will formally meet as a class. The content and material for the course will be covered via the web through the use of chat rooms, recorded video lectures, and on-line handouts. The instructor provides you with the address to the course web-page where you can download the course readings and take part in on-line discussions at designated times. All written assignments will be posted on the web and turned in via an e-mail attachment. All exams will be administered on-line as well. Finally, the instructor indicates that he checks his university e-mail account on an hourly basis, and that he holds virtual office hours rather than traditional office hours. You notice that the instructor seems very relaxed, walks around the room, and uses gestures. Moreover, he engages in frequent eye contact, uses vocal variety, smiles frequently, and is enthusiastic.

Scenario 5 – Low Immediacy, No Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the syllabus, the instructor informs you that the content and material for the course will be covered through the use of traditional lectures and classroom discussions. During class, the instructor relies on traditional note-taking rather than using PowerPoint for his lectures. All written assignments will be turned in during class, and exams will be given in class. Finally, the instructor indicates that he does not use his university e-mail account, and that all correspondence with students should take place either during class or during posted office hours. You notice that the instructor seems very

Appendix A (cont.)

tense, stands behind the podium, and doesn't gesture. Moreover, he looks at the board when lecturing, is monotone, lacks facial expressions, and is unenthusiastic.

Scenario 6 – Low Immediacy, Minimal Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the syllabus, the instructor informs you that the content and material for the course will be covered through the use of traditional lectures and classroom discussions. During class, the instructor uses a limited number of overheads and occasional video clips to address course content. All written assignments will be turned in during class, and exams will be given in class. Finally, the instructor indicates that he checks his university e-mail account at least once a day so correspondence can take place through e-mail, during class, or during posted office hours. You notice that the instructor seems very tense, stands behind the podium, and doesn't gesture. Moreover, he looks at the board when lecturing, is monotone, lacks facial expressions, and is unenthusiastic.

Scenario 7 – Low Immediacy, Moderate Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the syllabus, the instructor informs you that the content and material for the course will be covered through the use of PowerPoint presentations, video clips, and various web resources. The instructor indicates that a course chat room has also been created for students to use. All written assignments will be posted on the web and turned in via an e-mail attachment, and exams will be given in class. Finally, the instructor indicates that he checks his university e-mail account on an hourly basis, and that he uses it to hold two virtual office hours each week in addition to his traditional office hours. You notice that the instructor seems very tense, stands behind the podium, and doesn't gesture. Moreover, he looks at the board when lecturing, is monotone, lacks facial expressions, and is unenthusiastic.

Scenario 8 – Low Immediacy, Complete Technology

You are taking a large lecture, multiple-section communication course. On the first day of class, while covering the

Appendix A (cont.)

syllabus, the instructor informs you that this will be the only class period in which you will formally meet as a class. The content and material for the course will be covered via the web through the use of chat rooms, recorded video lectures, and on-line handouts. The instructor provides you with the address to the course web-page where you can download the course readings and take part in on-line discussions at designated times. All written assignments will be posted on the web and turned in via an e-mail attachment. All exams will be administered on-line as well. Finally, the instructor indicates that he checks his university e-mail account on an hourly basis, and that he holds virtual office hours rather than traditional office hours. You notice that the instructor seems very tense, stands behind the podium, and doesn't gesture. Moreover, he looks at the board when lecturing, is monotone, lacks facial expressions, and is unenthusiastic.

Appendix B: Modified Learner Empowerment Scale

Instructions: Please indicate the extent to which you agree or disagree with the following set of statements **while thinking about the course described above.** Please circle only one response for each item.

Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

		SD			U			SA
1.	I think I would have the power to make a difference in how things are done in this class.	1	2	3	4	5	6	7
2.	I would have a choice in the methods I can use to perform my work.	1	2	3	4	5	6	7
3.	My participation would be important to the success of this class.	1	2	3	4	5	6	7
4.	I would have freedom to choose among options in this class.	1	2	3	4	5	6	7
5.	I think I could make an impact on the way things are run in this class.	1	2	3	4	5	6	7
6.	I think alternative approaches to learning would be encouraged in this class.	1	2	3	4	5	6	7
7.	I think I would have the opportunity to contribute to the learning of others in this class.	1	2	3	4	5	6	7
8.	I think I would have the opportunity to make important decisions in this class.	1	2	3	4	5	6	7
9.	I do not think I could influence what happens in this class.	1	2	3	4	5	6	7
10.	I think I would have the power to create a supportive learning environment in this class.	1	2	3	4	5	6	7
11.	My contribution to this class would make no difference.	1	2	3	4	5	6	7
12.	I think I could determine how tasks could be performed.	1	2	3	4	5	6	7
13.	I think I could make a difference in the learning that goes on in this class.	1	2	3	4	5	6	7
14.	I would have no freedom to choose in this class.	1	2	3	4	5	6	7

Appendix B (cont.)

		SD			U			SA
15.	I think I could influence the instructor.	1	2	3	4	5	6	7
16.	I think I would feel appreciated in this class.	1	2	3	4	5	6	7
17.	The tasks required of me in this class would be personally meaningful.	1	2	3	4	5	6	7
18.	I would look forward to going to this class.	1	2	3	4	5	6	7
19.	This class would be exciting.	1	2	3	4	5	6	7
20.	This class would be boring.	1	2	3	4	5	6	7
21.	This class would be interesting.	1	2	3	4	5	6	7
22.	The tasks required of me in this class would be valuable to me.	1	2	3	4	5	6	7
23.	The information in this class would be useful.	1	2	3	4	5	6	7
24.	This course would help me achieve my future goals.	1	2	3	4	5	6	7
25.	The tasks required in this course would be a waste of my time.	1	2	3	4	5	6	7
26.	This class would not be important to me.	1	2	3	4	5	6	7
27.	I would feel confident that I can adequately perform my duties.	1	2	3	4	5	6	7
28.	I would feel intimidated by what is required of me in this class.	1	2	3	4	5	6	7
29.	I possess the necessary skills to perform successfully in class.	1	2	3	4	5	6	7
30.	I would feel unable to do the work in this class.	1	2	3	4	5	6	7
31.	I believe that I would be capable of achieving my goals in this class.	1	2	3	4	5	6	7
32.	I would have faith in my ability to do well in this class.	1	2	3	4	5	6	7
33.	I would have the qualifications to succeed in this class.	1	2	3	4	5	6	7
34.	I would lack confidence in my ability to perform the tasks in this class.	1	2	3	4	5	6	7
35.	I would feel very competent in this class.	1	2	3	4	5	6	7

Appendix C: Modified Involvement Scale

Instructions: Please indicate the extent to which you agree or disagree with the following set of statements **while thinking about the course described above**. Please circle only one response for each item.

Strongly Disagree	Disagree	Somewhat Disagree	Undecided	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

		SD			U			SA
1.	My mind would wander during this class and I would often miss parts of what is going on.	1	2	3	4	5	6	7
2.	In this class I would not be sure what to say or how I might contribute.	1	2	3	4	5	6	7
3.	During this class I would listen carefully and obtain as much information as I could.	1	2	3	4	5	6	7
4.	In this class I would not be sure what my role was, I would not be sure what would be expected of me.	1	2	3	4	5	6	7
5.	In this class I would pretend to be listening, when in fact I would be thinking of something else.	1	2	3	4	5	6	7
6.	During this class I would feel like I know what should be said, but I would hesitate to do so.	1	2	3	4	5	6	7
7.	I would carefully observe how others are responding to me during this class.	1	2	3	4	5	6	7
8.	I would feel withdrawn or distant during this class.	1	2	3	4	5	6	7
9.	I would feel confident during this class, I would be sure of what to say and do.	1	2	3	4	5	6	7
10.	I would be preoccupied in this class and would not pay complete attention.	1	2	3	4	5	6	7
11.	I would feel sort of “unplugged” during this class, I would be uncertain of my role and what is happening.	1	2	3	4	5	6	7
12.	During this class I would not be able to think of what to say, I would not react quickly enough.	1	2	3	4	5	6	7

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Publications

Finn, A. N., Glonek, K. L., & Jernberg, K. A. (2008). *Basic speech communication workbook.* Belmont, CA: Thomson.

Schrodt, P., Witt, P. L., Myers, S. A., Turman, P. D., Barton, M. H., & Jernberg, K. A. (2008). Learner empowerment and teacher evaluations as functions of teacher power use in the college classroom. *Communication Education, 57,* 180-200.

Manuscripts Under Review

Schrodt, P., Jernberg, K. A., Larson, L., Elledge, N., Glonek, K., & Ledbetter, A. *Family communication patterns as mediators of communication competence in the parent-child relationship.* Manuscript submitted for publication in the *Journal of Social and Personal Relationships*.

Schrodt, P., Witt, P. L., Myers, S. A., Turman, P. D., Barton, M. H., & Jernberg, K. A. *Testing a general model of instructional communication across four institutions.* Manuscript submitted for publication in *Human Communication Research*.

Conference Papers (* Indicates Top Paper Award)

Finn, A. N., Jernberg, K. A., Sawyer, C. R., & Behnke, R. R. (2008, November). *Changes in Public Speaking State Anxiety and Audience-perceived Speaker Competence as a Function of Audience Exposure.* Paper submitted to the Communication Apprehension and Avoidance Division for possible presentation at the

annual meeting of the National Communication Association, San Diego, CA.

Schrodt, P., Jernberg, K. A., Larson, L., Elledge, N., Glonek, K., & Ledbetter, A. (2008, November). *Family communication patterns as mediators of communication competence in the parent-child relationship.* Paper submitted to the Family Communication Division for possible presentation at the annual meeting of the National Communication Association, San Diego, CA.

* Schrodt, P., Witt, P. L., Myers, S. A., Turman, P. D., Barton, M. H., & Jernberg, K. A. (2008, April). *Learner empowerment and teacher evaluations as functions of teacher power use in the college classroom.* Top paper presented to the Communication Education Interest Group at the annual meeting of the Central States Communication Association, Madison, WI.

Lewis, R., Elledge, N., Jernberg, K. A., Sawyer, C., & Behnke, R. (2007, November). *Public speaking state anxiety as a function of anticipatory trait anxiety.* Paper presented to Communication Apprehension and Avoidance Division at the annual meeting of the National Communication Association, Chicago, IL.