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Developing Student-to-Student Connectedness: An Examination of Instructors' Humor, Nonverbal Immediacy, and Self-Disclosure in Public Speaking Courses

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Students may enter public speaking courses with mental and physical manifestations of anxiety and negative arousal (McCullough, Russell, Behnke, Sawyer, & Witt, 2006; Winters, Horvath, Moss, Yarhouse, Sawyer, & Behnke, 2006). Yet, public speaking is a common and important experience for college students (Bodie, 2010). Public speaking courses are either mandatory or recommended at most colleges or universities in the United States (Morreale, Hugenberg, & Worley, 2006; Pearson, DeWitt, Child, Kahl, & Dandamudi, 2007). Research indicates many students report feeling anxious before giving speeches (Ablamowicz, 2005) because they fear being negatively evaluated by their instructor and peers (Bodie). Therefore, it is warranted to consider factors that promote supportive communication in public speaking courses. Student-to-student connectedness represents a supportive, connected climate (e.g., students smile at one another, students praise one another) among peers in a

classroom (Dwyer, Bingham, Carlson, Prisbell, Cruz, & Fus, 2004), and is linked to positive learning outcomes (e.g., Johnson, 2009; Sidelinger & Booth-Butterfield, 2010).

Fassinger (2000) stated students are responsible for the way they treat one another in the classroom. In earlier studies, Fassinger (1995: 1997) examined participation as a group experience and found college students' perceptions of peer friendliness and support influenced how often they were willing to speak in class, whereas perceptions of the instructor had less impact on student participation. Although the instructor's role is less influential, instructors should consider how they can facilitate supportive communication (i.e. student-to-student connectedness) and use it as a teaching tool to promote various types of positive student outcomes in the public speaking classroom. Using a variety of effective instructional communication teaching strategies, instructors can build connectedness as another method of reducing public speaking anxiety and enhancing positive student learning outcomes. It is likely instructors affect the level of student-to-student connectedness in the classroom, either maximizing or minimizing such connections. Sidelinger, Myers, and McMullen (2011b) found student-to-student connectedness tempered students' public speaking apprehension and anxiety in public speaking courses. This study extends Sidelinger et al.'s study by examining specific relational instructor communication behaviors that may build student-to-student connectedness in public speaking courses.

Prior instructional research has linked teacher humor (e.g., Wanzer & Frymier, 1999), teacher self-disclosure (e.g., Cayanus, Martin, & Goodboy, 2009), and non-

verbal immediacy (e.g., Andersen, 1979) to positive learning outcomes in the college classroom. Similarly, student-to-student connectedness in the college classroom offers positive implications for educational processes and outcomes. To date, instructional researchers have linked student-to-student connectedness with affective learning (Johnson, 2009), cognitive learning (Prisbell, Dwyer, Carlson, Bingham, & Cruz, 2009), and self-regulated learning (Sidelinger & Booth-Butterfield, 2010). Further, Frisby and Martin (2010) linked student-to-student connectedness to oral participation in the classroom, suggesting that the supportive classroom environment may allow for students to overcome fears about speaking up in the classroom.

The aim of the present study is to determine whether initial perceptions of connectedness (first day of class) and relational instructor communication behaviors (i.e. teacher humor, teacher self-disclosure, and nonverbal immediacy) enhance student-to-student connectedness over the course of a semester in public speaking courses. For example, Johnson (2009) suggested students may mirror instructors' positive communication in the classroom not only with their instructors but also with their peers. This study determined whether perceptions of students' and instructors' positive communication lead to increases in perceptions of student-to-student connectedness over time in public speaking courses, and the associations they both may have with affective learning.

CONNECTED CLASSROOM CLIMATE

Dwyer et al., (2004) defined a connected classroom environment as “student-to-student perceptions of a supportive and cooperative communication environment” (p. 267). Student-to-student connectedness focuses on the interactions that take place among students in the classroom. In a connected classroom, strong social bonds exist, allowing students to positively express themselves openly and freely. Social bonds allow students to maintain ties and a degree of closeness with others in the classroom context (Scheff, 1990). Overall, students must have knowledge of one another and the aspects that form the social bonds are recognized and reciprocated by their peers (Bochner, 1978).

The classroom context can be viewed as a community setting. Teaching and learning not only occurs between the instructor and student but also among peers (Hirschy & Wilson, 2002). For example, Kendrick and Darling (1990) found students will turn to one another in the classroom to ask clarifying questions to better understand course material. Indeed, supportive peer interactions positively affect the classroom climate (Weaver & Qi, 2005). Therefore, this conceptualization suggests the responsibility for positive perceptions of feeling connected is placed with the students (e.g., Dwyer et al., 2004; Prisbell, Dwyer, Carlson, Bingham, & Cruz, 2009). Hirschy and Wilson stated that as teachers and students spend several months together in one setting, they develop relationships over time through interactions and common goals. Thus, students are likely to report increases in student-to-student con-

nectedness over the course of a semester. This connectedness, or social resource, eventually emerges and may facilitate learning. Students are integral to the classroom community and take part in the responsibility for class interactions throughout the semester (Fassinger, 2000). Therefore, we propose the following hypothesis:

- H1: Students' perceptions of student-to-student connectedness will increase over the course of a 15-week semester.

Existing connectedness research has also shown positive relationships between perceptions of student-to-student connectedness and perceptions of instructors' communication behaviors. Student-to-student connectedness positively correlates to instructors' nonverbal immediacy (Johnson, 2009) and rapport (Frisby & Martin, 2010) in the classroom. However, both studies only looked at student perceptions at one point in the semester. Thus, as an extension of existing research, this study determined whether changes in student-to-student connectedness is related to instructors' humor, nonverbal immediacy, and self-disclosure from the start of the semester, mid-semester, and the end-semester.

TEACHER HUMOR

Appropriate humor in the college classroom offers instructors the opportunity to stimulate and maintain students' attention and interest. Teacher humor may be a useful tool for creating a classroom climate that is conducive to student learning and performance. Booth-Butterfield and Booth-Butterfield (1991) defined humor

as, “intentional verbal and nonverbal messages, which elicit laughter, chuckling, and other forms of spontaneous behavior taken to meant pleasure, delight, and/or surprise in the targeted receiver” (p. 91). Humor in the classroom includes jokes, riddles, puns, humorous comments, and funny stories (Bryant, Comisky, & Zillmann, 1979). More specifically, Wanzer, Frymier, Wojtaszczyk, and Smith (2006) developed an extensive list for appropriate teacher humor and included: humor related to material without a specific target, jokes related to the course material, college life stereotypes, and role playing/activities. Overall, effective and appropriate teacher humor benefits instructors and students. For example, prior research found instructors’ use of appropriate humor is positively associated with students’ evaluations of instructors (Bryant, Crane, Comisky, & Zillman, 1980), students’ affective learning (Wanzer & Frymier, 1999), and learning comprehension (Gorham & Christophel, 1990). Moreover, instructors’ use of humor can create an enjoyable classroom climate, and alleviate students’ anxiety (Wanzer & Frymier).

TEACHER NONVERBAL IMMEDIACY

Nonverbal immediacy is also included in instructors’ arsenal of relational classroom behaviors (McCroskey, Richmond, & Bennett, 2006). It includes smiling, relaxed body posture, and vocal variety (Mehrabian, 1971), and helps to reduce distance by reducing real and/or perceived distance (Witt, Wheelless, & Allen, 2004). Andersen (1979) conceptualized immediacy as communication behaviors that predict teaching effec-

tiveness. Students' perceptions of an instructor's use of immediate or nonimmediate nonverbal behaviors in the classroom influence students' evaluations of the instructor and the overall classroom (Titsworth, 2004). Witt et al., stated, in their meta-analysis of immediacy in the classroom, that there is "a low to moderate association between teacher nonverbal immediacy and greater liking for the teacher and course, greater likelihood of engaging in behaviors learned, and greater likelihood of enrolling in another course of the same type" (p. 185). When students perceive their teachers as nonverbally immediate in the classroom, they also perceive them to be more caring, competent, and trustworthy (Teven & Hanson, 2004; Thweatt & McCroskey, 1998), and they are also more likely to attend class (Rocca, 2004) and are more willing to talk in class (Sidelinger, 2010). Overall, prior research has shown teacher nonverbal immediacy is essential to effective classroom instruction, builds a positive classroom climate, and positively affects student learning outcomes.

TEACHER SELF-DISCLOSURE

Teacher self-disclosure is when instructors reveal information about themselves which students would not otherwise know (Sorensen, 1989). For example, Javidi and Long (1989) reported that instructors generally disclose about their educational background, previous experience, family, friends, colleagues, beliefs, opinions, leisure activities, and personal problems. Nunziata (2007) examined similar categories of disclosure and found that most were considered appropriate by stu-

dents. Whether appropriate or inappropriate, instructors are motivated to disclose information to their students to build an interpersonal relationship (Frymier & Houser, 2000; Sorensen), provide examples (McBride & Wahl, 2005), and clarify course material (Downs, Javidi, & Nussbaum, 1988). Appropriate disclosure elicits a host of positive classroom outcomes including perceived similarity between teachers and student, increased classroom participation, enhanced approachability of the instructor, a positive classroom environment, higher motivation, increased affective learning, and more positive instructor evaluations (Goldstein & Benassi, 1994; Mazer, Murphy, & Simonds, 2007; Nunziata; Sorensen). Given the potential to attain these positive outcomes, self-disclosure is viewed as a relational communicative behavior for instructors to exhibit. Previous instructional research has not examined how instructor self-disclosure may impact the relationships between students. Thus, instructors' use of self-disclosure in the classroom may be just one more strategy employed to encourage student-to-student supportiveness, collaboration, and connectedness, as well as their affect for the instructor and the course.

AFFECTIVE LEARNING

Affective learning, a positive outcome in the classroom, involves students' positive attitudes, motivations, and values toward courses and instructors (McCroskey, 1994). Frymier (2007) argued that effective interpersonal relationships lead to increased affective learning in the classroom. To that end, affective learning has

been linked to multiple facets of interpersonal relationship in the classroom including a supportive peer climate (Frisby & Martin, 2010), teacher humor (Wanzer & Frymier, 1999), nonverbal immediacy (Witt & Wheelless, 2001), and self-disclosure (Mazer et al., 2007; Sorenson, 1989). Likewise, affective learning has been associated with student-to-student relationships in the classroom. Students who have the opportunity to interact and engage with one another report higher affect for the course (Messman & Jones-Corley, 2001). Affective learning is an important outcome variable given the evidence that affective learning leads to cognitive learning in students (Rodriguez, Plax, & Kearney, 1996). To date, research has not examined instructor communication behaviors and student-to-student connectedness simultaneously to determine which has a greater association with affective learning in the classroom.

RATIONALE

Overall, communication is a vital component of the classroom experience (Kendrick & Darling, 1990). “Communication enables teachers and students to engage in instructional tasks, facilitates social activity, and helps individuals to coordinate actions” (Kendrick & Darling, p. 15). Thus, it is important to examine instructor and student communication behaviors that enhance the classroom experience. Extensive instructional research has established that instructors’ use of nonverbal immediacy, self-disclosure, and humor in the classroom lead to positive instructional outcomes. To date, teacher

humor, nonverbal immediacy, and self-disclosure research has typically focused attention on the teacher-student relationship, and Johnson (2009) noted little, if any, instructional research has focused on student-to-student relationships in the classroom. Prior research shows that student-to-student connectedness enhances students' classroom experience (e.g., Frisby & Martin, 2010; Sidelinger & Booth-Butterfield, 2010). Specifically, in the public speaking courses, positive perceptions of student-to-student connectedness are linked to reductions in public speaking anxiety and apprehension, and increases in communication competence (Sidelinger et al., 2011b).

Like their instructors, students are part of the classroom community and should also take responsibility for classroom interactions. Therefore, this study examined the associations between instructors' relational communication and student-to-student connectedness in public speaking classrooms. Overall, prior research revealed connected, supportive bonds among students play an important role in the public speaking classroom (Sidelinger et al., 2011b). Public speaking courses can be overwhelming for students as they attempt to overcome their public speaking anxiety and apprehension (Morreale, Hugenberg, & Worley, 2006). Establishing social bonds help students to adjust to overall college life (Paul & Kelleher, 1995), and may assist students to develop positive attitudes and manage their anxieties in their public speaking classes. Therefore, students, rather than the instructor, may have a greater influence on one another in the classroom. For example, student-to-student connectedness mediates the negative associations between teacher misbehaviors and students' willingness

to talk in class and self-regulated learning (Sidelinger, Bolen, Frisby, & McMullen, 2011a). Moreover, Fas-singer (1995) reported that levels (high vs. low) of stu-dent supportiveness were greater predictors of class-room participation than instructor behaviors. Likewise, Sidelinger and Booth-Butterfield (2010) found student-to-student connectedness was a stronger predictor of student involvement than teacher confirmation behav-iors. Therefore, we proposed:

H2: Beginning of the semester reports of student-to-student connectedness (Time 1) will account for more variance than perceived instructor communication behaviors in students' subse-quent reports of student-to-student connecte-dness at Times 2 and 3.

H3: Student-to-student connectedness will account for more variance than perceived instructor communication behaviors in students' affective learning.

METHOD

Participants and Procedures

A total of 335 undergraduate students ($n = 185$ fe-males, $n = 150$ males) enrolled in 23 sections of small-size, introductory public speaking courses at a mid-size, public university voluntarily participated in this IRB approved study. Three data collections occurred during a 15-week semester. At the start of the semester (first day, Time 1), students completed the Connected Class-room Climate Inventory along with limited demographic

information including instructors' sex and students' age, sex, and academic rank. Students were from across academic ranks ($n = 128$ first-year students, $n = 114$ sophomores, $n = 57$ juniors, $n = 31$ seniors), their mean age was 19.41 ($SD = 3.54$, range = 18-61), and 170 students reported on courses with female instructors and 165 students reported on courses with male instructors.¹

The second data collection (Time 2) took place at mid-semester (7th week). Students completed the Connected Classroom Climate Inventory, Teacher Nonverbal Immediacy, Teacher Humor Orientation, and Teacher Self Disclosure Scale. The third data collection (Time 3) occurred at the end of the semester (15th week). The same measures in the second data wave were used in the third data wave with the addition of the Affective Learning Instrument. Given the number of speech assignments may vary across basic public speaking courses at the university, students also reported the number of speeches ($M = 4.45$, $SD = 1.37$) that they presented. In order to ensure Time 1 (T_1), Time 2 (T_2), and Time 3 (T_3) surveys were matched together, students were assigned code numbers for each public speaking course and asked to seal completed surveys in envelopes. Data collections were conducted during normal class times and students received minimal course credit for their participation. Initially, 468 students completed surveys during the first data collection², however, only participants who completed all surveys across the three data collections were included in this study.

Measures

Classroom connectedness. The 18-item, Likert-type, Connected Classroom Climate Inventory (CCCI) represents student-to-student behaviors that contribute to perceptions of a supportive climate in an instructional setting (Dwyer et al., 2004). Based on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*) students assessed their perceptions of student-to-student connectedness in their public speaking courses. For the original study, the measure yielded a coefficient alpha of .94. For the present study, reliabilities were .94 for T₁ ($M = 71.00$, $SD = 10.42$, range = 22-90), .96 for T₂ ($M = 75.16$, $SD = 10.97$, range = 22-90) and .97 for T₃ ($M = 78.83$, $SD = 11.26$, range = 18-90).

Humor. Following Zhang's (2005) study, a modified version of Booth-Butterfield and Booth-Butterfield's (1991) 17-item, 5-point Likert-type, humor orientation scale was used to assess students' perceptions of instructor humor orientation. Items were reworded to change from the self-report measure of humor to reflect student perceptions of instructor humor. Zhang reported reliability for the modified measure was .87, and for the present study, reliabilities were .88 for T₂ ($M = 60.13$, $SD = 10.25$, range = 33-83) and .91 for T₃ ($M = 61.79$, $SD = 11.96$, range = 21-85).

Nonverbal immediacy. The 10-item, Likert-type, Nonverbal Immediacy Behaviors (NIB) instrument reflects specific, low inference immediacy behaviors (Richmond, Gorham, & McCroskey, 1987). NIB refers to actual nonverbal behaviors (e.g., Smiles at the class while talking) teachers might use in the classroom, and participants were instructed to respond to the items based on a 5-point scale (0 = *never* to 4 = *very often*) at

T₂. For the present study, reliabilities were .70 for T₂ ($M = 32.94$, $SD = 4.75$, range = 12-40) and .70 for T₃ ($M = 33.03$, $SD = 4.61$, range = 18-40).

Teacher self-disclosure. Cayanus and Martin's (2004, 2008) Teacher Self Disclosure Scale includes 14, 7-point Likert type scale items. The three dimensional scale assesses amount (e.g., This instructor often gives his/her opinions about current events), relevance (e.g., This instructor used a personal example to show the importance of the concept), and negativity (e.g., This instructor's disclosures, on the whole, are more negative than positive) measured on a scale ranging from *completely disagree* (1) to *completely agree* (7). Cayanus and Martin reported high reliabilities ranging from .80-.88. For this study, T₂ reliabilities were .84 for amount ($M = 17.06$, $SD = 5.25$, range = 4-28), .91 for relevance ($M = 25.95$, $SD = 6.28$, range = 5-35), and .92 for negativity ($M = 9.98$, $SD = 6.83$, range = 5-35). For T₃, reliabilities were .90 for amount ($M = 16.56$, $SD = 5.78$, range = 4-28), .94 for relevance ($M = 24.90$, $SD = 7.17$, range = 5-35), and .93 for negativity ($M = 9.48$, $SD = 6.65$, range = 5-35).

Affective learning. Affective learning was measured using 7-point bipolar instrument reflecting affect toward the course content, affect toward enrolling in another course with similar content, affect toward the course instructor, and affect for take future courses with same instructor. Reliability coefficients for the affective learning measures have ranged from .91 to .98 (Andersen, 1979; Gorham, 1988; Teven & McCroskey, 1997). For this study, alpha reliabilities were .72 for affect toward course content ($M = 24.01$, $SD = 4.41$, range = 9-28), .92 for likelihood of enrolling in another similar

course ($M = 19.47$, $SD = 7.20$, range = 4-28), .80 for affect toward the instructor ($M = 25.22$, $SD = 4.04$, range = 4-28), and .92 for likelihood of enrolling in another course with the same instructor ($M = 23.72$, $SD = 5.52$, range = 4-28).

RESULTS

Hypothesis one predicted that classroom connectedness would increase over the course of the semester. Using paired samples t-test, three comparisons were made (i.e., T_1 to T_2 , T_2 to T_3 , and T_1 to T_3). The paired samples t-test comparing T_1 and T_2 revealed a significant difference, $t(324) = -7.72$, $p < .001$, with connectedness being significantly higher at T_2 ($M = 75.25$) than at T_1 ($M = 70.98$). The paired samples t-test comparing T_2 and T_3 revealed a significant difference, $t(326) = -6.26$, $p < .001$, with connectedness being significantly higher at T_3 ($M = 78.65$) than at T_2 ($M = 75.25$). Finally, a paired samples t-test comparing T_1 and T_3 revealed a significant difference, $t(319) = 10.95$, $p < .001$, with connectedness at T_3 ($M = 78.65$) being higher than at T_1 ($M = 70.98$). Over time, students feel more connected to one another in public speaking courses.

Hypothesis two explored T_1 student-to-student connectedness and T_2 and T_3 instructor behaviors (non-verbal immediacy, self-disclosure, and humor) as predictors of student-to-student connectedness at mid- and end-semester. The current literature does not suggest a specific order in which the instructor communicative variables or student-to-student connectedness would occur in the classroom, as most of the existing research

is cross-sectional and does not establish causality. Thus, a series of multiple regressions with the instructor communicative variables and student-to-student connectedness entered as independent variables in the same step were used to examine the research question. The dependent variable was student-to-student connectedness at T₂ and T₃.

The first multiple regression indicated that the model including T₁ student-to-student connectedness, T₂ teacher nonverbal immediacy and T₂ teacher humor, $F(6, 286) = 34.95, p < .0001$, accounted for 41% ($R^2 = .41$) of the variance in perceptions of students' perceptions of student-to-student connectedness at T₂. Specifically, the strongest significant predictor of perceptions of T₂ connectedness was T₁ connectedness, $\beta = .484, p < .0001$, followed by teacher nonverbal immediacy, $\beta = .261, p < .0001$, and teacher humor, $\beta = .110, p < .05$. Results supported hypothesis two, students' initial reports of connectedness during the first week of the semester are a stronger predictor of their perceptions of connectedness at mid-semester than their perceptions of instructors' relational communication behaviors.

The second multiple regression indicated that the model including T₁ student-to-student connectedness, T₃ teacher nonverbal immediacy and T₃ teacher humor, $F(6, 286) = 16.51, p < .0001$, accounted for 24% ($R^2 = .24$) of the variance in perceptions of students' perceptions of student-to-student connectedness at T₃. Specifically, the strongest significant predictor of perceptions of T₃ connectedness was T₁ connectedness, $\beta = .301, p < .0001$, followed by teacher nonverbal immediacy, $\beta = .250, p < .0001$, and teacher humor, $\beta = .163, p < .01$. Again, results revealed students' initial reports of connectedness

during the first week of the semester are a stronger predictor of their perceptions of connectedness at the end-semester than their perceptions of instructors' relational communication behaviors.

Hypothesis three explored T_3 student-to-student connectedness and T_3 perceived instructor behaviors as predictors of students' T_3 affective learning. Again, a series of multiple regressions with the instructor communication variables and student-to-student connectedness entered as independent variables in the same step were used to examine the research question. In each multiple regression, one of the four types of affective learning was entered as the dependent variable.

The first multiple regression indicated that the model including student-to-student connectedness, self-disclosure: amount, and teacher nonverbal immediacy, $F(6, 284) = 6.33, p < .0001$, accounted for 12% ($R^2 = .12$) of the variance in perceptions of students' affect for course content. Specifically, the strongest significant predictor of perceptions of students' affect for course content was connectedness, $\beta = .200, p < .005$, followed by self-disclosure (i.e., amount), $\beta = -.174, p < .05$, and teacher nonverbal immediacy, $\beta = .134, p < .05$.

The second multiple regression indicated that the model including student-to-student connectedness and self-disclosure: amount, $F(6, 285) = 3.43, p < .005$, accounted for 10% ($R^2 = .10$) of the variance in perceptions of students' likelihood of enrolling in a similar course. The strongest significant predictor of perceptions of students' affect for course content was connectedness, $\beta = .193, p < .05$, followed by self-disclosure (i.e., amount), $\beta = -.184, p < .05$. The third multiple regression revealed that the model including teacher nonverbal immediacy,

teacher humor, and student-to-student connectedness, $F(6, 290) = 9.86, p < .0001$, accounted for 15% ($R^2 = .15$) of the variance in perceptions of students' affect toward instructor.

The strongest significant predictor of perceptions of students' affect toward instructor was teacher nonverbal immediacy, $\beta = .213, p < .001$, followed by teacher humor, $\beta = .172, p < .01$, and connectedness, $\beta = .161, p < .01$.

The fourth multiple regression revealed that the model including teacher humor, teacher nonverbal immediacy, student-to-student connectedness, and self-disclosure: amount, $F(6, 289) = 11.67, p < .0001$, accounted for 20% ($R^2 = .20$) of the variance in perceptions of students' likelihood of enrolling in another course with the same instructor. The strongest significant predictor of perceptions of students' likelihood of enrolling in another course with the same instructor was teacher humor, $\beta = .230, p < .0001$, followed by teacher nonverbal immediacy, $\beta = .192, p < .005$, connectedness, $\beta = .155, p < .01$, and self-disclosure (i.e., amount), $\beta = -.131, p < .05$. Overall, student-to-student connectedness was a stronger predictor for students' affect for the course, and teacher nonverbal immediacy and humor were stronger predictors for students' affect toward the instructor. Moreover, teacher self-disclosure (i.e., amount) was negatively linked to students' affective learning.

DISCUSSION

“Meaningful interactions between students and their teachers are essential to high-quality learning experi-

ences” (Kuh, Kinzie, Schuh, & Whitt, 2005, p. 207). If instructors incorporate effective, relational communication into their teaching, they may encourage students to become more connected with one another in the public speaking classroom. Connection to others in a cooperative, communal learning environment is essential to becoming an educated person (Palmer, 1993). Thus, high quality interactions between students, in addition to between teachers and students, in the public speaking classroom should also be considered essential to learning processes. Myers and Hunt (2011) noted that participation in the basic course is valued by instructors and their students, and Sidelinger and Booth-Butterfield (2010) found student-to-student connectedness is positively associated with students’ willingness to talk in class. Therefore, it is essential for instructional communication scholars and public speaking course instructors to consider student-to-student relationships in the classroom as an effective pedagogical tool for enhancing the overall public speaking classroom experience.

Many college students enrolled in public speaking courses experience sweaty palms, “butterflies” in the stomach, or a “lump” in the throat prior to or during their speech performances (McCullough et al., 2006; Winters et al., 2006). Therefore, public speaking instructors seek, and implement, strategies intended to decrease student anxiety. In Bodie’s (2010) review of public speaking anxiety, he highlights the three most popular treatments of speaking anxiety: systematic desensitization, cognitive modification, and skills training. These strategies address physical arousal, negative cognitive beliefs, and trait anxiety. However, they focus on the individual experiencing the anxiety, and ignore con-

textual and situational factors. Given evidence in previous research that student relationships, instructor relationships, and a sense of community can provide a comfortable and supportive environment for public speaking students (Edwards & Walker, 2007; Robinson, 1997), this study examined the development of a relational environment between students and with instructors over time. Thus, incorporating a “treatment” for the environment and community in which the students are speaking may be an important technique for instructors to employ in reducing anxiety.

The results of this study extend previous research in several ways. First, the development of student-to-student connectedness was examined for changes over time. Second, changes in student-to-student connectedness were examined as they were associated with beginning of the semester reports of student-to-student connectedness (baseline) and perceived instructor communication behaviors at mid-semester and the end of the semester. Finally, the student-to-student environment and teacher behaviors were examined in conjunction with one another as influential factors in students’ affective learning. Instead of examining these constructs in general instructional classrooms, these findings are examined in the specific context of the public speaking classroom.

Enhancing Connectedness

Previous research and conceptualization of student-to-student connectedness focuses on the behaviors that students enact to build a supportive environment (e.g., praise one another, share stories, shows interest in

what others are saying). However, students in this study entered the classroom with existing perceptions of high connectivity ($M = 70.98$). Because this study measured connectedness on the first day of class (baseline), before students had the opportunity to interact within that specific classroom, it can be argued that students may enter the classroom feeling a sense of shared identity, or homophily, as students who are about to embark on the public speaking experience together. Furthermore, some students may already have existing relationships with some of their peers prior to entering the public speaking classroom. Recent retention efforts include welcoming and community building events, learning communities, and first year programs to increase student engagement and persistence (Jamelske, 2009; Trotter & Roberts, 2006). It is possible that these programs influenced the already high perceptions of student-to-student connectedness. Overall, despite the already high levels of connectedness, the development of a supportive community continued to increase throughout the semester. Results showed that students' reports of connectedness significantly increased over the course of the semester in public speaking classes. In part, the continued increases in connectedness, was linked to students' perceptions of student-to-student connectedness on the first day of class.

Importantly, nonverbal immediacy and teacher humor also predicted the perceptions of increasing classroom connectedness. Specifically, teacher humor and nonverbal immediacy were positively linked with students' reports of connectedness at mid-semester and the end of the semester. It is unclear whether instructor behaviors influenced connectedness or the already high

level of connectedness influenced the instructor's behaviors. In a classroom where students are comfortable with one another, an instructor may also feel more relaxed and use greater amounts of humor and nonverbal immediacy.

One explanation for these results may be the occurrence of interaction mirroring or synchrony in the classroom. Johnson (2009) noted that students may mirror their instructors' nonverbal immediacy behaviors in the classroom not only with the instructors but also with their peers. These synchronous behaviors are co-occurring similar patterns of behavior that are a form of communicative display among interacting individuals (Manusov, 1992). La France and Ickes (1981) stated that synchronous behaviors are more appropriate and also more likely to occur when individuals are involved in ongoing interactions (e.g., the classroom). Synchronous behaviors function to establish rapport between individuals (Chartrand & Bargh, 1999). Therefore, it is likely students and instructors may mirror one another's relational communication behaviors in the classroom.

Surprisingly, self-disclosure did not emerge as influential in the perceptions of connectedness. Results found self-disclosure amount, relevance, and negativity did not predict connectedness. Prior research revealed negative, dishonest, overly intimate, or poorly timed disclosures are associated with negative perceptions and poor instructor evaluations (Lanutti & Strauman, 2006; Myers & Brann, 2009; Scott & Nussbaum, 1981; Sorenson, 1989). However, a recent study found students who report a sense of connectedness with their peers can still achieve positive learning outcomes even when their in-

structors misbehave in the classroom (Sidelinger et al., 2011). Therefore, negative teacher self-disclosures may not reduce student-to-student connectedness. The current study focused primarily on positive relational behaviors, but research should explore other possible negative instructor communication behaviors. Instructors' verbal aggression may lead to decreases in perceptions of student-to-student connectedness or they may actually increase supportive communication among students. For example, Sias and Jablin (1995) found that peer cohesion and support increased when superiors were perceived as unfair and inconsiderate in the workplace. This may also happen in the classroom, students may turn to one another for support when their instructors behave inappropriately in the classroom. Ultimately, self-disclosure may operate to build a connection between the instructor and the students, but not between students.

Overall, prior research, along with this study, attests to the importance of supportive student-to-student relationships in the classroom. The connected classroom climate appears to be especially helpful in public speaking classes, and instructors need to consider how their communication behaviors influence student-to-student connectedness. The Connectedness Classroom Climate Inventory allows instructors to gauge their students' perceptions of supportive peer communication over the course of a semester (Dwyer et al., 2004). This instrument was intended to enable instructors to check student connectedness, and if appropriate, alter any of their own communication behaviors. In light of this study's results, public speaking instructors should consider gauging students' perceptions of connectedness at

the beginning of the semester. A post hoc analysis revealed a significant difference in reports of student-to-student connectedness between students who were only present for the first data collection and students who were present for all three data collections.² Students who were only present at the first data collection reported significantly lower levels of connectedness than those students who were present for all three data collections. This may indicate that students who do not feel a sense of connection with their peers may be less likely to attend class on a regular basis or more importantly more likely to drop the class. In general, this study speaks to the importance that instructors should remain aware of the overall classroom climate and be sensitive to changes in the environment throughout the entire semester.

Enhancing Affective Learning

As expected, student-to-student connectedness and most instructor communication behaviors contributed to affective learning. Interestingly, student-to-student connectedness and instructor communication behaviors functioned differently in their associations with affective learning. Student-to-student connectedness was a stronger predictor for students' affect for the course, and teacher nonverbal immediacy and humor were stronger predictors for students' affect toward the instructor. Overall, across the four types of affective learning, student-to-student connectedness and instructor disclosure (i.e., amount) were the most consistent predictors. These two variables only failed to emerge in predicting affect for the instructor. Consistent with previous research

(Johnson, 2009) students who are engaged in connected classrooms reported higher affective learning. However, this study extends Johnson's research in that student-to-student connectedness has a stronger association with affect for course than affect for instructor, at least in public speaking courses. To this end, perhaps students place greater value on the whole, the classroom and other students as a group, in determining their liking for a particular course. Thus, finding ways to increase student affective learning in a course that is typically hated, or even feared, may improve the educational experience. Rodriguez et al. (1996) argued that affective learning mediates the relationship between instructor behaviors and cognitive learning. Following this argument, it becomes essential to increase affective learning in public speaking courses in order to allow for the maximum amount of cognitive learning to occur for students.

Contrary to our results, previous disclosure research has revealed a positive association between teacher disclosure and affective learning (Cayanus & Martin, 2008; Mazer et al., 2007). This may be explained by the high levels of connectedness present in the current sample. Students may have been more interested in disclosing and developing relationships with one another than with their instructors. Myers (1998) found that students disclosed a greater number of topics with their classmates. However, these opportunities to interact with classmates may be decreased by an instructor who uses precious in-class time to disclose about themselves. Further, an instructor who discloses often may not adhere to reciprocity expectations. Students may not have the ability to disclose in response to the instructor,

thus, violating expectations and norms about interpersonal behavior.

Overall, it may be best practice to inform instructors that while self-disclosure may clarify course material or build relationships (Downs et al., 1988; Frymier & Houser, 2000), self-disclosure appears to have negative or no effect on affective learning in the public speaking classroom unless it is directly relevant to the course. As a continuation of this study, future research should address types of teacher self-disclosure in public speaking courses. Do specific types of disclosure alleviate or exacerbate students' public speaking anxiety? For example, if instructors share their negative experiences in their undergraduate public speaking classes, students may feel better about their own negative experiences. Or if instructors reveal public speaking was not problematic for them in their undergraduate classes, students may feel worse about their own anxieties.

LIMITATIONS AND FUTURE DIRECTIONS

While this study exhibited many strengths (e.g., longitudinal), there were limitations that should be addressed in future research. This study focused on student perceptions of connectedness, but other outcome variables would add insight into the classroom environment as well. Specifically, actual student behaviors would contribute to our understanding of how student perceptions influence student actions. For example, we may ask student to report on attendance, study habits, contact with fellow students and instructors outside of class. Second, this study only collected teacher behav-

iors at mid-semester and the end of the semester, assuming that students would not have had time to interact with the instructor to report on a baseline of instructor behaviors. Future research may ask for baseline teacher behaviors, but control for previous interactions and classes with the instructor.

Next, we were unable to gather data from those who did not complete the mid-semester and end of semester surveys. Without this information, we cannot draw conclusions about changes in connectedness or instructor behaviors that may have contributed to their exit from the classroom. Moreover, beyond instructor behaviors, Broeckelman-Post, Titsworth, and Brazeal (2011) found use of peer workshops in the basic course is positively associated with increases in student-to-student connectedness. Basic course peer workshops are in-class student instruction that encourages students to share their speech drafts with one another to seek feedback. As an extension of current connectedness findings, future research should determine if use of peer workshops and relational instructor communication behaviors co-construct a connected classroom climate. Basic course instructors need to recognize the positive implications of student-to-student connectedness and implement teaching methods and practices that will promote supportive communication among students in the classroom.

Although not examined in this study, the increases in connectedness over time also point to the possibility that connectedness has the potential to decrease over time, with negative student-to-student interactions or negative instructor behaviors. Following from this study, future research should continue to examine stu-

dent connectedness over time, as instructor misbehaviors, aggression, or anger may negatively impact the overall environment. Often instructors are directed to build a positive environment in the beginning of class by including introductions and ice breakers. However, little advice is given to consciously continue building connectedness throughout the course of the entire semester. The post hoc analysis found a significant difference in T₁ reports of classroom connectedness between students who only completed the T₁ surveys and those students who participated in all three data collections.² This suggests that student-to-student connectedness may reveal insight into attendance and retention efforts. This study did not determine if any students officially dropped their public speaking course, therefore, future research should examine the associations between student-to-student connectedness and student attendance and retention. Recent research found positive associations between students' perceptions of instructors' effective communication (e.g., nonverbal immediacy) and their likelihood to remain in college (Eman Wheelless, Wirr, Maresh, Bryand, & Schrodt, 2011). Therefore, a link may also exist between a connected classroom climate, in which students support one another, and student attendance and retention

Finally, as discussed, it is possible that the high connectedness is a result of institutional efforts to welcome and connect with students. This study did not assess these efforts as it may impact the individual classrooms. However, future retention and engagement research may measure connectedness at the university level over time to examine the impact on retention and academic success. Moreover, student alienation on cam-

pus often leads to negative consequences such as irritability and depression (Evans, Forney, & Guido-DiBrito, 1998). The first step to counteractive feelings of marginalization is for students to interact with their peers. Therefore, future research should extend the implications of student-to-student connectedness inside the classroom to possible links outside of the classroom. Prior research has shown student persistence in college is associated with positive engagement with faculty and student-related campus activities (Eman Wheelless, et al. (2011). Strong, supportive bonds that exist among students in the classroom may also encourage student persistence in academic programs.

CONCLUSION

Many students may enter the public speaking classroom with feelings of anxiety and apprehension. Prior research indicates that positive perceptions of student-to-student connectedness may alleviate some of those negative feelings (Sidelinger et al., 2011b). Given the positive links between connectedness and classroom learning outcomes (Frisby & Martin, 2010; Johnson, 2009; Sidelinger & Booth-Butterfield, 2010), this study explored the associations between student-to-student connectedness and instructor communication behaviors. Overall, instructors have the opportunity to encourage student-to-student connectedness in their classrooms and may capitalize on high feelings of connectedness throughout the course. Positive perceptions of student-to-student connectedness in the classroom can increase as a semester progresses and that increase is linked to

effective and appropriate instructor communication behaviors. The implications of this study point to a need for instructors to closely examine their own behaviors, as well as those behaviors occurring between their students with the understanding that they have the potential to use effective communication behaviors in the classroom that will assist students to develop a sense of connectedness with their peers. In turn, that connectedness may create a more comfortable environment for students to present speeches and participate in class. The public speaking classroom must be designed to provide positive experiences through the adoption of supportive, connected learning strategies.

NOTES

Post hoc analyses found students perceived higher levels of student-to-student connectedness in public speaking course sections taught by female instructors than courses taught by male instructors. The independent samples t-test comparing students' reports of connected in female instructors and male instructors classes revealed a significant differences, $t(323) = -2.46$, $p < .05$, with connectedness being significantly higher at T_1 in female instructors' classes ($M = 72.46$, $SD = 11.03$) than in male instructors' classes ($M = 69.46$, $SD = 9.65$). Significant differences were found with connectedness at T_2 ($t(331) = -2.43$, $p < .05$), students reported higher levels of connectedness in female instructors' classes ($M = 76.64$, $SD = 12.41$) than in male instructors' classes ($M = 73.74$, $SD = 9.20$). Similar results were found at T_3 , students reported higher levels of connectedness in fe-

male instructors' classes ($M = 80.92$, $SD = 11.27$) than in male instructors' classes ($M = 76.88$, $SD = 10.93$).

A post hoc independent samples t-test revealed a significant difference between students who completed the first set of surveys but did not complete surveys for the second and third data collections and those students who completed all three sets of surveys, $t(461) = -3.37$, $p < .005$. Students who only completed surveys during the first data collection reported lower levels of student-to-student connectedness ($M = 66.38$, $SD = 9.03$) at T₁ than did students who were present for all three data collections ($M = 71.00$, $SD = 10.42$).

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