


2008

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Judy C. Pearson
North Dakota State University

Jeffrey T. Child
Kent State University

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Recommended Citation

Pearson, Judy C. and Child, Jeffrey T. (2008) "The Influence of Biological Sex, Previous Experience, and Preparation Time on Classroom Public Speaking Grades," *Basic Communication Course Annual*: Vol. 20 , Article 9.
Available at: <http://ecommons.udayton.edu/bcca/vol20/iss1/9>

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The Influence of Biological Sex, Previous Experience, and Preparation Time on Classroom Public Speaking Grades*

*Judy C. Pearson
Jeffrey T. Child*

The basic communication course is required on many university campuses, and both students and faculty members remain interested in understanding successful functioning of the course. For students, success is often determined by the academic measure of the grade received. What factors predict public speaking grades? While we may expect that competency measures are linked to grades, alternative and irrational predictors may also exist. Several years ago, biological sex was shown to predict public speaking grades (Pearson, 1980, 1991; Sprague, 1971). These older studies did not account for the relative impact of more rational explanations of grades including previous experience and preparation time. Furthermore, more naturalistic studies of the public speaking process are needed (Pearson, Child, & Kahl, 2006). This study examines whether or not biological sex will account for differences in public speaking grades in a naturalistic speech setting when the effects

* The authors wish to thank and acknowledge Jody L. Mattern (Minnesota State University Moorhead) and Andrea Holl (North Dakota Sate University) for assistance with data coding for the current study.

of total preparation time and previous experience are removed.

LITERATURE REVIEW

Biological Sex

Biological sex has held importance for social scientists for several decades, though the importance of biological sex in explaining human behavior has ebbed and flowed. While researchers in the late twentieth century discounted the variable on the basis of meta-analyses and the amount of variance that could be explained by this characteristic, current researchers have continued to include biological sex in a variety of studies.

Research articles, books, courses, and curriculum continue to focus on biological sex and communication. Contexts include health communication (Roter, Geller, Bernhardt, Larson, & Doksum, 1999; Roter, Hall, Aoki, 2002; Van Den Brink-Muinen, Bensing, & Kerssens, 1998), instructional communication and technology use (Sellnow, Child, & Ahlfeldt, 2005; Yates, 2001), interpersonal and relational communication (Athenstaedt, Haas, & Schwab, 2004; Burleson, 2003), and organizational communication (Foldy, 2006; Ollilainen & Calasanti, 2007). Scholars are committed to further investigation of biological sex differences and communication behavior.

While the role of biological sex remains present, the erstwhile issue of the role of biological sex in predicting basic public speaking grades has not been re-examined nor explored using alternative explanations and models. Surely, other factors account for more variance in public

speaking grades beyond biological sex alone. In this investigation, we explore the role of previous experience with public speaking and speech preparation time in explaining differences in grades. Our quandary is whether biological sex differences will disappear as we control for more rational predictors of public speaking grades.

Overall educational differences and similarities. Males and females have traditionally demonstrated differences in their abilities and achievements. Girls exceed boys in most aspects of verbal ability during the preschool and early school years, and they receive higher grades than boys throughout the school years. However, outside of school, the situation is reversed: men excel on all measures of intellectual achievement (Maccoby & Jacklin, 1974).

Today, the situation is roughly the same. Girls continue to demonstrate greater literacy skills than do boys in early childhood education (Ready, Logerfo, Burkam, & Lee, 2005). Furthermore, women continue to have higher achievement in college than do men (Cook, 2006; Manzo, 2004b). In addition, more women than men now attend college (Manzo, 2004a; Pollitt, 2006; University of Alaska, 2006). The differences between the attainment of females and males in the college classroom are so great and widening so rapidly that some educators have suggested that efforts to close the gap result in wasted time and money (Stewart, 2005). The popular source of such differences in the last two decades has been identified as the brain; however, Newkirk (2005) observes that this conclusion is drawn far away from the neuropsychology lab.

Biological sex and communication. Before the 1960s and 1970s, few researchers placed their investigative lens on the communication between women and men. Some of the earliest work during these two decades originated with psychologists, sociologists, and linguists (e.g., Bem, 1974, 1975; Maccoby & Jacklin, 1974). Communication researchers and teachers followed the lead of these researchers (e.g., Baird & Bradley, 1979; Foss & Foss, 1983, 1989; Shimanoff, 1977).

Communication and gender research in the 1980s came out of two traditions. The first suggested that women were generally muted, silenced, or absent from public discourse (Campbell, 1985; Spitzack & Carter, 1987). The second tradition was that women and men simply communicate differently (Ellis & McCallister, 1980; Talley, Talley, & Peck, 1980). Feminist, rhetorical, and critical scholars advanced the former tradition. Empirical work by social scientists explored the latter tradition.

Women and men are socialized to value and enact different behaviors (Maccoby, 1992). Generally, women have been shown to be better at interpersonal communication, self-disclosure, and intimacy (Parks & Floyd, 1996; Sollie & Leslie, 1994; Wellman, 1992). More recent reports suggest that these differences may be small (Oxley, Dzindolet, & Miller, 2002).

The argument that women are better at interpersonal communication and relational development because of their greater interest in verbalizing thoughts and feelings may be circular (Wood & Inman, 1993). Since women verbalize thoughts and feelings more, women may be perceived as better at relational development as well. Both Sherrod (1989) and Swain (1989)

argue that while men do not engage in as much self-disclosure as do women, they enact relationships in other ways including participating in activities and sharing interests.

Nonetheless, biological sex differences occur in a variety of communicative and psychological domains (Frymier & Houser, 2000). For example, females may have different relationships than males; females report more frequent intimate behaviors than do males (Husong, 2000). Women and men report different personal networks at work (Stackman & Pinder, 1999). Indeed, sex differences appear to occur over the lifespan (Pearson & Van Horn, 2004; Pinguart, 2003).

Canary and Hause (1993) may be the sharpest critics of the findings that indicate significant sex differences. They conducted a meta-analysis of more than 1,200 studies on biological sex and determined only modest differences in communicative behavior and reports of behavior as a result of biological sex differences. Dindia (1998) provides evidence demonstrating that women and men are more similar than different in their communicative behavior. While these critics found significant sex differences, they have argued that on the basis of the small amount of variance explained these differences are not meaningful. However, they do admit that acknowledging stereotypes to understand data is sometimes warranted.

Even though the variance explained by biological sex may not be large, biological sex remains of interest to scholars and teachers. Sex differences continue to be found in communication behavior and perceptions (Frymier & Houser, 2000; Garner, Robertson, & Smith, 1996; Heisler, Bissett, & Buerkel-Rothfuss, 2000; Hib-

bard & Buhrmester, 1998; Martin, 1998; Rong, 1996; Witt, 1997). Communication scholars continue to write textbooks (e.g., Dow & Wood, 2006; Lovaas & Jenkins, 2006; Stewart, Cooper, Stewart, & Friedley, 2003; Wood, 2007) and to develop courses focusing on the influence of biological sex on communicative behavior. Rather than ignoring the influence of biological sex, communication researchers might invest time uncovering factors that account for sex differences, or they may find alternative explanations for sex differences. Biological sex may be masking the influence of other variables. The goal of this study is to examine two such variables.

Performance-based grades. Women received higher grades in public speaking classes in early research (Pearson, 1980, 1991). Pearson suggested two alternative explanations for this finding: compliance or competence. The compliance explanation included discussions of women's greater sensitivity to others, their valuing of communication, and their greater social orientation (Berg & Bass, 1961; Drag & Shaw, 1967).

The competence explanation asserts that women are simply better at public speaking than are men. The verbal ability exhibited by girls in preschool, elementary, and secondary school is similarly evidenced in college. This finding may be true even though women have not been able to achieve the same number of leadership roles as have men (Cox, 1976; Crandall, 1975; Pearson & Trent, 2004; Valian, 2000) nor are they viewed as better public speakers than men beyond the classroom (Campbell, 1985). Though women have been found to receive higher grades on classroom public speeches in the past, current research has not re-examined this assumption.

Public Speaking Grades

Preparation. The amount of time a student spends preparing a speech is positively related to the quality of the presentation (Daly, Vangelisti, & Weber, 1995; Menzel & Carrell, 1994; Pearson, Child, & Kahl, 2006). For example, Menzel and Carrell (1994) videotaped public speaking students giving one speech in an experimental setting and asked the students about their preparation time, past experience with speaking, the anxiety they experience about the speech, general anxiety about communication, and grade point average. They determined that grade point average, total preparation time, number of rehearsals for an audience, and state anxiety all predicted the quality of the speech performance.

Daly, Vangelisti, and Weber (1995) created an experimental situation in which students prepared a speech while “talking aloud” about the process. Students were given 20 minutes to prepare. The study divided the preparation activities into preparation and delivery. Students with high communication apprehension spent more time engaged in activities that limited their effectiveness as speakers. For example, they spent more time finding the “right” word, did more backtracking, showed more concern for topic coverage, and exhibited more nervousness about the speech. They showed less concern about audience adaptation, the availability of audio-visual equipment, and tools that were available to help them prepare. In addition, these researchers determined that while preparation and the quality of a speech performance are related, the relationship between preparation and quality is much smaller when speech anxiety is statistically removed.

Recent scholarship builds on early research about public speaking grades and preparation by engaging in a more naturalistic study of the speech preparation process away from hypothetical laboratory situations (Pearson, Child, & Kahl, 2006). Laboratory exercises engaging in speech writing are limited in the ability to predict speech grades in a naturalistic classroom setting. In such artificial situations, students are not allowed a great deal of time to consider source use, access reference materials, use audiovisual materials, practice delivery of the presentation with peers, spend time between actual work on the speech to think about the topic, and talk with others about the speech. Pearson, Child, and Kahl (2006) found that rehearsing delivery before speeches was the only activity significant as a main effect on public speaking grades over the course of a semester in the way college students used their time to prepare for public speeches.

Experience. Communication competence should increase after people have received instruction and practice in communication. Instruction and practice should improve an individual's motivation and ability to communicate (Pearson & Daniels, 1988). Consequently, a student's prior experience with public speaking, including forensic activities, might predict higher public speaking grades.

Rubin, Graham, and Mignerey (1990) conducted a longitudinal study of college students over a four-year period. They found that, in general, students were increasingly more communicatively competent with progression through college. An exception occurred in the second year of college as competence seemed to decrease. The authors named this phenomenon the "sopho-

more slump,” which they suggest may occur as a result of change and uncertainty experienced by many college students during their second year of school. They also demonstrated that students who were engaged in extracurricular communication experiences were more competent on a number of measures. Consequently, a meaningful relationship is posited between prior speech experience and students’ public speaking grades.

PURPOSE

The purpose of this study is to examine the influence of competency and biological sex on grades in the basic communication course in a naturalistic speech setting. As reviewed, previous research supports that the total speech preparation time and previous public speaking experience are related to greater success in classroom speeches (Rubin, Graham, & Mignerey, 1990). Furthermore, women receive higher public speaking grades in the classroom (Pearson, 1980, 1991; Sprague 1971). While all of these relationships have been proposed and examined individually, no study has examined all of these factors in one study of classroom speech success and thereby determining the relative influence of each factor in a naturalistic speech setting.

When biological sex is introduced and incorporated into a model of speech success, after controlling for preparation time and previous experience, is the explanatory impact of biological sex minimized or eliminated as an explanatory factor of classroom speech success? In other words, if women do receive higher grades, are those grades a result of greater experience with pub-

lic speaking and/or a greater amount of time spent in preparation of them? Can women's higher grades be explained by their experience or their conduct? Thus, the research question of the study examines biological sex differences, while controlling for the biological sex of the instructor, preparation time, and public speaking experience:

RQ: Controlling for the biological sex of the instructor, students' total preparation time, and previous public speaking experience, will women receive higher grades on their speeches than men?

METHOD

Participants

Participants for this study consisted of 95 undergraduate students enrolled in five sections of the fundamentals of public speaking course at a medium-sized Midwestern university. The sample included 48 men (50.5%) and 47 women (49.5%). Sixty-nine students were in their first year of college, 19 were sophomores, three were juniors, and four were seniors.

Procedure

The primary researcher compiled a list of all graduate teaching assistants (GTAs) assigned to teach public speaking during the Spring 2004 semester. The list was stratified by the sex of the instructor, and one male and one female GTA were randomly selected from the list. Both instructors who were randomly selected from the

list agreed to participate in the study. Choosing a male and a female GTA from which to obtain sample participants was employed as a technique in order to minimize grading bias based on the biological sex of the instructor. However, sex of the instructor was included as a control mechanism in the regression equation to eliminate any variance explained in public speaking grades as a result of the sex of the course instructor.

At the institution where the research was conducted, fifty sections of public speaking are available on average for student enrollment each semester. Each instructor teaches two or three sections each semester. The two instructors randomly selected for the study taught five sections, which represented approximately ten percent of public speaking students for the spring 2004 semester.

Students were asked by their instructor to keep track of what they had done, and how much time they had spent, since the previous class session to prepare for the next speech assignment. The journal entries were written and submitted by students during the first ten minutes of each class session. Once students completed journal entries, they placed their response in a large envelope. When all students finished writing, the envelope of responses was sealed, dated, identified by section, and taken to a central office for distribution to the researchers. The only information used for this study was the time increments provided by students. The preparation activities submitted by students were content analyzed and incorporated into another study (see Pearson, Child, & Kahl, 2006) .

Students gained limited participation points for completing the journal entries as one part of the course

requirements. The instructors told students that the completed journal entries were part of a research study and that their responses would not be seen by their own instructor. (The anonymity encouraged honesty among the students.) When journaling, each student was assigned a unique numerical identifier and the numerical identifier was written at the top of each journal entry instead of names to ensure student privacy and confidentiality.

Participants completed journal entries from the time that instructors introduced and discussed a speech assignment in class. Once students completed a speech assignment, journaling did not resume until the next speech assignment was discussed by the instructor. The study generated 2,471 journal, or specific data, entries.

Before conducting any analysis of the data, chi-square tests determined if significant differences occurred in sections by college, student classification (first year, sophomore, junior, or senior), or sex. The reason extensive comparisons between sections were conducted before analyzing any of the data was to address any differences among sections and instructors in the variable measures. The examinations demonstrate that the dispersion pattern of college/major ($\chi^2[28, N = 95] = 36.343, p = .134$) and student classification ($\chi^2[12, N = 95] = 12.801, p = .384$) did not differ significantly from one section to another. Sex did ($\chi^2[4, N = 95] = 9.664, p = .046$), but not when sections were collapsed to the level of instructor ($\chi^2[1, N = 95] = 1.304, p = .254$). The tests allow for each individual public speaking student to be examined as a unit of analysis.

Once the researchers coded all journal entries, they combined the time for each activity in weekly incre-

ments so that they could examine a common unit of analysis or measure of time among the two sections that met on Tuesday and Thursday and the three class sections that met on Monday, Wednesday, and Friday. The research team met as an entire group frequently during the data coding process to address coding issues that the four coders encountered.

Measures

Dependent speech grade average measure. During the fourteen weeks, students gave a total of four speeches. The researchers used the percentages given on the four speeches to compute a total speech grade average for each participant. Overall, participants of the study maintained a B speech grade average, ($M = 86.10$; $SD = 4.44$). The speech grade average variable was normally distributed. The researchers used ANOVAs and t -tests to test the reliability of the dependent speech grade measure by section and instructor. The overall speech grade average of students was not significantly different by section, $F(4, 90) = 1.711$, $p = .154$, nor was it different by instructor, $t(93) = .450$, $p = .654$. Furthermore, preliminary analysis supports that women ($M = 87.75$; $SD = 3.78$) had higher speech grade averages than men ($M = 84.607$; $SD = 4.54$), $t(93) = -3.29$, $p < .0001$.

Prior public speaking experience. Students revealed their prior public speaking experience at the start of the fundamentals of public speaking course. Fifteen students had no previous public speaking experience, 51 students had very little public speaking experience, and 26 students had considerable public speaking experi-

ence. The researchers used ANOVAs and *t*-tests to test the reliability of the independent previous experience measure. Previous speaking experience was not significantly different by section, $F(4, 87) = 0.690, p = .601$, nor by sex, $t(90) = -1.756, p = .082$. Students with a great deal of public speaking experience had higher overall grades ($M = 87.23; SD = 5.10$) than did students with very little ($M = 86.23; SD = 4.45$) or students with no public speaking experience ($M = 84.17; SD = 2.18$) yet preliminary ANOVA analysis did not support that the differences were statistically significant, $F(2, 89) = 2.32, p = .104$.

Overall time spent in preparation. The time indicated for speech preparation activities was recorded in exact minutes from student journals. When students provided a range of time, the average of the range was recorded. For example, if a student indicated preparing 20-30 minutes, 25 minutes was recorded.

A small proportion of students (between five to ten percent of total coded responses) used uncertain time indicators when journaling. The instructors consulted public speaking students directly in a class discussion to understand and code such uncertain time indicators. The two instructors teaching the five sections asked their students at the beginning of one class session what was generally meant by the uncertain time indicators. Students were reminded to provide exact time increments versus using uncertain time indicators after having the discussion about uncertain time indicators. General, rather than specific, individual discussions with particular participants occurred so as to protect the anonymity of students, and yet resolve the issue of uncertain time indicators.

Based on these discussions, students who said they spent “a little bit of time” were coded for ten minutes, “some time” was coded for twenty minutes, “quite a bit of time” or “a lot of time” was coded for thirty minutes, and “an all nighter” was coded for five hours or three-hundred minutes. When the researchers examined the overall time spent on speech preparation, the data were trimmed to eliminate individuals who were more than three standard deviations away from the mean (Hoaglin, Mosteller, & Tukey, 1983).¹

The co-authors and two other coders jointly analyzed 40 journal entries to train coders since students sometimes used uncertain time indicators when journaling about the amount of time spent preparing for their speech. First, the co-authors provided an example of how to code the time increments listed from the journal data in the training session. Then, the four coders independently coded overall time for each student in an entire class session. Finally, the coders determined inter-coder reliability for the time measures before coding the remaining journal entries.

To determine the reliability for the continuous measure of overall time, the researchers computed correlations between each coder’s recorded overall time in

¹ One individual was consistently higher with total time spent preparing for speeches overall than all other participants in the study. While all other participants were well within three standard deviations in total speech preparation time, the one outlier was 7.113 standard deviations away from the mean for total time preparing for speech. The participant was strongly right skewing all of the data results and therefore was eliminated to represent participant averages more accurately.

minutes by participant for a journal entry. An average of all of the correlations between coders became the reliability measure (Neuendorf, 2002). The reliability of time measurement was excellent ($\alpha = .913$). ANOVAs and *t*-tests tested the reliability of the independent time measure by section. Total time spent in preparation of speeches was not significantly different by section, $F(4, 90) = 1.639$, $p = .171$, nor was preparation different by sex, $t(93) = .167$, $p = .868$. Overall time spent in preparation was also a normally distributed measure.

Analysis

Hierarchical multiple regression tested the research question with four steps. First, the biological sex of the instructor was included as the first step in the regression to eliminate any variance in the public speaking grades due to the sex of the instructor. Next, previous public speaking experience was added as a control mechanism in step two. Total preparation time was added in step three of the regression equation as a control. Finally, the biological sex of the student was added at the final step of the regression. Each control variable was entered into the regression with its own step to identify the unique contribution of each control variable. The hierarchical multiple regression determined if after controlling for biological sex of the instructor, previous speaking experience of the student, and total student preparation time if biological sex significantly improved prediction of higher speech grade averages above the prediction provided by competency control measures. The variables of section and sex were dummy variables

coded with ones and zeros for testing in the regression (Tabachnick & Fidell, 2001).

RESULTS

Table 1 displays the correlations between the variables, the unstandardized regression coefficients (B) and intercept, the standardized regression coefficients (β), the semi-partial correlations (sr_i^2), and R , R^2 , and adjusted R^2 after entry of all independent variables, the overall $R = .22$, $F(4, 87) = 6.28$, $p < .01$. After step one, controlling for biological sex of the instructor, the overall $R^2 = .002$, $F(1, 90) = 0.20$, $p = .66$. Thus, biological sex of the instructor was not significantly related to students' speech grade averages. After step two with previous public speaking experience added into the equation, along with biological sex of the instructor, the overall $R^2 = .05$, $\Delta R^2 = .05$, $F_{\text{inc}}(1, 89) = 4.15$, $p < .05$. Students with more experience had significantly higher speech grade averages ($\beta = .212$, $t[91] = 2.04$, $p < .05$). After step three, with total preparation time added to the equation, the overall $R^2 = .10$, $\Delta R^2 = .05$, $F_{\text{inc}}(1, 88) = 4.75$, $p < .05$. Students who spent more time out of class preparing for their speeches had higher speech grade averages ($\beta = .225$, $t[94] = 2.18$, $p < .05$).

The fourth step of the regression examined students' biological sex, controlling for the instructor and competency-based variables, and the overall $R^2 = .224$, $\Delta R^2 = .13$, $F_{\text{inc}}(1, 87) = 14.43$, $p < .01$. Thus, a students' biological sex accounted for an additional 13% unique vari

Table 1
 Hierarchical Multiple Regression of Speech Grade Average
 after the Final Step with All Variables in the Model

Variables	DV	1	2	3	4	B	β	sr ²
1. Biological Sex of the Instructor (step 1)	-.05					-1.07	-.11	.00
2. Public Speaking Experience (step 2)	.22	-.11				.81	.12	.04*
3. Total Preparation Time (step 3)	.23	.16	.06			.01	.25*	.05*
4. Biological Sex of the Student (step 4)	.37	.12	.18	.43		3.26	.37**	.13**
				Intercept = 86.25				
<i>N</i>	95	95	92	95	95		R ² =	.224
Means	86.10	.37	2.12	1224.5	.49		Adj. R ² =	.188
Standard Deviations	4.44	.49	.66	591.25	.50		R =	.473

Note. The sr² value for a hierarchical multiple regression denotes the increase in unique variance explained with the addition of the added variables above and beyond the unique variance explained from the previous steps.

* $p < .05$, ** $p < .01$

ance in public speaking grades ($\beta = .369$, $t[94] = 3.80$, $p < .01$). Women had higher overall speech grade averages ($M = 87.75$; $SD = 3.78$) than did men ($M = 84.607$; $SD = 4.54$) even when controlling for sex of the instructor, previous public speaking experience, and total preparation time (see Table 1). In returning to the research question, results of the hierarchical multiple regression equation demonstrate that competency- and preparation-based measures do, in fact, contribute greater understanding to the students' public speaking grade, yet these measures do not completely eliminate the impact of biological sex differences on public speaking grades.

DISCUSSION AND IMPLICATIONS

This investigation demonstrated that both preparation time and previous experience predict higher grades in the basic communication course. However, biological sex differences occurred, even after removing the effects of prior speaking experience and preparation time. At the same time, the differences that were found in this study cannot be viewed as highly substantial, due to the lack of random selection and random sampling. At best, the data raise questions about the link between sex differences and grades with the set of specific participants.

With this caveat in mind, we can ask why women may continue to receive higher grades in the public speaking classroom than men. We can speculate on four possible explanations and suggest directions for future research:

1. Women are more competent than men as public speakers;

2. Both competence and compliance explain why women receive higher grades;
3. Public speaking classrooms perpetuate a female competency bias; and lastly
4. Additional factors affect the impact of biological sex in predicting higher public speaking grades.

Women Are More Competent than Men as Public Speakers

Communication competence is comprised of achieving one's personal goals and demonstrating sensitivity to the other's goals (Lakey & Canary, 2002). Perhaps female students are more sensitive to the teacher's goals of writing and delivering a well-honed speech. Teachers provide these goals orally in class and in writing. This leads to the conclusion that females are able to grasp the intent of individual speech assignments more clearly than men, translating into enhanced performance ability. This possibility is testable, through cognitive tests about the assignment, and we encourage future research in this area.

Perhaps out-of-classroom behavior is not the only relevant datum in determining competence. Women may be paying more attention in class, taking careful notes about upcoming assignments, and observing successful speakers. Men, on the other hand, may be less observant and more distracted by competing stimuli. Notetaking has been studied in the class (Titsworth, 2001). Although no studies of notetaking have reported sex differences, Titsworth calculated the sex differences

and reported that women wrote about more details in their notes than did men, $t(92) = 2.12, p = .037$ (Personal communication, 2004). Women might be able to demonstrate greater sensitivity toward a teacher's public speaking goals because biological sex differences exist in students' notetaking skills. Thus, women may have the potential to translate detailed in-depth notes into more competent public speaking outcomes.

Second, women might be more competent public speakers due to their relationally-oriented nature. Indeed, Stafford, Dainton, and Haas (2000) found that the single best predictor for relational maintenance strategies was femininity. They note that this result should not be a surprise since femininity is conceptualized as being relationally-oriented. While sex was not operationalized in this study as a psychological gender role, but rather as biological sex, women are more likely to be feminine than are men. Perhaps this femininity translates into being able to conduct deeper audience analysis, include more sincere emotional expression, and connect messages more adequately to diverse audiences. Again, future research could examine this possibility.

Both Competence and Compliance Explain Why Women are Perceived as Better Public Speakers

To conclude that women are naturally more competent is tempting, but another possibility exists. Much of the information presented on competency can also be interpreted as women simply having the ability to provide more compliant classroom behavior. Perhaps women provide more compliant behavior in the classroom setting and are not more competent as public

speakers beyond the classroom. Without access to the intentions behind engaging in preparation activities by men and women, the possibility of greater classroom compliance cannot be eliminated as an explanation for women's greater success as public speakers in the classroom. Compliance should be measured in future research in this area.

Public Speaking Classrooms Perpetuate a Female Bias

The results of this study could be a result of a bias in the public speaking classroom. Perhaps collegiate classrooms, like elementary and secondary classrooms, favor a feminine approach. However, both prior experience and preparation time predicted higher grades. These two logical findings suggest that raters may be unfairly grading their students' speeches.

This unhappy explanation would be consistent with the early work conducted by Pearson (1980) who found that classroom teachers have a positive bias toward females in the classroom. Perhaps women are not superior to men in public speaking at the college level, but their teachers perceive them to be. Why, then, do people perceive them to be poorer public speakers beyond the classroom?

Rater bias may occur in the public speaking classroom (Anderson & Jensen, 2002). Public speaking teachers may be inadvertently grading women higher on their speeches because they are female rather than because their speaking ability is superior. Although Rubin (1999) observed that the principle of identifying criteria before evaluating public speeches has been in place in

our discipline since the turn of the twentieth century, rating errors still occur (Bohn & Bohn, 1985; Stiggins, Backlund, & Bridgeford, 1985). Rater training and rater experience both improve the evaluation process (Anderson & Jensen, 2002; Bohn & Bohn, 1985).

Does the educational arena favor women and feminized views? Competing views exist. Wood and Inman (1993) observed that communication and gender textbooks reinforce the idea that women are more self-disclosive, intimate, and therefore more adept at building and maintaining relational closeness. They argue that men may be similarly strong in relational closeness but that they enact relational closeness through activities rather than words. On the other hand, research on public speaking and business communication textbooks shows that men, rather than women, are more likely to be in a speaking, or superior, role (Gullicks, Pearson, Child, & Schwab, 2005; Hanson, 1999; Pomerence, Varner, & Mallar, 1996).

Additional Factors Affect the Impact of Biological Sex in Predicting Higher Public Speaking Grades

Controlling for additional factors might reduce the observed impact of biological sex in predicting higher public speaking grades. Ayres (1996) found that the amount of time spent in communication-related preparation activities varied for individuals with high versus low communication apprehension. Thus, using overall preparation time as a measure of student competency without also controlling for student communication apprehension might be too simplistic. Incorporating and controlling for an individual's level of communication

apprehension or anxiety is important in further strengthening the competency-based measure in determining outcomes such as grades (Daly, Vangelisti, & Weber, 1995).

The frequency, duration, and cycle of preparation activities is important to consider. Individuals who engage in speech preparation activities for extended periods of time, just prior to giving a speech, will more than likely have a different outcome than those who incorporate an ongoing preparation approach, broken up among several days. The exploration and accounting of such factors in future research might lead to deeper insight for overall preparation differences in terms of competency.

Limitations, Practical Applications, and Future Research

This study sheds some light on the consistent finding that women receive higher grades in the public speaking classroom than men (Pearson, 1980, 1991). We offer caution in overstating this finding. Since social science research focuses on the reporting of differences rather than similarities, research reports like this one may appear to be exaggerating the differences between women and men. Gender differences should not be over-reported (Koerner & Fitzpatrick, 2002). At the same time, significant differences might not be meaningful differences. Statistical issues like effects size and philosophical issues that focus on cultural issues must be taken into account.

This study relies on self-report data. One limitation of self-report data is the possibility of students over-reporting preparation time. However, students probably

over-reported consistently, given the lack of significant differences in total preparation time by section. The self-reports were also collected only twice or three times a week rather than day-by-day. Another method of collecting data would be to use a public speaking daily diary where students would record each time they spent time preparing for speeches. This alternative method might capture the data more realistically, but students might also forget to add entries to the diaries or journals. Ideally, researchers would collect and analyze observational data.

Another limitation of this project was that the sample size is relatively small and caution should be exercised in generalizing the results of the study beyond the sample. This study provides puzzling questions for future research versus definitive answers about biological sex differences, student preparation, and public speaking grades.

What are the practical applications of this research? Should basic course directors structure or facilitate GTA training differently? Should instructors weigh speech grades based on the student's sex? Should the basic course be offered in sex-segregated sections? Probably none of these changes are warranted. The limited nature of this study would only encourage basic course directors to add a unit on bias in grading in GTA training. Differences in biological sex, race, class, and sexuality may influence instructors' grading.

Future research should investigate biological sex differences and public speaking performance with larger and more diverse samples. Future research should also incorporate additional variables when examining students' performance and biological sex, including com-

munication apprehension, unwillingness to communicate, self-esteem, and critical thinking skills. These variables serve as other potential rational predictors of public speaking grade performance and may shed light on biological sex differences in public speaking grades.

This study found incremental increases in performance with each step of the regression model. Previous experience and overall time spent preparing speeches only explained ten percent of the overall variance in public speaking grades. Roughly, the same amount of variance in overall grade was explained in biological sex alone. Should instructors abandon their extensive efforts to encourage students to prepare? Should instructors dramatically reconfigure their classroom activities? This investigation suggests that some revamping is in order. The basic public speaking course is vital because it remains the portal of understanding the communication discipline by the vast majority of students.

Future research in this arena will need to be far more complicated than earlier research. Models must include factors that rationally explain public speaking excellence as well as factors that are less frequently studied, seemingly illogical, or unclear in their relationship to public speaking grades. Coherent factors include how the student feels about communication, how competent they are in related skills such as critical thinking and writing, how motivated they are as measured by attendance and preparation, and how they feel about themselves. Less studied factors include the students' year in school, his or her biological sex, the instructor's biological sex, and the instructor's level of experience.

CONCLUSION

Lucas (1999) describes the basic public speaking course as the “bedrock of the undergraduate curriculum” (p. 75). About 450,000 students enroll in this course each year in the United States (Morreale, Hanna, Berko, & Gibson, 1999; Pearson, Child, & Kahl, 2006). As communication educators, we must continue to try to understand how student differences contribute to different outcomes. We must also be able to explain and predict differences in outcomes. Finally, we need to understand the intended and the unintended messages that students may receive in this course.

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