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Students' Communication Predispositions: An Examination of Classroom Connectedness in Public Speaking Courses

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INTRODUCTION

Sweaty palms, “butterflies” in the stomach, or a “lump” in the throat are a few common pre-public speaking phenomena that plague many college students enrolled in basic public speaking courses (McCullough, Russell, Behnke, Sawyer, & Witt, 2006; Winters, Horvath, Moss, Yarhouse, Sawyer, & Behnke, 2006), with many students likely to experience their highest level of public speaking anxiety or apprehension right before giving a speech (Behnke & Sawyer, 1999). Public speaking is one part of communication apprehension (CA), which is defined as “an individual’s level of fear or anxiety associated with either real or anticipated communication with another person or persons” (McCroskey, 1977, p. 78). Public speaking is a common experience for college students, the course is either mandatory or recommended at most colleges and universities in the United States (Morreale, Hugenberg, & Worley, 2006; Pearson, DeWitt, Child, Kahl, & Dandamudi, 2007). Examining factors that alleviate public speaking anxiety is warranted, given many students report feeling anxiety before giving speeches (Ablamowicz, 2005), and are often required to enroll in presentation-based courses.

In general, helping students to achieve academic success is difficult (Hunter, 2006), especially for public speaking instructors who strive to help students cope with public speaking anxiety and apprehension. Student performance should be considered the most important outcome of the classroom experience (Hirschy & Wilson, 2002; Page & Mukherjee, 2000), and much of instructional communication research has focused on effective instructor communicative attributes and how they enhance the classroom experience, including teacher caring (Teven & McCroskey, 1997), self-disclosure (Cayanus, Martin & Goodboy, 2009), and immediacy (Witt, Wheelless & Allen, 2004). Most often, research examines the classroom climate in terms of the student-teacher interactions in the classroom (Johnson, 2009), and Dwyer, Bingham, Carlson, Prisbell, Cruz, and Fus, (2004) noted little, if any, research has examined supportive classroom climate based on perceptions of student-to-student communicative attributes. Thus, the aim of the present study is to determine if student-to-student connectedness helps to reduce public speaking anxiety and apprehension as well as increase self-perceived communication competence for students enrolled in basic public speaking courses.

Prior research indicates intervention strategies help students in public speaking courses. For example, Ayres, Schliesman, and Ayres Sonandré (1998) found that in-class practice was an effective way to reduce public speaking anxiety for students, and Menzel and Carrell (1994) found more preparation time leads to better speech performance. Likewise, students enrolled in public speaking courses who rehearsed their speeches in front of an audience prior to the actual presentation are

likely to receive higher evaluation scores than those who did not (Smith & Frymier, 2006). Student-to-student connectedness in the classroom may also offer an opportunity for students to feel more comfortable giving speeches.

Classroom Connectedness

Classroom connectedness is defined “as student-to-student perceptions of a supportive and cooperative communication environment in the classroom” (Dwyer, et al., 2004, p. 267). The classroom environment can be viewed as a community setting. Teaching and learning not only occurs between the teacher and student but also among students (Hirschy & Wilson, 2002). For example, Kendrick and Darling (1990) reported students will ask other students in the classroom clarifying questions to better understand course material. Moreover, prior research found positive associations between student-to-student connectedness and affective learning (Johnson, 2009), cognitive learning (Prisbell, Dwyer, Carlson, Bingham, & Cruz, 2009), and self-regulated learning (Sidelinger & Booth-Butterfield, 2010).

Palmer (1993) stated knowing and learning are part of a communal, collaborative process shared among instructors and students. Moreover, Hirschy and Wilson (2002) argued that as teachers and students spend several weeks to several months together in one setting, they develop relationships over time through continuous interactions and common goals. Even though instructor behaviors and teaching methods profoundly influence the classroom experience, students are part of the classroom community and take part in the responsibility for

class interactions. Peer interactions significantly influence the classroom climate (Weaver & Qi, 2005). Fassinger (1997) examined participation as a group experience and found students' perceptions of peer friendliness influenced how often they were willing to speak in class, whereas perceptions of the instructor had less impact on student participation. Fassinger (1995) also found level of student supportiveness predicted either classroom participation or classroom silence. Similarly, student misbehaviors erode student-to-student connectedness in college classrooms (Bingham, Carlson, Dwyer, & Prisbell, 2009).

Presence of peers differs from the perception of supportive peers. For example, when students believed they were the center of attention, they reported they were less likely to participate in the classroom (Hudson & Bruckman, 2004). Moreover, students in large classes reported a lack of involvement, lack of individualized attention from instructor, and an inhibition of student-instructor communication (Smith, Kopfman, & Ahyun, 1996). Similarly, Kendrick and Darling (1990) found an inverse relationship between class size and student clarifying tactics (e.g., question-asking). In larger class sizes, clarifying tactics decreased. Neer and Kircher (1989) found classroom participation and discussion were mediated by interpersonal familiarity and acceptance. Students were more comfortable communicating in small groups rather than with the entire class. Thus, establishing relationships with other students acts as a precursor to student involvement (Sidelinger & Booth-Butterfield, 2010). If students develop a sense of connectedness with the peers in basic public speaking

courses, they may in turn experience a reduction in public speaking anxiety and communication apprehension.

Public Speaking Anxiety/ Communication Apprehension

Public speaking anxiety is a common experience (Daly, Vangelisti, & Weber, 1995) that is associated with psychological anxiety and physiological stress indicators (Witt, Brown, Roberts, Weisel, Sawyer, & Behnke, 2006). Public speakers are likely to experience heart rate elevations, excessive sweating, trembling, and gastrointestinal sensations (Behnke & Carlile, 1971; Horvath, Hunter, Weisel, Sawyer, & Behnke, 2004; Witt et al., 1995). Thus, the overall experience is likely to have debilitating effects on individuals' speaking performances (Daly et al., 1995). Students typically experience the most anxiety immediately prior to the public speaking experience and that this anxiety is further intensified when students also believed they lack the ability to accomplish the speaking assignment (Luchetti, Phipps, & Behnke, 2003). Even well before the speech performance, level of anxiety influences motivation to prepare for the presentation (Mitchell & Nelson, 2007).

Students who have a negative attitude toward their presentations are less motivated to prepare and present their speeches. Students high in communication apprehension (CA) spend more time preparing their speeches than their low CA counterparts (Ayres, 1996). However, they ineffectively spend time preparing notes rather than focus more time on audience analysis. Anxiety may motivate high CA students to prepare for their public

speaking assignments but it also influences how they prepare. Ayres noted high CA students in public speaking courses seem to avoid communication-oriented preparation. Thus, it is important to examine other strategies that can alleviate public speaking anxiety, especially for high CA students.

Edwards and Walker (2007) found that students who participated in learning communities experienced a reduction in communication apprehension. The researchers noted this outcome may be due to the notion that learning communities provide students with increased opportunities for communication between students and faculty. Overall, Tinto (1993) offered a very broad definition for a learning community: shared knowledge and shared knowing. Booth-Butterfield (1988) found that students' communication anxiety and avoidance may also decrease when instructors provide students with activities in a variety of contexts. This may relate to Neer and Kircher's (1989) findings that students are more comfortable communicating in small groups rather than with the entire class. Ultimately, students who experience a reduction in their communication apprehension are also likely to experience an increase in their self-perceived communication competence.

Communication Competence

McCroskey and McCroskey (1988) stated that individuals' willingness to communicate with others is strongly rooted in their self-perceived communication competence. Spitzberg (1983) conceptualized communication competence to include knowledge, skill, and motivation, and can be considered an interpersonal im-

pression, judged on a continuum of effectiveness and appropriateness. Jensen and Jensen (2006) stated communication competence is a learned behavior and individuals need to adapt their communication to various contexts in order to be competent communicators. Almeida (2004) examined students' perceptions of communication competence and found that they viewed communication competence as a performance that is strongly associated with social bondedness. Moreover, self-perceived communication competence is inversely associated with communication apprehension and introversion, while positively related to self-esteem and sociability (Richmond, McCroskey, & McCroskey, 1989). Thus, students who suffer from severe communication apprehension also are going to perceive themselves as incompetent communicators. This is especially noteworthy, because Dwyer and Fus (2002), and Rubin, Rubin, and Jordan (1997) found that many students are likely to experience a reduction in communication apprehension and an increase in self-perceived communication competence over time in basic public speaking courses.

Effective teaching strategies in public speaking courses help to alleviate anxiety for students and may enhance their communication skills. Dwyer and Fus (2002) examined instruction in public speaking courses and their results indicated instructors' learning strategies and interventions help to reduce CA and enhance perceptions of communication competence. Essentially, if communication competence can improve through trial and error (Jensen & Jensen (2006), students who have more opportunities to interact with peers in class will also have more opportunities to improve upon their communication skills. Hence, it is possible to help stu-

dents increase their perceptions of communication competence in public speaking courses over the course of a traditional 16-week semester.

RATIONALE

If students experience a sense of connectedness with their peers it may alleviate some of their public speaking anxiety and apprehension. McPherson, Kearney, and Plax (2003) stated that “teachers and students can and do become more familiar with each other over time” (p. 80). Thus, as the semester progresses, students have the opportunity to interact with each other and become more familiar with one another over time. Ultimately, public speaking instructors need to consider if student-to-student connectedness can reduce students’ level of public speaking anxiety and apprehension as well as increase students’ self-perceived communication competence.

Overall, public speaking anxiety may be influenced by a variety of factors such as lack of preparation or prior experiences (Pearson et al., 2007). However, fear of negative evaluation is a primary cause of public speaking anxiety. There is greater likelihood for speakers to experience state anxiety during public speaking episodes when they experience a greater fear of negative evaluation (Woody & Rodriguez, 2000). Interestingly, students report their anxiety may be communicated to their audience (Woody & Rodriguez, 2000), however, Behnke, Sawyer, and King (1987) found the audience is not likely to pick up on the student speaker’s anxiety. While listening to a student speaker, the other students

in class are not likely to notice the speaker's anxiety signals such as a quivering voice or trembling hands. If students in public speaking courses realize their audience is not very critical of their speaking performances they may, in turn, become more comfortable during their presentations. Similarly, Behnke and Sawyer (2004) noted students often report increases in confidence with repeated exposure to audiences, and Kondo (1999) found individuals with initial lower public speaking anxiety are more likely to engage in effective anxiety reducing strategies such as audience deprecation (e.g., thinking of the audience as vegetables). Perceptions of the audience and audience feedback play a pivotal role in public speaking anxiety (MacIntyre & MacDonald, 1998). Thus, it is beneficial for students in basic public speaking courses to perceive a sense of connectedness with their peers. Student-to-student connectedness in public speaking courses may provide students with a safe haven that serves to alleviate public speaking anxiety and apprehension. Moreover, given prior research indicated students perceive communication competence, in part, as a performance and social bondedness, students should perceive an increase in their communication competence over the course of a semester in classes that they also perceive student-to-student connectedness. Therefore, data collection took place at two points in the semester, the first data collection (T^1) occurred during the first week of a 16-week semester and the second data collection (T^2) took place during the 15th week. The following hypotheses are offered:

- H1a: There will be a positive association between student-to-student connectedness and the

change in students' perceptions of their public speaking anxiety from T¹ to T².

H1b: There will be a positive association between student-to-student connectedness and the change in students' perceptions of their public speaking apprehension from T¹ to T².

H2: There will be a positive association between student-to-student connectedness and the change in students' perceptions of their communication competence from T¹ to T².

H3a: Student-to-student connectedness will mediate the association between T¹ public speaking anxiety and T² communication competence.

H3b: Student-to-student connectedness will mediate the association between T¹ public speaking apprehension and T² communication competence.

METHOD

Participants and Procedures

A total of 368 undergraduate students ($n = 203$ females, $n = 165$ males) enrolled in introductory public speaking courses at a mid-size, public university voluntarily participated in this IRB approved study. Surveys were administered over two data waves during the semester. At the start of the semester (first week, Time 1), students completed self-reports of self-perceived communication competence, public speaking anxiety, and

the PRCA-24 public speaking apprehension subscale. Instructors' sex along with students' demographic information (i.e., age, sex, and academic rank) were also collected during the first data wave. Students were from across academic ranks ($n = 141$ freshmen, $n = 104$ sophomores, $n = 83$ juniors, $n = 37$ seniors), their mean age was 19.31 ($SD = 2.58$), and 235 students reported on courses with female instructors and 129 students reported on courses with male instructors.

The second data wave (Time 2) took place at the end of the semester (15th week) when students completed assigned speeches. Students completed the same measures again with the addition of Connected Classroom Climate Inventory. Given the number of speech assignments may vary across basic public speaking courses at the university, students also reported the number of speeches ($M = 3.87$, $SD = 1.16$) that they presented. In order to ensure Time 1 (T¹) and Time 2 (T²) surveys were matched together, students were assigned code numbers for each public speaking course and asked to seal completed surveys in envelopes. Both data waves took place during normal class time and students received minimal course credit for their participation. Only participants who completed both surveys were included in this study.

Measures

Communication competence. The 12-item Self-Perceived Communication Competence scale measures the way individuals view their own communication competence (Chesebro et al., 1992). The items reflect generalized communication contexts: public speaking, large

meeting, small group, and dyadic (McCroskey & McCroskey, 1988). Responses were solicited from 0 = *completely incompetent* to 100 = *completely competent*. Richmond et al. (1989) reported coefficient alphas of .93 and .96 across two studies. For this study, $\alpha = .82$ ($M = 79.71$, $SD = 12.88$) for T¹, and $\alpha = .85$ ($M = 84.27$, $SD = 11.16$) for T².

Public speaking anxiety. Daly, Vangelisti, Neel, and Cavanaugh's (1989) 10-item public speaking anxiety measure addresses individuals' fear or anxiety associated with public speaking (e.g., "I have no fear of giving a speech"). Responses were solicited using a five-point scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Daly et al. reported a coefficient alpha of .89 for the measure. For this study, $\alpha = .90$ ($M = 31.72$, $SD = 8.15$) for T¹, and $\alpha = .88$ ($M = 28.48$, $SD = 7.38$) for T².

Public speaking apprehension. The Personal Report of Communication Apprehension (PRCA-24) represents communication apprehension across four generalized contexts: interpersonal, small group, large meeting, and public speaking. For this study, the 6-item PRCA-24 public speaking subscale was used to address individuals' level of communication apprehension in their public speaking courses. Vinson and Roberts (1993) stated it is appropriate to separate PRCA-24 items into subscales in order to appropriately identify individuals' type of communication apprehension. They noted two individuals can have the same PRCA-24 score but for very different types of communication apprehension, and found the PRCA-24 public speaking subscale reliable across studies, with a range of .79 to .92. For this study, $\alpha = .86$ ($M = 18.87$, $SD = 5.19$) for T¹, and $\alpha = .83$ ($M = 17.01$, $SD = 4.73$) for T².

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 were asked to report their perceptions of student-to-student connectedness in their introductory public speaking courses. For the original study, the measure yielded a coefficient alpha of .94. For this study, $\alpha = .95$ ($M = 74.02$, $SD = 10.96$).

Data Analyses

This study used discrepancy scores for hypotheses H1a, H1b, and H2. Discrepancy scores are based on procedures that reflect the changing nature of behaviors, attitudes, or perceptions. In this case discrepancy scores were used to determine if public speaking anxiety and apprehension, and communication competence discrepancy scores had any associations with perceptions of student-to-student connectedness.

We also employed path analyses for H3a and H3b to test the mediating effects of student-to-student connectedness on students' public speaking apprehension, speech anxiety, and communication competence. A path analysis is an extension of the regression model, and offers a path model relating independent, intermediary, and dependent variables (Everitt & Dunn, 1991). It examines causal relationships between two or more variables and is based upon a linear equation system. However, it is noted that a path analysis is unique from other linear equation models in that the mediated

pathways (i.e., student-to-student connectedness) can be examined (Coffman & MacCallum, 2005). Thus, it explores a set of relationships between one or more independent variables, and one or more dependent variables (Hair, Anderson, Tatham, & Black, 1999). In this case it was conducted to parse out specific mediation effects. For this study it was used to determine if student-to-student connectedness mediated the relationships between the communication variables public speaking apprehension, speech anxiety, and communication competence prior to exposure (T¹) to a public speaking course and post exposure (T²) to the course.

RESULTS

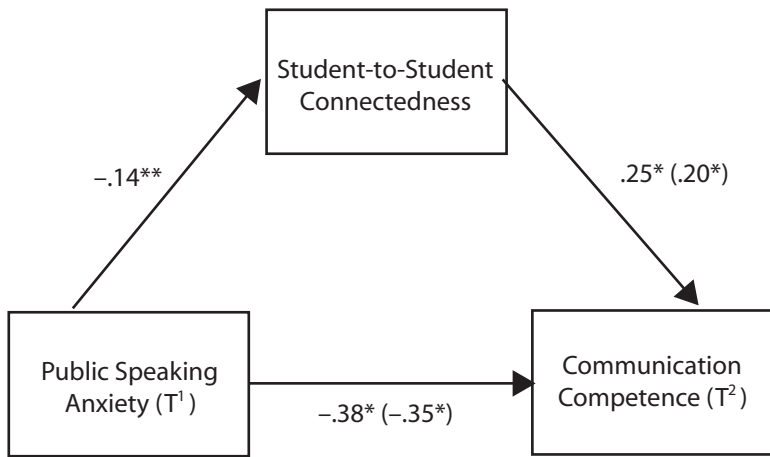
Hypothesis 1a stated that there would be a positive relationship between peer connectedness and change in students' self-reports of public speaking anxiety from T¹ to T². A discrepancy score, subtracting T² public speaking anxiety from T¹ public speaking anxiety ($M = 3.25$, $SD = 6.94$), was created to represent change over time. Results supported H1a, $r = .20$, $p < .005$. Furthermore, a pairwise t test found a significant difference between T¹ public speaking anxiety and T² public speaking anxiety, $t(361) = 8.91$, $p < .0001$. Results indicated that a sense of peer connectedness may reduce students' public speaking anxiety from the start of the semester ($M = 31.72$, $SD = 8.15$) to the end of the semester ($M = 28.48$, $SD = 7.42$).

Hypothesis 1b stated that there would be a positive relationship between peer connectedness and change in students' self-reports of public speaking apprehension

from T¹ to T². Again, a discrepancy score was created subtracting T² public speaking apprehension from T¹ public speaking apprehension ($M = 1.82$, $SD = 4.65$). Results supported H1b, $r = .14$, $p < .05$. Furthermore, a pairwise t test found a significant difference in students' self-report of public speaking apprehension from T¹ to T², $t(331) = 7.12$, $p < .0001$. Overall, a sense of peer connectedness may reduce students' public speaking apprehension from the start of the semester ($M = 18.87$, $SD = 5.16$) to the end of the semester ($M = 17.01$, $SD = 4.80$).

Hypothesis two predicted that there would be a positive relationship between peer connectedness and change in students' self-reports of communication competence from T¹ to T². Again, a discrepancy score was created subtracting T¹ communication competence from T² communication competence ($M = 4.55$, $SD = 10.62$). Results supported H2, $r = .20$, $p < .001$. Moreover, a pairwise t test found a significant difference between T¹ communication competence and T² communication competence, $t(344) = -7.95$, $p < .0001$. Thus, a sense of peer connectedness may help to further enhance students' perceptions of their communication competence from the start of the semester ($M = 79.71$, $SD = 12.87$) to the end of the semester ($M = 84.27$, $SD = 11.14$).

Hypothesis 3a predicted student-to-student connectedness will mediate the association between students' T¹ public speaking anxiety and their T² communication competence (Figure 1). There was a direct association between T¹ public speaking anxiety and student-to-student connectedness ($\beta = -.14$, $p < .05$), as well as between T¹ public speaking anxiety and T² communication competence ($\beta = -.38$, $p < .0001$). However, when student-to-

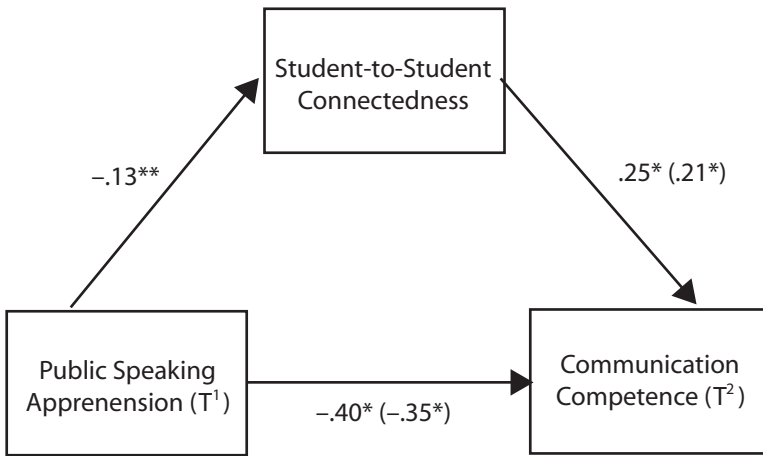


Notes: Mediation model relating public speaking anxiety (T¹), student-to-student connectedness, and communication competence (T²). Values represent standardized regression coefficients. The value inside the parentheses denotes the effect of public speaking anxiety (T¹) on communication competence (T²) with student-to-student connectedness as the mediator. Note. $*p < .0001$, $**p < .05$

Figure 1. Mediation Model: Public Speaking Anxiety

student connectedness was included in the model, the association between T¹ public speaking anxiety and T² communication competence was reduced ($\beta = -.35$, $p < .0001$), and the Sobel test revealed partial mediation ($z = -3.25$, $p < .005$).

Similarly, hypothesis 3b predicted student-to-student connectedness will mediate the association between students' T¹ public speaking apprehension and their T² communication competence (Figure 2). There was a direct association between T¹ public speaking apprehension and student-to-student connectedness ($\beta = -.13$, $p < .05$), as well as between T¹ public speaking ap-



Notes: Mediation model relating public speaking apprehension (T¹), student-to-student connectedness, and communication competence (T²). Values represent standardized regression coefficients. The value inside the parentheses denotes the effect of public speaking apprehension (T¹) on communication competence (T²) with student-to-student connectedness as the mediator. Note. * $p < .0001$, ** $p < .05$

**Figure 2. Mediation Model:
Public Speaking Apprehension**

prehension and T² communication competence ($\beta = -.40$, $p < .0001$). However, when student-to-student connectedness was included in the model, the association between T¹ public speaking apprehension and T² communication competence was reduced ($\beta = -.35$, $p < .0001$), and the Sobel test revealed partial mediation ($z = -3.61$, $p < .0005$). Overall, in public speaking courses, positive perceptions of peer connectedness may temper the relationship between students' anxiety at the start of the

semester and their communication competence at the end of the semester.

DISCUSSION

The Connected Classroom Climate Inventory represents the development of a positive classroom climate through supportive student-to-student communication (Dwyer, et al., 2004). However, scant research has addressed student-to-student interactions in the college classroom (Johnson, 2009). This is surprising, given that the connected classroom climate is strongly associated with positive instructional outcomes. For example, Johnson found that a positive relationship exists between student-to-student connectedness and perceived affective learning. The aim of this study was to determine the impact student-to-student connectedness may have on students' perceptions of their public speaking anxiety, communication apprehension, and communication competence in public speaking courses. Overall, the results indicated student-to-student connectedness may alleviate students' anxiety or apprehension toward public speaking and enhance their perceptions of communication competence over the course of a semester in the public speaking course. Students who perceived a sense of peer connectedness in the classroom experienced decreases in their public speaking anxiety and communication apprehension, as well as an increase in self-perceived communication competence. Therefore, familiarity and acceptance among classroom peers may allow students to become more comfortable communicating in public speaking courses. Students who perceive con-

nectedness in the classroom may have more opportunities to communicate with their peers, which in turn, leads to increases in self-perceived communication competence. Moreover, communication with peers may offer students the opportunity to discover that their audience is more supportive of them than critical. Therefore, positive perceptions of student-to-student connectedness may help reduce students' levels of anxiety and apprehension in public speaking courses.

This study's results emphasize the importance of establishing a safe haven for students in public speaking courses, in which they perceive a sense of connectedness with their peers early on in a semester. Therefore, instructors should provide students time to communicate with one another and develop familiarity with their peers during the initial start of a semester. Likewise, given the importance of connectedness in public speaking courses and its affect on students' learning and perceptions, training in building relationships in the classroom may be essential for the instructors (Frisby & Martin, 2010). Prior research indicated that students may reciprocate instructors' communicative behaviors in the classroom (Frisby & Martin, 2010; Johnson, 2009). If instructors engage in positive, supportive behaviors, such as smiling, students may in turn use similar behaviors with one another in the classroom.

Overall, these outcomes yield several implications for public speaking instructors and students. One implication is the public speaking course should be included in learning communities. Edwards and Walker (2007) found that students who participated in learning communities experienced a reduction in communication apprehension. In a learning community, students typically

take several courses in the fall and spring semesters with the same group of students. Doing so enables students to develop a small community of peers who have an area of common interest (Hotchkiss, Moore, & Pitts, 2006). Learning communities also offer an opportunity for social integration which, in turn, increases the likelihood of retention and academic success (Bean & Eaton, 2001). It may be beneficial to students if public speaking courses were included in learning communities. This inclusion will allow students to develop a sense of peer connectedness before entering their public speaking classrooms. Future research should consider learning communities and the influence of established connectedness among students prior to entering the classroom.

Beyond the traditional classroom setup, researchers also should determine the influence online public speaking courses may have on the development of student-to-student connectedness. As an extension of distance learning, colleges and universities are increasingly offering online courses (Clark & Jones, 2001). Online public speaking courses may create especially difficult challenges for instructors as they try to foster a connected classroom climate. Vanhorn, Pearson, and Child (2008) found that instructors across courses had difficulty transforming face-to-face courses to an online course format. Furthermore, Umphrey and Sherblom (2008) reported computer-mediated communication can reduce the experience of connectedness for students. Yet, many online public speaking courses exist and often use a hybrid course format, in which students only meet face-to-face for presentations (Clark & Jones, 2001). Overall, Clark and Jones found students were attracted to online public speaking courses because they

had to come to campus less frequently. However, in terms of students' communication skills and based on the results of this study, a connected classroom climate is important to the success of students enrolled in public speaking courses. Given the integration of technology into public speaking courses, future research should examine student-to-student connectedness across public speaking course formats (i.e., traditional, hybrid, online) to determine if the course format impedes or facilitates a connected classroom climate.

Future research should also address the interaction between instructors' communicative attributes and student-to-student connectedness and the overall affect they have on student anxiety and communication competence. This study found student-to-student connectedness partially mediated the relationships between T¹ speech anxiety and apprehension and T² communication competence. Positive perceptions of peer connectedness did not completely eradicate students' anxiety or apprehension, therefore future research must also include other classroom variables (e.g., teacher nonverbal immediacy) and consider the combination of peer connectedness and instructor communicative attributes. Johnson (2009) obtained a positive association between perceived instructor nonverbal immediacy and student-to-student connectedness. Frisby and Martin (2010) found perceived rapport with instructors and students was positively associated with student-to-student connectedness. As an extension of current connectedness research, researchers should examine whether instructors' communicative attributes (e.g., humor, responsiveness, relevance, affinity seeking) leads to increases in perceived connectedness over the course of a semester.

Moreover, the Connected Classroom Climate Inventory may serve as a useful assessment tool for researchers and instructors. As a semester progresses this measure can be used to gauge the student-to-student connectedness construct in order to determine whether it changes over time, based on what takes place in the classroom.

In light of these results, limitations must also be considered. First, this study is based on students' self-reports of what happens in the classroom, not necessarily the actual behaviors that occur. Smythe and Hess (2005) found that disagreement exists between students' reports of instructor behaviors in the classroom and trained observer reports. Second, the data used in this study was from the surveys completed at both the beginning and the end of the semester. Students who do not attend class regularly may have different perceptions of connectedness than those students who completed the in-class surveys. It may be useful for future research to use online surveys to allow students the opportunity to complete measures outside of class to determine the association between course attendance and perceptions of student-to-student connectedness. Third, the methodology prohibits any casual statements to be made for this study. However, this study does indicate relationships exist between student-to-student connectedness and the communication attributes public speaking anxiety, communication apprehension, and communication competence. Ultimately, the results obtained in this study suggest that students' perceptions of classroom connectedness can affect their communication abilities. This study's outcomes suggest the change in students' level of communication anxiety and competence over the course of a semester in public speaking

classes were influenced by their positive perceptions of student-to-student connectedness. These findings imply that when students are familiar with each other and accept one another, they are able to become more comfortable with their ability to communicate in the public speaking courses.

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