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ABSTRACT

A study examined the influence of gender upon students' responses to teachers' communication in the classroom by looking at 220 university students' evaluations of teaching assistants' (TAs) communicative competence, effectiveness, and appropriateness, and their satisfaction in communicating with teaching assistants of both genders. Not surprisingly, students ranked best and worst TAs as significantly different from each other in terms of overall communicative competence and in measures of specific competence dimensions of empathy, affiliation and support, behavioral flexibility, and interaction management. No significant gender differences were found for communicative competence ratings of men and women TAs within the best and worst categories. Women students tended to be harsher judges of TAs' communicative competency than men students. This finding, combined with findings that women were significantly less likely than men to be chosen as best TA and significantly more likely to be selected as worst TA, indicate the possible presence of subtle gender biases in the teaching evaluation process. (Contains 5 tables of data and 61 references.) (Author)

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Abstract

This study examined the influence of gender upon students' responses to teachers' communication in the classroom by looking at 220 university students' evaluations of teaching assistants' communicative competence, effectiveness, and appropriateness, and their satisfaction in communicating with teaching assistants of both genders. Not surprisingly, students ranked best and worst TAs as significantly different from each other in terms of overall communicative competence and in measures of specific competence dimensions of empathy, affiliation and support, behavioral flexibility, and interaction management. No significant gender differences were found for communicative competence ratings of men and women TAs within the best and worst categories. Women students tended to be harsher judges of TAs' communicative competency than men students. This finding, combined with findings that women were significantly less likely than men to be chosen as best TA and significantly more likely to be selected as worst TA, indicate the possible presence of subtle gender biases in the teaching evaluation process.

Student evaluations of their instructors' teaching competence serve as key factors in many universities' hiring, promotion, and retention procedures, and influence the pay and promotional opportunities of university instructors at all levels of the academic hierarchy (Sandler, 1991; Cruse, 1987). Yet although they have been widely used for most of the century (McKeachie, 1990), the reliance of university administrators on student evaluations to estimate teaching effectiveness has always been

controversial because of questions about their validity: no one is certain what they measure (Cruse, 1987; Stewart & Roach, 1993).

Critics have charged that student ratings are subject to a great many potential biases unrelated to teaching effectiveness (Cruse, 1987; Wigington, Tollefson, & Rodriguez, 1989; Braskamp, Brandenberg, & Ory, 1984). Among the loudest critics are feminist scholars, who charge that social and institutionally-entrenched sexism affects teaching evaluations, and thereby places women faculty at a significant professional disadvantage in relation to their male colleagues (Sandler, 1991; Wood & Lenze, 1991; Sekaran & Kassner, 1992). However, studies examining gender effects on teaching evaluations have found mixed results: some studies have appeared to support bias charges, whereas others have not (Wigington et al., 1989; Bennett, 1982; Marsh, 1984; Basow & Silberg, 1987).

In viewing the results of these studies from a communication perspective, it appears that one reason for researchers' difficulty in identifying the existence, or lack thereof, of gender bias in student teaching evaluations is the lack of a communication focus in such research. Although most researchers recognize that teaching is essentially a communication process (Marsh, 1984; Nussbaum, 1992), most of the existing studies on gender bias in teaching evaluations have been conducted by educational and social psychologists with little knowledge of communication theory or research findings. As a result, such studies have failed to capture the dynamics by which communication factors influence the quality of classroom interactions, as well as their effects on evaluations of those interactions by participants.

In order to test the usefulness of communication theory in revealing gender biases inherent in the teaching evaluation process, a

study was undertaken to examine undergraduate students' ratings of their graduate teaching assistants' communicative competence. The researchers chose to study communicative competence ratings because of the important role played by communicative competence in the formation and maintenance of satisfactory interpersonal relationships and its centrality to the formation of social evaluations. The study focused on ratings of graduate teaching assistants (TAs) because they are a population for whom teaching evaluations have a particularly strong impact on employment prospects, both in terms of obtaining short-term teaching jobs while they are students and their long-term job prospects for obtaining ladder faculty positions upon graduation.

Gender Bias Effects on Teaching Evaluations

Researchers have found evidence that a number of personal and contextual factors unrelated to teaching behaviors may influence student's ratings of their college instructors. Among these factors are course characteristics such as class size (Cranton & Smith, 1990), academic level (Murray, Rushton, & Paunonen, 1990), subject matter (Marsh, 1984), presentation format (Murray et al., 1990), and the timing of evaluations (Abbott, Wulff, Nyquist, Ropp, & Hess, 1990). Teacher characteristics found to influence ratings include personality traits such as enthusiasm (Foldman, 1986), extraversion (Erdle, Murray, & Rushton, 1985), achievement orientation (Murray et al., 1990), instructor expressiveness (the so-called "Dr. Fox effect") (Ware & Williams, 1980; Abrami, Leventhal, & Perry, 1982); instructor rank (Leventhal et al., 1977; Cranton & Smith, 1990), and instructor's perceived attitude similarity (Abrami & Mizener, 1985). Student characteristics found to influence

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ratings include students' age (e.g., adult learners vs. traditional undergraduates, as in Comadena, 1992), use of implicit theories about correlations between seen and unseen characteristics of professors (Marsh, 1984), and use of general rather than specific judgments of teacher characteristics leading to halo effects (Cadwell & Jenkins, 1985; Cruse, 1987; Cook 1989). None of these findings has been unequivocally supported across multiple studies, however.

Researchers investigating the effects of gender on student ratings have studied ways in which teacher sex and student sex influence evaluation outcomes. Like other researchers investigating biases in teaching evaluations, investigators of gender bias have produced mixed results. Few studies of gender differences in teaching evaluations of professors show clear-cut differences in ratings due to teacher gender alone, and other studies have shown no gender differences in student ratings (Basow & Silberg, 1987). However, some evidence of potential gender bias has been found.

Some studies have found that men and women college instructors may be rated according to different criteria for teaching effectiveness. Student ratings of women faculty have been found to be tied to perceptions of how often they smile and how sociable they are perceived to be, whereas these factors were not related to ratings of male instructors (Kierstead, D'Agostin, & Dill, 1988; Hall, Braunwald & Mroz, 1982). Bennett (1982) found that women teachers were judged to be more professional if they used a highly structured approach in presenting course material, whereas men's professionalism ratings were unaffected by this factor. In this same study, women's credibility in the classroom was

closely tied to the professionalism ratings, as well as to ratings of self-assurance and compellingness. Consistent with these findings, Hall et al. (1982) found that women whose self-presentation in the classroom was traditionally feminine were judged as less competent than women who exhibited fewer gender-traditional behaviors.

Other research indicates that male and female professors may be rated differently according to the same performance criteria. Bennett (1982) found evidence that students hold women instructors to higher standards than men with regard to how much time they are expected to spend in supportive activities: in her study, women instructors were rated as less accessible than men even when they spent more time working with students outside the classroom. Cooper, Stewart, & Gudykunst (1982) found that perceived instructor concern for the student's welfare was the strongest predictor of both women and men instructors' evaluations. However, they also found that men's ratings were closely tied their competence in delivering formal feedback (perceived fairness of grades awarded), whereas women's ratings were related instead to their ability to provide informal feedback reinforcing students' self-concepts (in the form of written evaluations of student performance).

An experiment by Basow & Distenfeld (1985) found that for female teachers, a nonexpressive teaching style led to high ratings, while the same style led to low ratings for male instructors. Wigington, Tollefson, & Rodriguez (1989) found that men teaching upper division classes received higher student evaluation ratings than women professors teaching upper division classes at the same university.

Bennett (1982) found that women teachers were rated as more

effective overall than men, and that this difference was related to the greater perceived warmth and charisma of women instructors in the interpersonal aspects of their teaching (willingness to assist, encouraging expression, and ability to arouse and sustain interest). In line with these findings is research indicating that men who display traditionally male professorial behaviors are rated as scholastically rigorous and intellectually challenging, whereas women professors utilizing similar behavior are rated as rigid and controlling (Sandler, 1991; Basow & Silberg, 1987).

Student sex has also been found to be a potentially important factor in evaluations given to college professors. Basow & Silberg (1987) found a significant teacher sex by student sex interaction on ratings of four dimensions of teaching effectiveness, with male students rating female professors significantly lower than male professors on measures relating to scholarship, organization/clarity, dynamism/enthusiasm, and overall teaching ability. Kaschak (1978) found that men students consistently rated male professors as more effective, concerned, likeable, and excellent than female professors, whereas female students gave men and women professors equivalent ratings on these measures. Winocour, Schoen, & Sirowatka (1989) found that Australian female students preferred affiliative teaching styles over instrumental styles, whereas the male students displayed no preference either way.

In contrast to the above findings is research indicating that gender bias may not be a factor in student evaluations. Bennett (1982) found that men and women received similar ratings from their students on criteria of egalitarianism in interpersonal style (e.g., warmth), personal charisma, self-assurance, and instructional approach. In addition, both Bennett (1982) and

Basow & Silberg (1987) have pointed out that in many studies where gender differences were found, effects sizes were quite small and do not offer strong support for the existence of gender bias.

Part of the difficulty that researchers have had in establishing firm evidence about the existence or nonexistence of such biases may be that few of these studies were informed by communication theory or the findings of communication research (Marsh, 1984; Stewart & Roach, 1993), despite the obvious role that communication plays in the teaching process. Evidence from studies of gender's impact on communication in the college classroom indicate that gender has strong influences on the amount and quality of communication between teachers and students in ways that would be expected to influence teaching evaluations.

Gender and Communication in the College Classroom

Research on communication patterns in schools below and at the university level offer evidence that gender has significant influences on patterns of classroom interaction. A number of studies indicate that instructors use different communication styles with male and female college students. For example, studies have found that college teachers of both sexes call on female students less frequently to answer questions in class (Pearson & West, 1991), make more disparaging comments to women and discourage women from classroom participation (Hall & Sandler, 1982), and provide male students with more opportunities to interact than female students (Sadker & Sadker, 1985). Teachers of both sexes have also been found to present information to students in ways that reinforce stereotypes of male activity and female passivity: male students are more likely to be given instructions on how to complete a task by

themselves, whereas females are more likely to be encouraged to observe a teacher demonstrating the task rather than to perform it themselves (Stewart, Stewart, Friedley & Cooper, 1990).

While both male and female professors engage in communication behaviors that are different in relation to women and men students, there is also evidence that men and women instructors exhibit different teaching styles. In a review of research on gendered talk in the academy, Treichler & Kramarae (1983) cite research findings that women instructors encourage more classroom participation by students than do men, and that men tend to be more direct and women less direct in offering criticism to students.

There is also evidence that teacher and student sex interact in their influences on faculty-student interactions. Brooks (1982) found that male graduate students in mixed-sex classes tended to speak more frequently and for longer turns, and to interrupt female students and their professor more frequently in classes taught by women than in classes taught by male professors. Sandler & Hall (1986) found that female professors experience frequent challenges to their authority and qualifications by male students in ways not experienced by their male colleagues. On the other hand, female students have been shown to be more willing to speak up in a class taught by a female professor than a male (Karp & Yoels, 1976; Pearson & West, 1991). Sandler (1991) found that women students communicate more with women professors, while Pearson & West (1991) found that men students asked more questions in classes taught by men professors than in classes taught by women.

Communication, Gender, and Social Evaluation

Research on communication and social evaluation suggests that gendered communication practices such as those described above may influence students' evaluations of their teachers by means of two factors involved in the communication process: (1) differences in communicative characteristics between men and women speakers, and (2) listeners' sex role stereotypes about what is sex-appropriate behavior. Different communication researchers tend to emphasize one factor over the other in their work. Reviews by Hall (1987), Aries (1987), Smythe (1991), and Haslett (1993) describe the findings of the numerous studies that have addressed both of these factors in various communicative contexts.

Researchers who examine gender differences in evaluation outcomes linked to communication characteristics base their work on evidence that men and women may use somewhat different patterns of communication behavior. Linguists and communication researchers have identified numerous examples of apparent verbal and nonverbal differences in men's and women's conversational styles, including their use of tag questions (Lakoff, 1973), question-asking and backchannelling (Maltz & Borker, 1982; Tannen, 1990), gaze (Mulac, Studley, Wiemann, & Bradac, 1987), and qualifiers (McMillan, Clifton, McGrath, & Gale, 1977). These findings have been used in the development of a "gender as culture" model of communication, which posits that women and men's speech differences contribute to the development of separate male and female value systems, leading to differences in social evaluation of men's and women's communication contributions (Maltz & Borker, 1982; Tannen, 1990).

One line of communication research that illustrates the ways that

sex differences in communicative behaviors may be related to differences in the social evaluations received by men and women communicators is the gender-linked language effect (GLLE) research conducted by Mulac and associates. Studies of the GLLE have found that differences in men's and women's linguistic choices lead to social evaluation outcomes in which women are evaluated as being higher than men on dimensions of socio-intellectual status and aesthetic quality, while men are rated as being more dynamic than women. These findings have been shown to be robust in a variety of conditions, including research with written transcripts (Mulac, Incantero, & James, 1985), television programs (Mulac, Bradac, & Mann, 1985), public speeches (Mulac & Lundell, 1982), and in dyadic interactions (Mulac, Wiemann, Widenmann, & Gibson, 1988).

While research has found that the interpersonal communication styles of men and women may differ in some respects, there is also evidence that, overall, women and men's communication behaviors are more similar than different (Smythe, 1991; Eagly & Johnson, 1990). Yet research has found evidence that even when male and female communicators use similar communication behaviors, the sex-role stereotypes of their listeners may result in different interpretations, and evaluations, of their communicative contributions. Studies by Goldberg (1968) and Paludi & Strayer (1985) found that subjects rate texts purportedly written by men as higher in quality and value, and rate the author as significantly more knowledgeable and professional, than when the identical texts are presented as having been written by women. Paludi & Strayer's study found that while ratings by both men and women subjects showed the same pattern of favoring male authors, men subjects

rated women authors significantly lower than did women subjects.

Gender and Social Evaluation of Communicative Competence

Although sex differences in communication behavior and sex-role stereotypes may influence evaluations of the personal and professional characteristics of communicators, these characteristics do not necessarily have a one-to-one relationship with particular evaluation outcomes. Rather, as research on communicative competence has shown, the nature of the relationship in which the communication encounter occurs has significant effects on how a given communication behavior is interpreted (Wiemann & Kelly, 1981). Sex differences in communicative behavior are unlikely to negatively influence evaluation outcomes unless they violate recipients' expectations about gender-appropriate behaviors. At the same time, recipients' gender-behavior expectations are not invariant across all situations, but are influenced by beliefs about the type of behaviors that should be appropriately exhibited within the relational context (Pavitt, 1989). Thus the communicative behaviors that students consider competent when performed by a male teacher may not be so regarded when exhibited by a female instructor, and vice-versa.

In early work, Wiemann (1977) conceptualized communicative competence in terms of five dimensions: interaction management, empathy, affiliation/support, social relaxation, and behavioral flexibility. While competence has since been shown to be a uni-dimensional construct (Wiemann, 1977; Cegala, 1981; Pavitt, 1989), examining these dimensions separately might be informative about the evaluation process as it relates to the gender of the person being evaluated. In light of existing sex role

stereotypes, it might be reasonably expected that men would be evaluated higher on interaction management and social relaxation--two variables related to control (Wiemann & Bradac, 1989). Similarly, women might be expected to be rated higher than men on empathy, affiliation/support, and behavioral flexibility.

The relationship of perceptions of communicative competence to the sex of communicative partners is not well demonstrated, however. Most studies of competence found no difference related to sex of evaluator (e.g., Wiemann, 1977) or do not report sex differences (e.g. Cegala, 1981; Pavitt, 1989; Spitzberg & Canary, 1985). Also, most research on competence is composed of laboratory studies in which participants are either given a stimulus person to evaluate, or are asked to imagine a partner of a specific type, or are paired with a stranger for a short interaction. It is not clear if gender differences in communicative competence ratings would be manifest if longer-term, naturally occurring relationships were assessed.

In one study that did assess perceived competence in long-term, naturally occurring relationships (students assigned to classroom workgroups for a semester), Reiser and Troost (1986) found no significant differences in how men and women were perceived in terms of behavioral flexibility, affiliation/support, or empathy. The influence of sex of evaluator was not assessed.

In summary, there is evidence that sex of teacher and student may influence student evaluations of their college instructors' teaching effectiveness. There is also evidence that these evaluations may be strongly related to teachers' communication behaviors and students'

assessment of those behaviors. It is also likely that students' expectations about the appropriate nature of teacher-student interactions influences their assessments. Thus examining students' ratings of their teachers' communicative competence may indicate whether students judge their teachers along gender-stereotypical lines to the extent that the validity of student teaching evaluations is called into question.

Research Questions

In light of the above considerations, the study addressed four research questions about the relationship of gender to students' ratings of their teaching assistants' communicative competence. The first two questions dealt with the direct influence of gender on competence ratings:

- RQ1: Are students' ratings of their teaching assistants' communicative competence related to the teaching assistant's sex?**
RQ2: Are students' ratings of teaching assistants' communicative competence related to students' sex?

A third research question addressed the possibility that students' ideas of sex-appropriate behavior affect ratings of their teaching assistants' communicative competence in ways consistent with sex-role stereotypes:

RQ3: Do students differentiate between male and female teaching assistants' communicative competence in terms of interaction management, behavioral flexibility, empathy, social relaxation, or affiliation/support?

A final question addressed the possible influence of gender on global evaluations of TAs' overall performance in the classroom:

RQ4: Are TA and student sex related to selections of "best" and "worst" TA?

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Method

Participants were 220 students in two communication classes at a West Coast university. Three-quarters of the sample (166 students) were drawn from a premajor class on communication methods, while the other 54 subjects were students in an upper-division organizational communication class. The sample included 69 men and 151 women, 86% of whom were communication or pre-communication majors.

Questionnaire responses indicated that 84% of students in the sample had studied with 5 or more teaching assistants during their college careers, with 59% of students reporting having had 11 or more teaching assistants, and nearly 18% reported having had teaching assistants in all or most of their classes.

Questionnaires completed by an additional eight students were not included in the sample due to insufficient experience with teaching assistants (first-term freshmen and respondents who reported having had teaching assistants in only one or two courses), or because they had not completed the demographics section of the questionnaire.

Measurement

Subjects evaluated their "best" and "worst" TA using the 36-item Communicative Competence Scale developed by Wiemann (1977). They were instructed to think of a specific person who they felt was "the best TA you ever had" and another specific person who was "the worst TA you ever had" while completing the scales. It was emphasized that they should focus on only one real person. Order of best/worst presentation was counterbalanced.

In addition to the Communicative Competence Scale, students

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were asked to rate the general effectiveness and appropriateness of their two TAs' communication on a five-point Likert-type scale. Effectiveness and appropriateness are global aspects of competence (Spitzberg & Cupach, 1984; Wiemann, 1977), which subsume a variety of specific behaviors and traits. Since it is possible for messages to be appropriate but not effective and vice-versa, we wanted to assess the possibility that students might distinguish between these global aspects of competence when evaluating their TAs. In addition to these two items, students completed two similar scales rating their satisfaction with their TAs' communication and their satisfaction with their own communication with the TAs.

After filling out the scale items, subjects were asked to complete three open-ended questions stating their reasons for naming their best TA as best, their worst TA as worst, and providing any other comments they wished to make about their experience with TAs. They were then asked to provide demographic information about themselves (gender, age, major, year in school, total number of TAs they had) and information about their experience with teaching assistants (gender of best and worst TA, grade received, liking for course material, TA's department).

Results

Before addressing the research questions, several preliminary analyses were conducted. A MANOVA was calculated to test for effects on the dependent variables due to students' class enrollment or the questionnaire order. Neither of these variables were found to have significant effects, so data from all subjects were analyzed together.

As a manipulation check, dependent samples t-tests were

conducted on the five dependent variables to determine whether subjects rated their best and worst TAs as significantly different on these measures. Significant differences between best and worst TAs were found for all measures at levels below $p < .001$ ($df=219$): overall competence ($t=35.97$), appropriateness ($t=22.58$), effectiveness ($t=30.22$), satisfaction with the TA's communication ($t=38.14$), and satisfaction with own communication ($t=19.55$). Students' best and worst ratings were therefore treated as two between-subjects variables, thus increasing the total N for the analyses to 440.

Previous research findings have suggested that communicative competence is a complex, multi-faceted construct whose various dimensions are highly interrelated (Wiemann, 1977; Cegala, 1981; Pavitt, 1989). To see if this was the case for this data set, a principal components analysis using varimax rotation was run ($Eigenvalue = 1$) on responses to the 36-item overall competence scale in order to identify the presence of variable subsets. Results of the analysis found the items to represent a one-factor solution, a finding consistent with previous studies using the instrument. Therefore, scores on these items were totalled to create a single overall competence score for each subject for analyses addressing Research Questions 1 and 2.

RQ 1 and RQ 2

Research questions 1 and 2 were tested by calculating a MANOVA and univariate ANOVAs examining the effects of best/worst rating, TA gender, and student gender upon the five dependent variables. The results suggest that the sexes of teachers and students were less important factors in determining TA's communicative competence rating

than ranking as best or worst TA.

The MANOVA identified highly significant main effects for best/worst rating on all five variables (multivariate $F[5,427]=316.18$, $\eta^2 = .79$, $p < .001$), with ratings of best TAs significantly higher than those for worst TAs (see Table 1).

Insert Table 1 about here

No significant multivariate effect was found for TA sex, thus offering no indications that students consider teaching assistant's sex when rating their communicative competence characteristics. However, the MANOVA results do suggest that students' sex may influence teaching assistant ratings. Although the multivariate main effect for student sex did not reach statistical significance, results showed significant univariate effects for student gender on ratings of teaching assistants' communicative appropriateness ($F[1, 431]= 4.08$, $p < .05$) and communicative effectiveness ($F[1,431]=5.56$, $p < .05$), with men students generally rating their TAs higher on these measures than did women. No significant differences were found between men's and women's scores on the other three dependent variables.

Small but significant multivariate effects were found for the best/worst rating by student sex interaction effect (multivariate $F[5,427]=3.11$, $\eta^2 = .04$, $p < .01$) (see Table 2). Significant univariate Fs were found for overall communicative competence ($F[1,431]=9.23$, $p < .01$), communicative appropriateness ($F[1,431]=11.59$, $p < .01$), effectiveness ($F[1,431]=6.342$, $p < .05$), and satisfaction with TA's

communication ($F[1,431]=9.00$, $p < .01$). Pairwise comparisons using Tukey's HSD statistic revealed that for all these variables, there were no significant differences found between the ratings that men and women students gave to their best TAs regardless of gender, but that women students gave their worst TAs significantly lower ratings than did male students ($p < .001$).

Insert Table 2 about here

No significant multivariate effect was found for the interaction of best/worst rating and TA sex, but a significant univariate F was found for satisfaction with own communication ($F[1,431]=4.47$, $p < .05$). The pattern of this effect favored women over men TAs: students reported feeling similar levels of satisfaction with their own communication when interacting with their best TA of either gender, but significantly higher satisfaction ($p < .001$) from their interactions with women than with men in the worst TA condition.

No other two-way interactions were found to be statistically significant, nor was the three-way interaction of best/worst rating by student sex by TA sex found to be significant.

In order to rule out the influence of factors besides best/worst ranking and gender in the dependent variable scores, a MANCOVA was calculated to test four covariates for significant impacts on the model. These were: grade received in the TA's course, liking for material, same or different major, and amount of experience with teaching assistants. Results of the MANCOVA were virtually identical to those of the

MANOVA run without the covariates, indicating that these covariates had no significant effects on the dependent variables.

RQ 3

Data analyses for Research Question 3 also supported the conclusion that global best/worst rating is a more important factor in TA ratings than are teaching assistant or student gender. To determine whether students used the same or different criteria for evaluating men and women TAs' communicative competence, a MANOVA was computed for Best/worst rating by TA sex by Student sex using the 6 subscales of the overall communicative competence instrument. Once again, Best/worst rating had significant effects for all 6 subscales (multivariate $F[6,426]=217.91$, eta-squared = .75, $p<.001$) (see Table 3). There were no significant main effects found for student or TA sex.

Insert Table 3 about here

As in the earlier analyses, small but significant effects were found for the multivariate interaction of Best/worst rating by student sex ($F[6,426]=2.19$, eta-squared = .03, $p<.05$) (see Table 4). In addition, significant univariate interactions were found for five of the subscales: competence ($F[1,431]=12.2$, $p=.001$), empathy ($F[1,431]=7.18$, $p<.01$), affiliation and support ($F[1,431]=7.12$, $p<.01$), behavioral flexibility ($F[1,431]=4.18$, $p<.05$), and interaction management ($F[1,431]=5.93$, $p<.05$). The pattern of interactions again showed that best TAs were rated significantly higher than worst TAs by both men and women students. In addition, women students were found to rate their worst TA lower than did

men on the competence and affiliation and support subscales, while no student gender differences in worst TA rating was found for the other three subscales.

Insert Table 4 about here

RQ 4

While gender was found to be less important than best-worst rating in determining competency scores in the analyses for the three research questions, the data did identify a significant gender difference in students' choice of best and worst TA (see Table 5).

Insert Table 5 about here

Significantly more men than women were listed as best TA, and significantly more women than men were cited as worst TA (Chi-square $[1]=18.90$, $p<.001$) by both male and female students. A closer examination of the data reveals that women students were more likely to choose women as their worst TAs and men as their best TAs than were men students, but this difference was not significant (Best TAs: Chi-square $[1]=.53$, $p<.47$; Worst TAs: Chi-square $[1]=3.07$, $p<.08$). While they also chose male TAs as best more frequently than females, men students were equally likely to choose either a man or a woman as worst TA.

Discussion

Results of the study offer little evidence that teacher sex is by itself an important influence on students' evaluations of their TAs' communicative competence. Analyses examining students' evaluations of TAs' global and specific communicative competencies found consistent differences on these measures on the basis of their rating as best or worst TA, but no differences between the scores of women and men who fall in the same rating category.

While there were no significant main effects for student sex found on either global or specific communicative competence measures, significant interactions were found for best/worst rating with student sex. The small effects size of these interactions indicates that they may not be very important to the overall communicative competence ratings process. However, the pattern of findings indicating that women students are harder raters of poor women teachers than are men contradicts the findings of earlier studies in which male students were the harder judges of women's teaching performance (Basow & Silberg, 1987; Kaschak, 1978).

While students' ratings of TA communicative competence did not by themselves offer evidence of gender bias in the teaching evaluation process, two findings of the study did suggest potential gender influences. These were the significant tendency of both men and women students to name a man as their best TA, and for women students to be more likely to pick a woman as their worst TA. Thus it appears that men and women who are considered good TAs receive equally high teacher evaluations, but women appear to have less likelihood of being included in this category. The study's findings therefore suggest that women teachers' teaching

evaluations may suffer overall in comparison to men's due to initial screening considerations which may or may not be related to gender.

Although the findings of this study do not support a definitive conclusion about the existence of gender bias in the teaching evaluation process, they do suggest several avenues for future research addressing this issue. The source of male and female students' apparent preference for male TAs should be explored in more depth to determine whether this is the result of students' sex role stereotypes or an outcome related to gender differences in teaching technique. In addition, researchers looking into possible sources of gender bias in the teaching evaluation process should also examine the relationship of class gender makeup to evaluation outcomes. Since it appears that women students prefer male to female TAs and tend to give lower ratings to their TAs than men students do, it is possible that women who teach classes with a predominantly female student population may receive lower teaching evaluations than men or women teachers in classes with more male students. This also suggests that researchers should investigate whether there may be a student gender factor involved in ratings differences received by teachers across disciplines having varying numbers of male and female students.

Additionally, findings of the study reinforce the importance of studying communication factors that affect the teaching evaluation process. That the study found no significant differences in communicative competence ratings related to TA or student gender is consistent with earlier research findings examining the influence of gender on competence evaluations (Wiemann, 1977; Reiser & Troost, 1986). Competency ratings were related to best-worst TA evaluation in the expected manner,

however. Good TAs were rated significantly higher in communicative competence than poor TAs, indicating that good communication skills are related to perceptions of teaching effectiveness. Thus while there is no evidence of a gender bias in students' perceptions of TAs' communication competence, future research might more closely examine the contribution of specific competence factors to evaluations of teaching effectiveness for both men and women.

It is possible that by asking students to think of their TA in terms of best or worst, students' ratings of communicative competence may have been influenced by halo effects for general TA competency (Cruse, 1987). In other words, students may have been rating their TAs based on an idealized notion of how a good or a bad TA would be expected to communicate with students, rather than on the actual communicative characteristics of the individual being rated. While this may be true to some extent, the anecdotal data about specific TA characteristics supplied by students in open-ended questions indicates that their responses were based on experience with particular TAs and not ideal types.

The findings of this study suggest that university decisionmakers should be cautious in using student teaching evaluations as a cornerstone of their personnel decisions, especially in the hiring of newly-minted Ph.Ds, until questions about gender bias in the rating of TAs are answered more fully. Although not definitive, findings of the study suggest that reliance on TA teaching evaluations may place women applicants at a disadvantage in relation to their male peers on the academic job market. Until the reasons for the discrepancy for students' preference for male over female teachers are found, it is unwise to consider student evaluations as

objective measures of TAs' teaching ability.

The importance of identifying and correcting gender biases in the student teaching evaluation process is increasing as university officials come under growing pressure from state legislators and parents to prove the "value" of their undergraduate education programs (Hay, 1992). Since teaching evaluations are one of the few available quantifiable measures of teaching quality, their role in university personnel decisions seems certain to expand in the foreseeable future. Ensuring that these evaluations measure what is claimed should therefore be a top priority for universities wishing to attract and keep the best academic talent.

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Table 1

Main Effects for Best/Worst T.A. Rating on Five Communicative Competence Variables

| Variable | Best T.A. | | Worst T. A. | | Univariate F |
|-------------------|-----------|-----|-------------|------|--------------|
| | Mean | SD | Mean | SD | |
| Competence | 154.69 | .28 | 91.81 | 1.23 | 431.05*** |
| Appropriateness | 4.45 | .07 | 2.51 | .06 | 828.58*** |
| Effectiveness | 4.58 | .06 | 2.11 | .06 | 1270.08*** |
| T.A. Satisfaction | 4.63 | .06 | 1.84 | .05 | 331.33*** |
| Own Satisfaction | 4.33 | .07 | 2.54 | .07 | 1252.94*** |

Note: The main effect of B/W T.A. rating is associated with a multivariate F (5, 427)=316.18, eta-squared=.72, p<.001.

*** p<.01

Table 2

Interaction Effects for Best/Worst T.A. Rating by Student Sex on Five Communicative Competence Variables

| Variable | <u>Best Teaching Assistant</u> | | | <u>Worst Teaching Assistant</u> | | | Univariate F | |
|-------------------|--------------------------------|------|-----------------------|---------------------------------|------|-----------------------|--------------|---------------------|
| | <u>Male Student</u> | | <u>Female Student</u> | <u>Male Student</u> | | <u>Female Student</u> | | |
| | Mean | SD | Mean | Mean | SD | Mean | | SD |
| Competence | 152.95 ^{ab} | 2.14 | 156.42 ^{cd} | 95.47 ^{acf} | 2.02 | 88.16 ^{baf} | 1.41 | 9.23 ^{**} |
| Appropriateness | 4.38 ^{ab} | .11 | 4.51 ^{cd} | 2.77 ^{acc} | .11 | 2.26 ^{bde} | .07 | 11.59 ^{**} |
| Effectiveness | 4.58 ^{ab} | .10 | 4.59 ^{cd} | 2.32 ^{acc} | .10 | 1.90 ^{bde} | .07 | 6.34 [*] |
| T.A. Satisfaction | 4.57 ^{ab} | .09 | 4.69 ^{cd} | 2.02 ^{acc} | .09 | 1.66 ^{bde} | .06 | 9.00 ^{**} |
| Own Satisfaction | 4.27 | .12 | 4.38 | 2.55 | .11 | 2.53 | .08 | .50 |

Note: The interaction effect of Best/Worst rating by Student Sex is associated with a multivariate $F(5,427)=3.11$, $\eta^2=.04$, $p<.01$.
^{*} $p<.05$; ^{**} $p<.01$; ^{***} $p<.001$
^{abcd} differences significant at $p<.001$; ^edifferences significant at $p<.01$; ^fdifferences significant at $p<.05$ (significant differences marked by the same letter)

Table 3

Main Effects of Best/Worst T.A. Rating on Communicative Competence Subscales

| <u>Subscale</u> | <u>Best T. A</u> | | <u>Worst T. A</u> | | <u>Univariate F</u> |
|---------------------|------------------|-----------|-------------------|-----------|---------------------|
| | <u>Mean</u> | <u>SD</u> | <u>Mean</u> | <u>SD</u> | |
| Competence | 30.49 | .28 | 17.11 | .27 | 1227.23*** |
| Empathy | 29.48 | .30 | 17.93 | .29 | 755.26*** |
| Affiliation/Support | 26.47 | .28 | 14.48 | .27 | 936.87*** |
| Behavioral Flex. | 21.38 | .22 | 12.67 | .21 | 827.86*** |
| Social Relaxation | 20.69 | .24 | 13.55 | .23 | 461.06*** |
| Interaction Mgt.. | 26.18 | .25 | 16.06 | .24 | 861.03*** |

Note: The main effect of Best/Worst rating is associated with a multivariate $F(6,426) = 217.91$, $\eta^2 = .75$, $p < .001$.

*** $p < .001$

Table 4

Interaction Effects for Best/Worst T.A. Rating by Student Sex for Communicative Competence Subscales

| Subscale | <u>Best Teaching Assistant</u> | | | <u>Worst Teaching Assistant</u> | | | Univariate F |
|---------------------|--------------------------------|-----------------------------|-----------|---------------------------------|------------------------------|-----------|--------------|
| | <u>Male Student</u> | <u>Female Student</u> | <u>SD</u> | <u>Male Student</u> | <u>Female Student</u> | <u>SD</u> | |
| Competence | Mean 30.11 ^{ab} | Mean 30.86 ^{cd} | .46 | Mean 18.07 ^{acc} | Mean 16.15 ^{bdc} | .43 | 12.20*** |
| Empathy | 29.02 ^{ab} | 29.95 ^{cd} | .51 | 18.60 ^{ac} | 17.27 ^{bd} | .48 | 7.18** |
| Affiliation/Support | 26.20 ^{ab} | 26.74 ^{cd} | .47 | 15.25 ^{acc} | 13.71 ^{bdc} | .45 | 7.12** |
| Behavioral Flex. | 21.08 ^{ab} | 21.69 ^{cd} | .37 | 12.99 ^{ac} | 12.36 ^{bd} | .34 | 4.18* |
| Social Relaxation | 20.70 | 20.68 | .40 | 13.99 | 13.11 | .38 | 1.68 |
| Interaction Mgt. | 25.85 ^{ab} | 26.51 ^{cd} | .41 | 16.58 ^{ac} | 15.56 ^{bd} | .39 | 5.93* |

Note: The interaction effect of Best/Worst rating by Student Sex is associated with a multivariate $F(6,426)=2.19$, eta-square = .03, $p<.01$.
* $p<.05$; ** $p<.01$; *** $p<.001$

^{abcd} differences significant at $p<.001$; ^a differences significant at $p<.01$

Table 5

Frequency of Student Choices of Best and Worst T.A. by T.A. Sex and Student Sex

| <u>Student Sex</u> | <u>Best Teaching Assistant</u> | | <u>Worst Teaching Assistant</u> | |
|--------------------|--------------------------------|---------------|---------------------------------|---------------|
| | <u>Male</u> | <u>Female</u> | <u>Male</u> | <u>Female</u> |
| Male | 46 | 23 | 35 | 34 |
| Female | 93 | 58 | 58 | 92 |
| Total | 139 | 81 | 93 | 126 |
| | | | | 219 |

Chi-square=18.90, (df=1, p<.001) for the interaction of Best/worst rating with TA sex; Chi-square= 2.76 (df=1, p<.10) for the interaction of Student sex with TA sex; Chi-square=.53 (df=1, p<.47) for the interaction of Student sex and TA sex within the category of Best TA; Chi-square=3.07 (df=1, p<.08) for the interaction of Student sex and TA sex within the category of Worst TA