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Classroom interaction: A study of undergraduate teaching examining the existence of gender bias in freshman English instruction

Crogg, Susan L., Ph.D.

The University of Oklahoma, 1991

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UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

CLASSROOM INTERACTION: A STUDY OF UNDERGRADUATE TEACHING EXAMINING THE EXISTENCE OF GENDER BIAS IN FRESHMAN ENGLISH INSTRUCTION

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

By

SUSAN L. CROGG

Norman, Oklahoma

1991

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CLASSROOM INTERACTION: A STUDY OF UNDERGRADUATE TEACHING

EXAMINING THE EXISTENCE OF GENDER BIAS

IN FRESHMAN ENGLISH INSTRUCTION

A DISSERTATION

APPROVED FOR THE DEPARTMENT OF EDUCATIONAL LEADERSHIP

AND POLICY STUDIES

BY

Signatures of Committee:

Chairman: _____

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Abstract

This study over a four month period of freshman English Composition classrooms provided a data based analysis for determining if the independent variables of (1) Instructor gender and (2) Instructor Gender Communication Quotient affect the quality of teacher-student interaction in the college classroom setting. Five areas of teacher-student interaction are examined (1) frequency of interactions, (2) praise, (3) acceptance, (4) remediation and (5) criticism. A pilot study was done in three classrooms during the pre-study semester.

Thirty-six classrooms of twenty-six freshman students were monitored by three trained observers. All instructor-student interactions in the five categories were coded. Eighteen instructors of both sexes were observed, each instructor gender group (six groups in all) represented a high, medium and low rating on the Sadker Gender Communication Quotient Questionnaire. Coders were not informed as to the Communication Gender Quotient Rating of the instructors observed.

These classrooms were observed three times over the course of the semester during fifty minute periods. The

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INTERSECT Observation Instrument was used by trained observers to code classroom interactions for each observation. Analysis of Variance procedures were used to search for significant differences in between group and within group means within and between cells. The hope of this research is to provide new insight into how interaction occurs in the classroom along gender lines.

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CLASSROOM INTERACTIONS: A STUDY OF UNDERGRADUATE TEACHING EXAMINING THE EXISTENCE OF GENDER BIAS IN FRESHMAN ENGLISH INSTRUCTION

CHAPTER I

THE PROBLEM AND ITS SETTING

Introduction

Eighteen years have elapsed since Title IX became law and dramatic social changes have taken place in American society. Long denied access to many professional and academic roles, women now constitute a significant proportion of the work force in virtually all walks of life. Indeed, women now constitute the majority of college students in America and the number of women faculty in colleges and universities has been rapidly expanding. With all these changes, concerns have arisen that there are still obstacles that place an undue burden on the success of women college students. Little is known about sex equity in college classroom interactions and its effect on the classroom communication climate at the university level (Schwartz, 1980; Rosenfeld & Jarrad, 1985;

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Sadker, Sadker & Klein, 1990). Most of the research concerning sexism in an educational setting has been conducted with elementary school teachers and students (Brophy & Good, 1974; Corrigan, 1974; Flanders, 1970; Good, 1979; Guttentag & Bray, 1977; Sadker & Sadker, 1982; Association of American Colleges, 1984; Serbin, O'Leary, Kent, & Tonick, 1973; Stockard, Schmuck, Kempner, Williams, Edson, & Smith, 1980).

However, limited research supports the assumption that sexism exists in college classrooms as well, affecting the numbers of each sex hired to teach, evaluations of students' work, and the language used in the classroom and during student-faculty interactions (Hall, 1982). This problem is compounded by the fact that so few post-secondary instructors receive training for their jobs as teachers (Schwartz, 1980).

The 1984 Report on Excellence in Undergraduate Education indicates that teacher-student interaction and communication is the major factor in student satisfaction and learning in college. Since development of the student as a person rests to a large extent on the impact of one human being upon an other, education is to be understood in terms of the interaction between teacher and student (Buber, 1970). The classroom climate has been shown to be highly predictive of effective student learning and the social-psychological context in which teacher-student interaction occurs is of central importance in the explanation and prediction of

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educational outcomes (Mackenzie, 1983; Anderson, 1982; Fraser & Fraser, 1982). Climate has been found to influence student cognitive and affective behavior and personal growth (Gellman, 1973; Martin-Reynolds & Reynolds, 1983; Ross, 1981; Sundell, 1972).

The U.S. Civil Rights Commission (1973) asserted that teacher-student interaction is a key component of the educational process. Today there is a growing agreement among researchers that variations in what teachers do in their interactions with students significantly account for differences in student achievement (Mann, 1982).

Furthermore, something is happening during college years which affects women's self esteem. Denny and Arnold of the University of Illinois found that upon entering college, about equal numbers of women and men (over one-fifth in each case) said they regarded themselves as far above average in intelligence. By the time these students became sophomores, 4% of the women and 22% of the men still rated themselves at that level (Hartman, 1990).

In some classroom environments, teachers "may inadvertently communicate to their students limiting preconceptions about appropriate and expected behaviors, abilities, career directions and personal goals which are based on sex role rather than on individual ability and interest" (Kirk, 1982). Such teachers, often perceived as

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sexist or nonegalitarian, make evaluations and assumptions about abilities, personality characteristics, and role behaviors of men and women that reflect stereotypes based on sex-role attributes. These evaluations, now firmly established and relatively unchanging (Broverman, Vogel, Broverman, Clarkson, & Rosenkranz, 1972; Bryant, Crane, Cominsky & Zillman, 1980; Burns, 1977; Deaux & Taynor, 1973; Nowacki & Poe, 1973; Pleck, 1978; Spence & Helmreich, 1972; Stark, Adamec & Graham, 1978; Storms, 1979; Zimet & Zimet 1977) manifest themselves in the individual's differential behavior toward females and males.

For example, faculty members may call on male students more often than female students, interrupt or allow other students to interrupt female responses more than male responses, ask less difficult questions of women than men, give more feedback to men than women, establish eye contact more often with men than with women or attribute female answers to males (Palmore, 1988).

Observation and analysis of classroom interactions have been a major focus of educational research for the past three decades. Flanders and his associates pioneered a system to observe and analyze patterns of verbal interactions occurring within elementary school classrooms (Flanders, 1960; Amidon & Flanders, 1963). These early studies found that in the average classroom, two-thirds of the class time was consumed

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by teacher lecture, direction giving or criticizing (Cohen, 1986). In-depth studies of student outcomes indicated a positive association between student achievement and active classroom participation, teacher's use of praise and questions, and teachers' ability to accept and use student-initiated ideas (Flanders, 1960; Amidon & Flanders, 1961; Schantz, 1963; Hawley, Rosenholtz, Goodstein & Hasselbring, 1984). It would appear that through proper feedback, students learn what is valued (Cohen, 1986). Squires, Huitt, and Segars (1984) have found that positive teacher feedback which praises students for tasks well done is associated with better student outcomes.

This study will focus on classroom communication, most specifically in terms of equitable teacher-student interactions, for both males and females. Although, several studies have been done at the elementary and secondary levels, few studies have addressed the problem of equity at the post-secondary level (Cohen, 1986; Sadker, Sadker & Klein, 1990).

Although postsecondary women today earn approximately half of the bachelor's and master's degrees awarded each year, one-third of the doctoral degrees, and one-quarter of the professional degrees (Long, 1986), some studies have shown that female students are less likely to participate in college classroom discussions and are more likely to be invisible

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members of classrooms (Sadker & Sadker, 1982; Thomas, 1983). At primary and secondary levels, male students receive more teaching attention than female students, thus suggesting that although women graduate from educational institutions with the same credentials, they may not have in fact received the same education as men (Thomas, 1983; Sadker & Sadker, 1988a).

Sadker and Sadker (1980) found that teachers in grades 6 and 8 interact differently with their male and female students in four areas of classroom interaction--Sex Segregation: separation of students on the basis of sex; Classroom Discipline: sex inequities in verbal reprimands, penalties, and other disciplinary actions; Active Teaching Attention: sex inequities in verbal attention during classroom interaction; and Verbal Evaluation: sex inequities in the distribution of praise and criticism of students' academic work. Emerging research in teacher-student interaction and sex bias (Sadker & Sadker, 1982) is demonstrating that when teachers become aware of these inequities in classroom interaction, they can make positive changes in their classrooms and the lives of their students (Long, 1986).

Unfortunately, such inequities are usually unintentional and subtle, "caused by socialization that affects not only teachers but all members of society. Teachers themselves are part of a society where sexism is prevalent" (Minium, 1978).

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Ricks and Pyke (1973) suggest that teachers not only fit the mold of traditional sex roles, but contribute to maintaining traditional expectations of the sexes. It is these predisposed teacher attitudes and expectations about male and female roles which leads to differential treatment of students based on sex (Thomas, 1983; Long, 1986).

The literature suggests that teachers are generally untrained in the skill of interaction and distribute their interactions differently to males and females. Teachers and professors may not be aware of the importance of distributing precise and equitable feedback to their students (Cohen, 1986). While most faculty believe that they treat students in a fair and equitable manner, it is very difficult for teachers at any level to monitor their own behavior and the behavior of their students while at the same time present information, ask questions, evaluate responses, and carry on interactively with students (Cohen, 1986). Thus, analysis of classroom interaction at the postsecondary level is imperative.

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Need for the Study

A portion of the problem of gender achievement disparities appears to be due to low self-esteem, low esteem associated with women's intellectual and analytical ability as viewed by others, and a general lack of knowledge concerning how women should function in a male dominated American University Model (Hartman, 1990; Gilligan, 1988). These factors have generated a series of studies at the college level focusing on: How female and male instructors view female students, what types of communication patterns lead to inclusion and exclusion of groups from classroom activities, and recognition of conduct which either reinforces or degrades student self image (Sadker & Sadker, 1985a; AAUW, 1990; Serbin & O'Leary, 1975b; Gilligan, 1988). This study's purpose is to make a contribution to the quality of faculty-student interaction as affected by student gender.

Statement of the Problem

The purpose of this study is to refine, confirm or disaffirm the findings of previous studies which disagree on: (1) if interaction patterns, present at the primary and secondary levels, (and supported by Karp and Yoels [1976]) which show a decided advantage offered male students to interact more often and more effectively exist in college English Composition classrooms, (2) whether instructor gender

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is an important element in affecting the equity of college classroom interaction patterns and (3) to determine if gender knowledge, as measured by gender quotient rating of faculty on the Gender Communication Questionnaire, affects the level of gender bias, if any, exhibited in the college classroom. The focus of the study is limited to how instructors call on students and how they respond to student comments. In this study five areas of teacher-student interactions will be focused upon: frequency of interactions, praise, acceptance, remediation and criticism.

Research Questions

In conducting this research the purposes are three-fold. The first purpose is to determine to what extent gender bias is in fact present in the university classroom climate. The second purpose is to determine whether gender of the instructor plays a part in the amount and direction of gender bias toward students at the university level. The third purpose is to determine if the gender quotient rating of the instructor affects the amount of gender bias toward students at the university level. The intent is to investigate the relevance of the Gender Quotient Questionnaire for predicting instructor classroom behavior by seeing if it is correlated with gender-biased behavior demonstrated in different reactions to males and females in the classroom.

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Definition of Terms

Frequency

1. Frequency - The frequency by which instructors initiate contact and recognize responses from students in the classroom.

a. Academic Interactions - Interactions of praise, acceptance, remediation and criticism which deal with the content of a student's performance (i.e., intellectual knowledge, cognitive thinking processes and theoretical constructs). Academic interactions are those remarks coded under the categories of "P-I," "A-I," "R-I" and "C-I" (See appendix C for more information on the coding procedure).

b. Non-academic Interactions - Any interactions of praise, acceptance, remediation and criticism which deal with the appearance of academic work and not its content. Non-academic praise, for example, might be, "Frank, your paper really looks neat." Non-academic acceptance could be an affirmation that a paper could be handwritten rather than typed. An example of non-academic remediation could deal with a comment concerning the typing of a paper verses the handwriting of it. "That's a good looking sweater" would also be coded as a non-academic interaction (of praise of a student's personal appearance) "P-App." Non-academic interactions are those remarks coded under the categories of

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"P-C," "A-C," "R-C," and "C-C," (Student Conduct) as well as "P-App," "A-App," "R-App," and "C-App" (Appearance of the student and appearance of student's work) on the INTERSECT coding sheets. This categorization of academic and non-academic interactions was used previously by Thomas (1983) and Long (1986) (See appendix C).

Praise

2. Praise - Verbal or nonverbal comment made by a teacher that explicitly indicates approval, reinforcement and positive evaluation of a student's performance. Examples: "Good job," "You answered the question very well," and "Exactly." Reactions usually not categorized as praise include: "OK," "Yes," "All right," "Right," and "Fine" (unless they are spoken with very positive vocal intonation and nonverbal clues) (Sadker, Bauchner, Sadker & Hergert, 1981).

Acceptance

3. Acceptance - Verbal or nonverbal nonevaluative comment made by a teacher to a student that implies the student's performance was appropriate and correct. However, these comments were not stated clearly and strongly enough to be categorized as praise. Examples: "OK," "Yes," and "I see," or simply instructor silence. (Sadker, Bauchner, Sadker & Hergert, 1981).

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Remediation

4. Remediation - Verbal or nonverbal comment by an instructor implicitly lacking acceptance and suggesting an alternative, more accurate response (Long, 1986). Remediation can be a probing question or a comment encouraging a response from the student. Examples: "What led you to that conclusion?" and "You might want to reread/rethink/reorganize your information to determine whether or not the information supports your conclusions" (Sadker, Bauchner, Sadker, Hergert, 1981).

Criticism

5. Criticism - Verbal or nonverbal comment made by a teacher explicitly stating inaccuracy or inappropriateness of a student's performance or appearance.

a. Academic Criticism - Explicitly negative teacher comments concerning the content of a student's performance (i.e., intellectual knowledge, cognitive thinking processes and theoretical constructs). An academic criticism statement is one in which the teacher clearly tells a student that an academic concept is wrong. Examples: "No," "That is not right," and "That answer is not the answer I am looking for." Academic criticism are those remarks coded under the category of "C-I" on the INTERSECT coding sheets (Sadker, Bauchner, Sadker & Hergert, 1981).

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Remediation

4. Remediation - Verbal or nonverbal comment by an instructor implicitly lacking acceptance and suggesting an alternative, more accurate response (Long, 1986). Remediation can be a probing question or a comment encouraging a response from the student. Examples: "What led you to that conclusion?" and "You might want to reread/rethink/reorganize your information to determine whether or not the information supports your conclusions" (Sadker, Bauchner, Sadker, Hergert, 1981).

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b. Non-Academic Criticism - Criticism which deals with the appearance of academic work and not with its content and any other criticisms which are clearly not expressive of a student's academic abilities. Examples include comments about whether or not a work is typed, how neat in appearance the text is and, generally speaking, comments concerning any task that could be corrected by a typist completing the final draft. "Your paper is late, I won't accept it," would constitute a non-academic criticism since it does not directly comment on a student's academic ability. Included are personal assaults on students. These were considered to be non-academic since the statement is directed more toward the student than to the student's work. Any criticisms about a student's appearance would also fall into this category. Non-academic criticism are those remarks coded under the categories of "C-C," (Criticism of student conduct) and "C-App" (Criticism of the student's appearance or the appearance of a student's work) (Sadker and Sadker, 1986).

Gender Quotient

6. Gender Quotient - Rating on the "Gender Communications Quotient Questionnaire" (GCQ) developed at the Mid-Atlantic Center for Sex Equity located at The American University in Washington, D.C. The Gender Quotient Rating (GQR) was used as a measure of an instructor's gender

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communication knowledge. The correct number of responses given on the GCQ represented the Gender Quotient Rating of the instructor.

INTERSECT

7. INTERSECT - Acronym standing for Interactions for Sex Equity in Classroom Teaching; a coding instrument that uses observations to measure the degree of bias in student-teacher interactions. Frequency of distribution of teachers' responses are coded as praise, acceptance, remediation and criticism.

Climate

8. Climate - "The social/psychological context within which the teacher and student interact and form their relationship" (Best, 1977).

Sex-Biased Communication

9. Sex-Biased Communication - A behavior, statement, or omission that conveys the assumption that the contributions, experiences, and values of one sex are more important than those of the other (Alexander, 1981).

Sex Equity in Classroom Interaction

10. Sex Equity in Classroom Interaction - A pattern of interaction between the teacher and students in class that

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does not consider the sex of the students as a basis for differential treatment.

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CHAPTER II

REVIEW OF THE LITERATURE

General Literature

Some researchers believe gender roles are firmly established by age three and show up in gender reinforced role structures as early as elementary school. These role definitions are reinforced by peer group influence as early as age three (Kleeman, 1971; Serbin & O'Leary, 1975a; Sadker & Sadker, 1985a). As early as third grade it has been found that boys paired with girls or other boys listen least to comments made by girls (Sadker & Sadker, 1986). The youthful environment of males is deemed callous and unaccepting of any female traits, since they are construed as inferior and "sissy" attributes. This phenomenon, if existent, may inhibit female students from contributing in the learning environment. By junior high, female students have been shown to be spending four times as much time listening to instructions during science classes and 25 percent less time handling equipment than male students (AAUW, 1990). Teachers in the school system solidify gender stereotyping by (Eccles & Blumenfeld,

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1985; Sadker & Sadker, 1986; Serbin, Sprafkin, Elman & Doyle, 1982; and Serbin & O'Leary, 1975a):

-assisting boys and not girls in articulating rationale toward problem solving,

-encouraging exploration, daring and spatial reasoning in male students and discouraging these traits in female students,

-ignoring female students with their hands up.

Specific Studies

All of these activities are involved in teaching the "Hidden Curriculum" of gender expectations and social place of students in our classrooms (Sadker & Sadker, 1985a; Serbin, Sprafkin, Elman & Doyle, 1982; Serbin & O'Leary, 1975a; Serbin & O'Leary, 1975b; Serbin, Connor & Iler, 1979; Serbin, Connor & Citron, 1981). Several classroom observations have been carried out in preschool, elementary and secondary schools to look for gender-biased instructional methods which might inhibit student learning (Sadker & Sadker, 1985b; Leinhardt & Seewalk, 1979; Eccles & Blumenfeld, 1985).

Existing literature at all levels of education shows that teachers interact differently with male and female students (Serbin & O'Leary, 1975b; Karp & Yoels, 1976; Sadker & Sadker, 1986; Sadker & Sadker, 1990). Yet what little research that has been done at the post-secondary level represents

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conflicting results. Karp and Yoels (1976) found significantly more questions directed to male vs. female students by male professors. These researchers also found that male students were twice as likely to respond to comments made by a male professor as female students. Karp and Yoels further found more equitable treatment and participation when female instructors taught college-level courses.

Thomas (1983) also found more instructor interactions with male students than female students in elementary, secondary and postsecondary levels. Thomas coded 34 university classrooms using the INTERSECT Observation Instrument. However, he did not find that differences in instructor-student interaction varied by the gender of the instructor. Males received more acceptance than expected and females received less, regardless of instructor gender. Thomas also found that the most common teacher response to student comments and questions was acceptance. Thomas further found that the second most common teacher response was remediation. Males also received more remediation than expected while females received less, regardless of instructor gender. Both of these findings, which demonstrate males receiving more attention in both categories are in line with the Sadker and Sadker (1986) findings. They differ with the Sadkers' (1986) findings in that the Sadkers found a lesser degree of remediation given out to all students. The use of

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teacher praise and criticism was minimal. They occurred so infrequently, the degree of distribution was not determined.

Boersma, Gay, Jones, Morrison and Remick (1981) investigated postsecondary classroom verbal behavior in relation to subject matter, sex of student and sex of instructor and cited remarkably different findings. Although they found that sex of the instructor was an important predictor of student involvement, they concluded that male students interact more with female faculty while female students interact more with male faculty--agreeing with Karp and Yoels (1976) findings that instructor gender was influential--yet disagreeing on its direction of influence and in total opposition with Thomas's (1983) findings of irrelevance of instructor gender toward affecting classroom interaction patterns.

Long (1986) found remarkably different findings from Sadker and Sadker (1986), Karp and Yoels (1976) and Thomas (1983) in that Long found more praise and more criticism levied toward female and male students--directly in opposition to all three studies--yet at insignificant levels. Long found acceptance as the most common response with remediation being the second most common teacher response thus, agreeing with Thomas and the Sadkers on the ranking of acceptance as the number one response and Thomas on remediation being the second most common response. Long's research was part of a grant

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whose purpose was to produce training which would equalize gender biases in college classrooms and the mere notoriety of the research project may have lent undue sensitization to observed faculty.

Cohen (1986) found, in agreement with the Sadkers' (1986) and Thomas (1983), no significant difference in equitable interaction between student genders as sex of the instructor varied. Thomas, the Sadkers, Long, and Cohen used the INTERSECT Observation Instrument to record their findings. Cohen also found a slightly higher proportion of interactions (5% higher) in the four categories of (1) acceptance, (2) praise, (3) remediation and (4) criticism for male vs. female students. However, Cohen's class sizes were considerably smaller (10-12 students per class) than average college classrooms, of thirty students or greater, due to her research being conducted at a college for handicapped students. Cohen's findings of disproportionately higher interactions with male students agree with those of the Sadkers, Thomas and Karp and Yoels--but to a lesser degree. Smaller classrooms--which Cohen used--in themselves, may lend to more equitable instructor and student interactions as increased familiarity becomes an additional variable. Yet Cohen agreed with Thomas's and the Sadkers' findings, that instructor gender had no effect on equitable classroom interaction, thus

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disagreeing with both Karp and Yoels (1976) and Boersma, Gay, Jones, Morrison and Remick (1981).

Since few observational studies have been conducted at the university level, it is difficult to determine whether or not instructors at the college level are exhibiting the same patterns of gender bias as found in pre-school, elementary and high school levels. Tracking, textbook stereotyping, media gender influences, parental expectations of gender roles, and instructor gender role stereotyping (and consequent gender bias communication) are suspected to be involved in the enormous split in professional choices between male and female college students. In 1985 less than 15% of new engineers were women (AAUW, 1990). It is essential to determine the extent to which earlier gender training may be inhibiting over one-half the college population in the country (Thomas, 1983; Sadker & Sadker, 1986).

In order to better understand this phenomenon, it is important to accurately record, code, and track instructor communication techniques with students which may in fact show gender bias stereotyping, career tracking or which may be detrimental to female self-image and academic achievement (Gappa & Pearce, 1980; Sadker & Sadker, 1988b; AAUW, 1990; Eccles & Blumenfeld, 1985; & Gilligan, 1982; 1988).

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Theoretical Framework

According to Stacey, Bereaud, and Daniels (Eds.) (1976); Tavris and Wade (1984); and Sadker and Sadker (1985a) gender bias is a socially transmitted part of our culture which we are bombarded with at an early age and on all fronts. Gender differentiation is staunchly reinforced by gender peer groups from that point on (Froschl & Sprung, 1988; Serbin & O'Leary, 1975a; Serbin & O'Leary, 1975b). Gornick and Moran (Eds.) (1971) state that gender influences are distributed throughout all aspects of our life, and Sadker and Sadker (1985a) further state that teachers and instructors of both sexes have managed to reinforce these stereotypes in their preadolescent and adolescent students. Within these constructs role modeling occurs when young children are cast into "winners and losers" by gender stereotyping (Leinhardt & Seewalk, 1979). Sadker and Sadker (1990), Carelli (1988) and Eccles and Blumenfeld (1985) suggest a possible link between gender viewpoint on communication issues and actual gender related classroom conduct. According to their theory, instructors pass these stereotypical expectations onto their developing students, who then pass them on to the next generation in their classrooms (Gornick & Moran, 1971).

Many kinds of observations of social and individual behavior can be and have been made. Some of these have involved inferred traits or gender needs; others have related

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to perceptions or stereotypes. By the criterion of logic, a theory that takes any of these phenomena as its basic reference event is acceptable (Parsons & Shils, 1951).

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CHAPTER III

METHODOLOGY

Statement of the Problem

The purpose of this study is to refine, confirm or disaffirm the findings of previous studies which disagree on: (1) whether interaction patterns, present at the primary and secondary levels, (and supported by Karp and Yoels [1976]) which show a decided advantage offered male students to interact more often and more effectively exist in college English Composition classrooms, (2) whether instructor gender is an important element in affecting the equity of college classroom interaction patterns and (3) to determine if gender knowledge, as measured by gender quotient rating of faculty on the Gender Communication Questionnaire, affects the level of gender bias, if any, exhibited in the college classroom.

Hypotheses Tested

The following null hypotheses were tested:

Ho (1-5): Gender of student is not significantly related to:

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(1) Frequency of responding to or calling upon students in the classroom.

(2) Frequency of praise given to students in the classroom.

(3) Frequency of acceptance given to students in the classroom.

(4) Frequency of remediation given to students in the classroom.

(5) Frequency of criticism given to students in the classroom.

It is important to note here that student gender is built into all of the coefficients of distribution which represent the dependent variables.

Ho (6-10): Gender of instructor is not significantly related to:

(6) Frequency of responding to or calling upon male and female students in the classroom.

(7) Frequency of praise given to male and female students in the classroom.

(8) Frequency of acceptance given to male and female students in the classroom.

(9) Frequency of remediation given to male and female students in the classroom.

(10) Frequency of criticism given to male and female students in the classroom.

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Ho (11-15): Gender quotient rating of instructor is not significantly related to:

(11) Frequency of responding to or calling upon male and female students in the classroom.

(12) Frequency of praise given to male and female students in the classroom.

(13) Frequency of acceptance given to male and female students in the classroom.

(14) Frequency of remediation given to male and female students in the classroom.

(15) Frequency of criticism given to male and female students in the classroom.

Ho (16-20): Gender of instructor in combination with instructor gender quotient rating is not significantly related to:

(16) Frequency of responding to or calling upon male and female students in the classroom.

(17) Frequency of praise given to male and female students in the classroom.

(18) Frequency of acceptance given to male and female students in the classroom.

(19) Frequency of remediation given to male and female students in the classroom.

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(20) Frequency of criticism given to male and female students in the classroom.

Assumptions

It was necessary to make several assumptions in order to make the study possible. The major assumptions were as follows:

1. It was assumed that the sample of English graduate assistants was a true representation of the larger population of English graduate teaching assistants at the University of Oklahoma. Assistants were randomly chosen from a pool of fifty-four instructors.

2. It was assumed that the accurateness of instructor responses on the "Gender Communication Quotient Questionnaire" was not compromised by masking it with personality indicator and pedagogical questions.

3. Sadker Gender Equity Coding Sheets were accepted on face validity and it was assumed that they would give an accurate representation of faculty-student gender interactions.

Limitations of the Study

The major limitations of the study are outlined as follows:

The sample size of thirty-six English graduate assistants at the University of Oklahoma limits the generalizability of

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the study. There may be some factors of faculty-student interaction unique to this discipline, unique to the institution or unique to Midwestern Universities. Whether or not the interactions would be the same, especially in male dominated disciplines such as science and engineering, cannot be said.

This study is basically quantitative even though some qualitative methods were used in data collection. Its contribution to theory and practice will be as its results lend support or credence to existing and emerging theory and ideas about faculty-student interactions emphasizing the gender of the student.

Subjects

Choice of Populations and Samples

After administration of a self-disclosed Gender Communication Quotient Questionnaire to fifty-four Graduate Assistants, six instructors were chosen from each cell, being randomly selected from the cell populations of highest, middle and lowest scoring assistants by gender. The sample of thirty-six assistants (eighteen male and eighteen female) was then divided into six groups: (1) The six female highest gender-quotient-rated faculty, (2) The six male highest gender-quotient-rated faculty, (3) The six female middle gender-quotient-rated faculty, (4) The six male middle gender-

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quotient-rated faculty, (5) The six female lowest gender-quotient-rated faculty and (6) The six male lowest gender-quotient-rated faculty. The English department was chosen due to the large number of relatively small classes and having a majority of female instructors (58% female). This represented a field which could provide the researcher with an equal number of male and female instructors and a large number of homogeneous classrooms in size and composition. Class sections were determined according to instructors chosen and their assigned class sections.

Data Collection Instrument

The coders used the Observer's Manual for INTERSECT (Interactions for Sex Equity in Classroom Teaching), also developed at the Mid-Atlantic Center for Sex Equity at The American University, to code instructor-student interaction. This instrument contains the "Sadker Gender Equity Coding Sheets developed for INTERSECT" used in this study (Sadker, Bauchner, Sadker, & Hergert, 1981).

New England raters have demonstrated an average inter-coding reliability of 85%, while Washington-Baltimore area inter-coding reliability generally runs higher at about 93% when using INTERSECT coding sheets (Network, 1989). These observation sheets were used and data was quantified and coded in the five areas identified under "statement of the problem":

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frequency of interactions, praise, acceptance, remediation and criticism.

Overall interactions, and overall instructor criticism, were broken down into the subcategories of academic and non-academic interactions. Academic interactions deal with aspects of theoretical knowledge, cognitive thinking and intellectual content (conceptualization). Non-academic interactions deal with aspects of form, appearance of work, and attention to technical details. Academic interactions deal with thinking processes while non-academic interactions deal with aspects of the presentation of knowledge.

Development of Recording Instrument

The INTERSECT Observational Instrument Recording Sheets were modified for use in the English department at a Southwestern University with the assistance of Myra and David Sadker at the American University in Washington, D.C. David Sadker is the director of the Mid-Atlantic Center for Sex Equity. In 1980, they were unanimously selected to receive the American Education Research Association's (AERA) Women Educators' Award for research making the greatest contribution to women and education.

Gender Quotient Rating of Instructors

Gender quotient rating of instructors on gender issues was determined by their scores on the "Gender Communications

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Quotient Questionnaire" (GCQ) (see Appendix C) developed by the Mid-Atlantic Center for Sex Equity located at The American University in Washington, D.C. The purpose of administering this pre-questionnaire was to determine whether or not gender knowledge on issues could affect instructors' attitudes and their teaching practices.

Pre-experimental Procedures

Obtaining Approval/Support for Conducting the Study

The researcher received the approval and support of the Graduate Assistants' Coordinator in the English Department at the University of Oklahoma. Approval from the Institutional Research Bureau was granted without evaluation due to the absence of manipulation of subjects.

Choice of Testing Statistic

As indicated in Chapter I, the concern of this study was to determine whether or not there was a difference in the way female and male college instructors reacted to female and male students during classroom question and answer interactions. Gender and Gender Quotient Rating of the instructor represented the independent variables.

In testing the first five hypotheses, a single-sample t-test was chosen. In testing hypotheses 6 through hypotheses 20, Fisher's two-way analysis of variance technique was chosen

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to determine the significance of difference. In testing the null hypothesis that the population means are equal, the F-test employs a comparison of the between-group's variance and the within-group's variance. For the purposes of this study, the researcher selected the .05 alpha level of significance for accepting or rejecting the study's null hypotheses. The results are identified in Tables I through IX and Graphs 1 and 2.

Independent variables. The independent variables in this study were the sex of the instructor, which was considered to be an assigned variable, and the Gender Quotient Rating of the instructor.

Dependent Variables. Dependent variables included the overall and categoric coefficients of distribution which represent the distribution of overall instructor-student interactions for female and male students; and the proportion of precise and diffuse instructor comments categorized as praise, acceptance, remediation and criticism directed toward female and male students (See p. 36).

Procedure

Three trained observers attended three classroom sessions of each of the classes coded. Thirty-six freshman English composition classes, eighteen with male and eighteen with female instructors--six of each sex in the highest, middle and

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lowest gender-quotient-rated categories, were observed between 6 January 91 and 6 April 1991 to determine whether there were differences in instructors' interactions with female and male students in a classroom situation.

Within the pool of fifty-four graduate assistants, instructors were randomly chosen. Classrooms chosen for observation were matched in academic content and, as closely as possible, in size of student enrollment and gender balance of students. Instructors were told that the study was being done in the hope of improving the quality of instructor-student classroom interaction by observing if and how instructors treat different students differently.

The observers coded interactions using the INTERSECT Observation Instrument. Three fifty minute observations were conducted in each of the 36 classrooms. Thus, a total of 108 coded classroom observations, resulting in teacher-student interactions, comprised the data for the study. Coders completed the National Equity Coding Seminar and tested out at the 85 percent level of proficiency (required for gender coding certification) before beginning the project.

These classrooms were audio-taped, as well, to provide coding backup and a check of the coders' accuracy of recording. Observers had coded for two weeks during winter intersession and demonstrated an eighty-seven percent degree

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of inter-coding reliability prior to the beginning of the experiment.

Following receipt of the coded sheets, coding numbers corresponding to the collection of frequency responses and qualitative indicators in the categories of frequency of recognized student responses, praise, acceptance, remediation and criticism were entered into the computer.

Statistical Calculations

The data were entered into the computer and analyzed to determine the results of the study. The final results of the statistical calculations were used in determining the significance of results (for hypotheses testing) and contingency tables for each item on the coding sheets. Results were used to draw secondary conclusions regarding certain aspects of instructor-student gender interactions.

Hypotheses 1 through 5 were analyzed using a single-sample student's t-test at the .05 alpha level.

Hypotheses 6 Through 20. Hypotheses 6 through 20 were analyzed through a two-way analysis of variance (Instructor Gender x Gender Quotient Rating) procedure at the .05 alpha level. Within group and between group means were compared, through the F-tests, for differences in mean values among the coefficients of distribution for the coded responses: (1) Frequency of calling on or recognizing students in class

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overall, and in overall academic and overall non-academic interactions, (2) Overall frequency of praise given to students for responses given in class, (3) Overall frequency of acceptance given to students by instructors, (4) Overall frequency of remediation given to students by instructors, and (5) Frequency of criticism given to students by instructors overall, and in academic and non-academic categories.

These dependent variables are those variables or factors being affected, or assumed to be affected, by the independent variables of instructor gender and Instructor Gender Quotient Rating. Such factors encompass critical aspects of classroom interaction.

Reorganization of Hypotheses

Hypotheses 1, 6, 11, and 16 (total interactions) have been reorganized into:

(a) Overall Interactions Coefficient: coefficient for all academic and non-academic interactions for praise, acceptance, remediation and criticism.

(b) Overall Academic Interactions Coefficient: coefficient for all academic interactions for praise, acceptance, remediation and criticism.

(c) Overall Non-Academic Interactions Coefficient: coefficient for all non-academic interactions for praise, acceptance, remediation and criticism.

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Hypotheses 5, 10, 15 and 20 (overall criticism) have been reorganized into:

(a) Overall Criticism Coefficient: coefficient for all interactions involving instructor criticism.

(b) Academic Criticism Coefficient: coefficient for all interactions involving instructor academic criticism.

(c) Non-Academic Criticism Coefficient: coefficient for all interactions involving instructor non-academic criticism.

Calculation of Coefficients of Distribution

The following example illustrates the calculation of the coefficients of distribution for the dependent variables (Cohen, 1986):

1. Use the total number of students observed in the class, 12 students.
2. Use the total number of males and females observed (six of each).
3. Use the percentage that males and females represent of total students being observed (fifty-percent for each gender). This yields the proportion of students being observed by sex, or the expected proportion of interactions for each sex; for example 6/12 = .50 (expected interactions for males), 6/12 = .50 (expected interactions for females).

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4. Count the total number of interactions for the category being examined; for example, the teacher criticized students ten times.
5. Count the total number of times teacher criticism was directed at females; then count the total number of times teacher criticism was directed at males; for example, the teacher criticized males six times and females four times.
6. Divide the number of criticisms for males by the total number of contacts for all students: This will yield the actual proportion of interaction for males. For example, 6/10 = .60 (actual criticism males received).
7. Compare the results in step 3 (the expected percentage of .50) with the results in step 6 (the actual percentage of .60) by subtracting expected from the actual. The difference between the two is called the coefficient of distribution. If the coefficient of distribution is negative, that sex is receiving less attention than expected. Example: +.60 actual male criticism, minus +.50 expected male criticism = +.10 more male criticism than expected given the number of males being observed.

All calculations of coefficients of distribution were based on the male gender. If the coefficient of distribution

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was positive, then males were receiving more attention (and females less attention) than expected given their representation in the classroom; if it was negative, then females were receiving more attention (and males less attention) than expected. The coefficient of distribution for the male gender is the negative of the coefficient of distribution for the female gender and vice versa.

The above mathematical steps represent the manner in which the coefficients of distribution, averaged across the three observations per class, were calculated for total interactions as well as the interactions for the four types of teacher responses.

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CHAPTER IV

RESULTS

General Results

The major purpose of this study was to shed more light on the direction and degree of gender equality of instructor responses at the post-secondary level. Other purposes of this study were to test whether gender knowledge, which contributes to the formation of gender attitudes, and instructor gender were related to instructor gender equality in the classroom. Table I below contains the frequency and breakdown of classes observed by gender of student and gender of instructor.

Relationships were examined between instructor gender and gender attitude regarding the following variables: overall coefficient of interaction, coefficient of praise, coefficient of acceptance, coefficient of remediation and the coefficient of criticism. Coefficients for overall total interactions and overall criticism were also examined in the subcategories of instructor behavior during intellectual (or academic) and non-intellectual (or non-academic) interactions.

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The table below describes classroom sizes (for male and female instructors) and gender composition of classrooms observed.

TABLE I
Student Gender Distribution of Classrooms Observed

# of	Male Instructor			# of	Female Instructor		
Classes	M. Student	F. Student	T	Classes	M. Student	F. Student	T
7	7	8	15	6	7	6	13
5	8	7	15	4	7	9	16
4	11	8	19	5	10	11	21
3	8	4	12	3	5	10	15
3	11	7	18	4	11	5	16
3	8	5	13	2	12	6	18
3	9	6	15	3	8	7	15
3	12	7	19	3	4	6	10
2	10	6	16	3	8	8	16
2	9	8	17	3	14	6	20
2	9	9	18	3	11	8	19
1	4	8	12	3	6	13	19
2	6	5	11	3	8	12	20
1	5	8	13	3	6	12	18
1	4	9	13	2	9	7	16
2	8	8	16	1	7	7	14
1	4	7	11	1	8	10	18
1	11	6	17	1	9	8	17
2	9	5	14	1	7	10	17
1	8	6	14				
1	11	5	16				
1	7	7	14				
1	9	7	16				
1	12	8	20				
1	10	10	20				

T represents the total number of students in the classroom.

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Research Questions

Results Based on Gender of Student:

Hypotheses 1 through 5

1. Frequency of calling upon or responding to students. Hypothesis 1 was supported. Overall differences were not significant at the .05 level (See Table II), however, when the subcategories of academic interactions vs. non-academic interactions were examined, the males did receive significantly more non-academic interactions (p=.009). Non-academic interactions are those which focus on personal commentary and details of form and presentation.
2. Hypotheses 2, 3, and 4, dealing with praise, acceptance, and remediation, were supported at the .05 level. Although there was a tendency for males to receive more praise, acceptance, and remediation, the differences were not significant (See Table II).
3. Hypothesis 5, which dealt with criticism, was not supported. Males received significantly more overall criticism than females ($p < .05$). However, when the subcategories of academic criticism vs. non-academic criticism were examined, for both variables the differences were not significant.

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TABLE II
STUDENT'S t-TEST TABLE
Coefficients of Distribution for Dependent Variables
When only Varying Student Gender

Category	Mean	Std Dev	t value
Total Interactions	5.490	16.64	1.979
Total Academic	3.370	18.96	1.067
Total Non-Academic	7.670	16.85	**2.733
Total Criticism	14.970	35.91	*2.084
Academic	11.090	38.12	1.425
Non-Academic	12.516	34.96	1.089
Praise	2.190	26.49	0.370
Acceptance	4.720	20.20	1.400
Remediation	0.048	29.25	0.008

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

Overall interactions coefficients. Although not significant, for total instructor interactions, male students received 5.49% more attention than female students, as compared to their representation in class. For overall academic interactions, male students received slightly more (3.37%) attention as compared to their representation in class. For non-academic interactions, (the only significant total result, p=.009) male students received 7.67% more attention, as compared to their representation in class.

Categoric interactions coefficients. The hypotheses relating to praise, remediation, and acceptance were examined and no significant differences were found. However, in every

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category of student interaction, with the exception of remediation, male students received more instructor attention and females less, as compared to their representation in class. In the categories of overall praise and acceptance, male students received slightly more instructor attention and females less than their representation in class; however, none of these results was significant.

Subcategoric criticism coefficients. Male students received significantly more overall criticism than their representation in class ($p < .05$), while females received less. Neither academic nor non-academic criticism proved statistically significant. Although neither of the subcategories (academic and non-academic) for the variable of criticism showed significant gender differences, males received 11.09% more academic criticism than females as compared to their representation in class. Also, in the subcategory of non-academic criticism males received 12.52% more attention than females as compared to their representation in class. When these two sub-categories are combined into overall criticism, the difference is significant.

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Results Based on Gender of Instructor:

Hypotheses 6 through 10

TABLE III

Individual Observer Ratings

	Obs. 1	Obs .2	Obs. 3	Mean
Female Instructor				
Freq. of calling/respond.	2.56	2.89	2.65	2.70
Academic frequency	0.01	0.04	0.04	0.03
Non-academic frequency	7.81	8.26	8.02	8.03
Frequency of praise	6.89	8.65	8.15	7.89
Frequency of acceptance	0.20	0.38	0.05	0.21
Frequency of remediation	- 2.71	- 2.12	- 2.40	- 2.41
Frequency of criticism	32.12	30.45	33.80	32.22
Academic criticism	37.26	35.82	37.59	36.89
Non-academic criticism	14.75	14.75	15.56	15.02
Male Instructor				
Freq. of calling/respond.	7.55	9.15	8.14	8.28
Academic frequency	6.15	7.85	6.22	6.74
Non-academic frequency	7.24	6.85	7.84	7.31
Frequency of praise	- 5.05	- 4.69	- 4.59	- 4.78
Frequency of acceptance	8.86	10.21	8.59	9.22
Frequency of remediation	2.74	3.09	2.36	2.73
Frequency of criticism	- 0.75	- 0.98	- 1.16	- 0.96
Academic criticism	- 9.68	-10.24	-12.30	-10.74
Non-academic criticism	7.08	7.22	8.89	7.73

1. Frequency of calling upon or responding to students. Hypothesis 6 was supported; differences were not significant at the .05 level (See Table IV). When the subcategories of academic interactions vs. non-academic interactions were examined, there were no significant results ($p > .05$).

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2. Hypotheses 7, 8, and 9, dealing with praise, acceptance, and remediation were supported at the .05 level.

3. Hypothesis 10, which dealt with criticism, was not supported. The distribution of overall criticism was affected by instructor gender (p=.0037). Academic criticism proved significant (p =.0015). Non-academic criticism was not significant at the .05 level.

TABLE IV
Table of Means and Standard Deviations
for Dependent Variables
When Instructor Gender Alone is Varied

	Means		Std Dev	
	Instructor Gender		Instructor Gender	
Category	Male	Female	Male	Female
Total Interactions	8.275	2.700	15.430	17.760
Total Academic	6.739	0.004	16.450	21.110
Total Non-Academic	7.314	8.033	15.790	18.300
*Total Criticism	- 0.964	32.220	39.710	21.640
* Academic	-10.738	36.891	38.514	14.506
Non-Academic	8.760	15.020	21.067	43.754
Praise	- 4.778	7.895	29.227	23.878
Acceptance	9.220	0.208	19.732	20.201
Remediation	2.727	- 2.407	24.650	33.844

*Significant Result p < .01

Overall interactions coefficients. No significant differences were found in instructor total interactions at the .05 level. Overall, however, male instructors did interact 8.27% more with male students than their representation in class. In total academic concerns, male instructors

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interacted 6.74% more with male students than their representation in class (although this result was not significant at the .05 level). Overall, female instructors interacted almost equally among males and females with an overall coefficient of distribution of 2.70 for total interactions. In total academic interactions, female instructors interacted virtually identically with both male and female students.

Categoric interactions coefficients. Although male instructors expressed acceptance to male students 9.22% more than their representation in class, these differences were not significant at the .05 level. Female instructors interacted in acceptance virtually identically with both male and female students. Differences in praise and remediation were not significant at the .05 level. Although male students received more praise overall, male instructors tended to praise female students more and female instructors tended to praise male students more. Remediation was virtually identical and evenly distributed among both genders of students by both genders of instructors. None of these results was significant at the .05 level.

Subcategoric criticism coefficients. The only significant results were in the category of criticism, and in the subcategory of academic criticism. Total instructor criticism proved significant for instructor gender ($p = .0037$).

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Female instructors criticized male students, overall, 32.2% more than their representation in class. Even though male instructors criticized, overall, both genders virtually identically; when academic and non-academic criticism were analyzed separately, male instructors criticized female students (academically) 11% more than their representation in class. These main effects for overall and academic criticism cannot be interpreted in isolation from the impact of the interaction of instructor gender and instructor gender quotient rating (which proved significant [p=.037]). The impact of instructor gender needs to be examined across the various levels of instructor gender quotient rating. The analysis of variance results are shown in Table V below.

TABLE V

ANOVA TABLE
Coefficient of Distribution for Total Criticism
(Interaction of Instructor Gender and
Gender Quotient Rating)

Source	df	MS	F
Between Subjects			
Instructor Gender	1	9405.7395	**10.98
Rank	2	454.4537	0.53
Gender and Rank	2	3388.7252	* 3.95
Within Subjects	19	856.9714	

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

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Instructor gender was a significant factor (p=.0015) in the quantity of instructor academic criticism. Female instructors academically criticized male students 37% more than their representation in class. For academic criticism, instructor gender proved to be the only significant factor. The analysis of variance results are shown in Table VI below.

TABLE VI

ANOVA TABLE
Coefficient of Distribution for Academic Criticism
When Varying Instructor Gender

Source	df	MS	F
Between Subjects			
Instructor Gender	1	13219.1226	*13.95
Rank	2	270.7296	0.29
Gender and Rank	2	1238.2671	1.31
Within Subjects	18	947.8616	

* p < .01

Results Based on Gender Quotient Rating of Instructor:

Hypotheses 11 through 15

1. Frequency of calling upon or responding to students. Hypothesis 11 was supported; differences were not significant at the .05 level (See Table VII). When the subcategories of academic interactions vs. non-academic

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interactions were examined, differences were not significant at the .05 level.

2. Hypotheses 12, 13, and 14, dealing with praise, acceptance, and remediation were supported at the .05 level.

3. Hypothesis 15, which dealt with criticism, was supported, overall, and in both academic and non-academic interactions.

TABLE VII
Table of Means and Standard Deviations
for Dependent Variables
When Instructor Gender Quotient Rating Alone is Varied*

	Means			Standard Deviations		
	Instructor GQR			Instructor GQR		
Category	1	2	3	1	2	3
Total Interactions	5.3	4.8	6.4	13.5	20.4	16.7
Total Academic	3.1	4.9	2.1	18.2	21.6	18.6
Total Non-Academic	9.7	4.6	8.7	13.5	15.4	21.6
Total Criticism	14.2	9.7	19.3	38.1	47.4	27.7
Academic	5.9	13.9	12.0	41.0	45.4	33.9
Non-Academic	26.5	19.0	- 3.9	23.1	28.5	47.1
Praise	8.2	-10.6	9.8	31.0	27.8	18.8
Acceptance	4.7	4.5	4.9	22.3	21.5	18.5
Remediation	- 6.7	9.9	- 3.5	34.8	32.1	17.8

* no significant results

Gender Quotient Rating 3 is the highest category of instructor gender knowledge and Gender Quotient Rating 1 is the lowest category of instructor gender knowledge. There were no statistically significant results from the analysis of

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the main effect of instructor gender quotient rating and classroom conduct.

TABLE VIII

Mean Observer Ratings By Gender Quotient of Instructor

	Frequency	Praise	Acceptance	Remediation	Criticism
High					
Female	4.875	16.036	3.077	0.263	17.767
Male	7.850	1.533	6.752	- 8.485	20.317
Medium					
Female	3.408	- 0.340	3.111	9.832	43.417
Male	6.117	-24.200	5.915	10.056	-35.311
Low					
Female	- 0.183	8.022	- 5.562	-17.317	35.475
Male	10.858	8.333	14.995	3.806	- 7.125

Overall interactions coefficients. In total instructor interactions there were no significant results. The hypothesis test results for hypothesis 11 were insignificant at the .05 level.

Categoric interactions coefficients. The hypotheses tests' results were insignificant for hypotheses 12, 13, and 14, which dealt with praise, acceptance, and remediation at the .05 level.

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Subcategoric criticism coefficients. Hypothesis 15 which dealt with criticism was supported. The subcategories of academic and non-academic criticism also proved insignificant at the .05 alpha level.

Results Based on Interaction of Instructor Gender and Instructor Gender Quotient Rating: Hypotheses 16 through 20

1. Frequency of calling upon or responding to students. Hypothesis 16 was supported; differences were not significant at the .05 level (See Table IX). When the subcategories of academic interactions vs. non-academic interactions were examined, differences were not significant.
2. Hypotheses 17, 18, and 19, dealing with praise, acceptance, and remediation were supported at the .05 level.
3. Hypothesis 20, which dealt with criticism, was not supported. Males received significantly more overall criticism than females (p=.037). However, when the subcategories of academic criticism vs. non-academic criticism were examined, the differences were not significant.

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Hypotheses 16 through 20 analyzed the above coefficients (representing the dependent variables) when instructor gender and instructor gender quotient rating were taken in combination.

Overall interactions coefficients. Hypothesis 16 was supported for total instructor interactions as well as in the subcategories of overall academic and overall non-academic interactions (at the .05 level).

Categoric interactions coefficients. Hypotheses 17, 18, and 19, which dealt with praise, acceptance, and remediation were supported, there being no differences at the .05 level.

Subcategoric criticism coefficients. The interaction between instructor gender and instructor gender quotient rating was significant for the category of overall criticism, hypothesis 20 ($p=.037$; See Table V). The impact of instructor gender varied significantly as the gender quotient rating of instructors varied (See Table IX). For both subcategories of academic criticism and non-academic criticism, differences were not significant at the .05 level.

Means and standard deviations for all interactions are shown in Table IX below.

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TABLE IX
Table of Means and Standard Deviations
for Dependent Variables
When Instructor Gender & Gender Quotient Rating Vary

Female Instructors

	Means			Standard Deviations		
	Instructor GQR			Instructor GQR		
Category	1	2	3	1	2	3
Total Interactions	- 0.2	3.4	4.9	10.4	27.3	14.3
Total Academic	- 6.7	4.1	2.7	14.7	28.7	19.8
Total Non-Academic	16.2	2.2	5.7	14.5	20.0	19.9
*Total Criticism	35.5	43.4	17.7	14.5	10.1	30.7
Academic	32.0	43.4	31.2	21.2	8.6	17.9
Non-Academic	38.9	31.5	-25.4	11.4	26.2	61.7
Praise	8.0	- 0.3	16.0	39.3	20.5	16.5
Acceptance	- 5.6	3.1	3.1	13.5	28.9	17.7
Remediation	-17.3	9.9	0.3	41.6	38.9	21.2

Male Instructors

	Means			Standard Deviations		
	Instructor GQR			Instructor GQR		
Category	1	2	3	1	2	3
Total Interactions	10.9	6.1	7.9	14.9	12.9	20.2
Total Academic	12.9	5.8	1.5	16.7	14.1	19.1
Total Non-Academic	3.2	7.1	11.7	9.3	10.4	24.7
*Total Criticism	- 7.1	-35.3	20.3	44.4	35.6	28.5
Academic	- 7.2	-35.3	- 0.9	44.4	35.6	37.2
Non-Academic	1.5	- 6.0	19.8	-	-	31.5
Praise	8.3	-24.2	1.5	29.1	34.8	21.8
Acceptance	14.9	5.9	6.8	25.6	13.2	20.8
Remediation	3.8	10.0	- 8.5	28.4	29.7	14.3

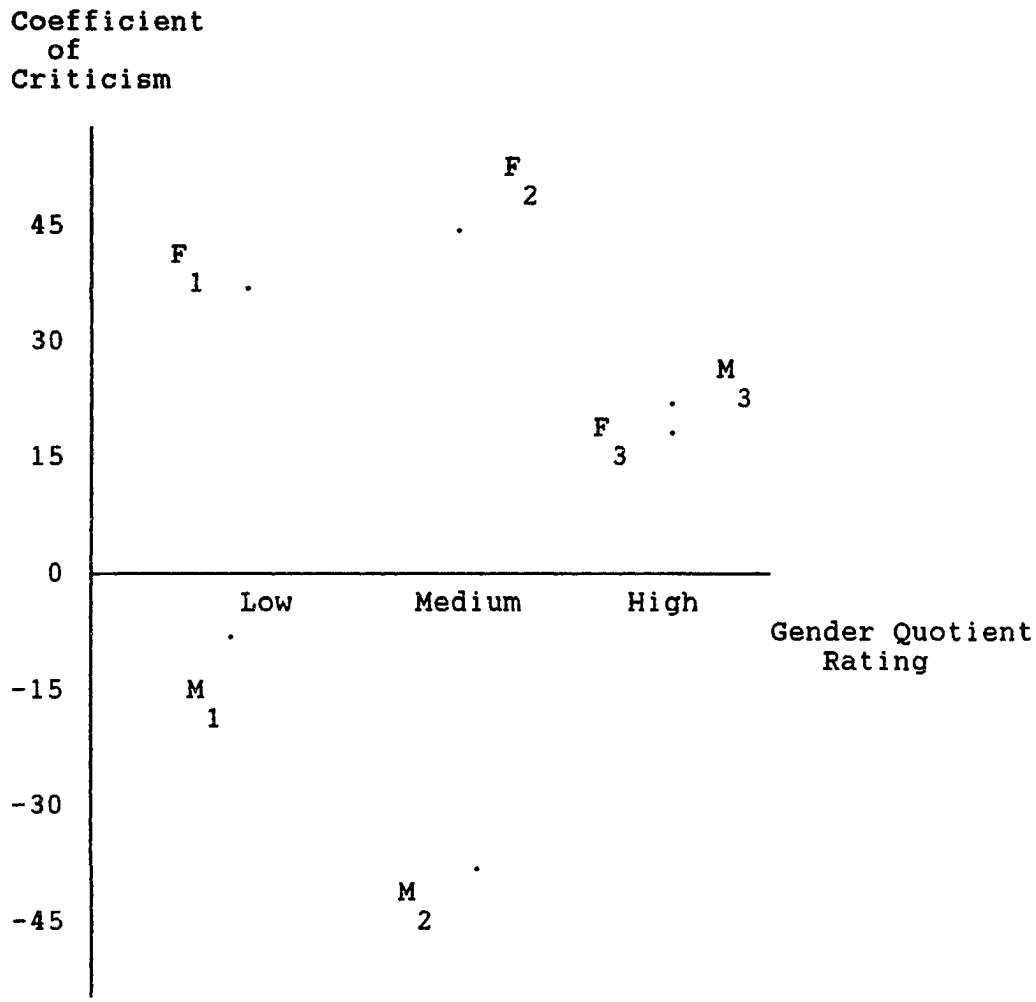
- insufficient number of interactions to calculate
* $p < .05$

Results for the interaction of instructor gender and gender quotient rating for the variable of total instructor criticism are illustrated in Graph 1 below.

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Graph 1

Total Instructor Criticism



M 1 indicates the mean coefficient value for male instructors in the lowest gender quotient rating category. Positive values represent an over-representation of attention given to male students and negative values represent an over-representation of attention given to female students.

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Description of the Results for Total Instructor Criticism

At low levels of instructor gender knowledge, male instructors criticized female students somewhat more than male students while female instructors criticized male students much more than female students, as compared to their representation in class ($p=.037$). For example in a classroom of 7 male and 7 female students, one female instructor criticized male students 12 times (74% of the total criticism) and female students 4 times (25% of the total criticism). Likewise, in a classroom of 7 male and 7 female students, one male instructor criticized male students 4 times (40% of the time) and female students 6 times (60% of the time).

At intermediate levels of gender knowledge, male instructors criticized female students much more than male students while female instructors criticized male students much more than female students, as compared to their representation in class ($p=.037$).

At high levels of gender knowledge both male and female instructors criticized male students more than their representation in class, but not considerably more. In fact, at high levels of gender knowledge both male and female instructors approached equality in their patterns of criticism with a slight bias toward disproportionately over-criticizing male students ($p=.037$).

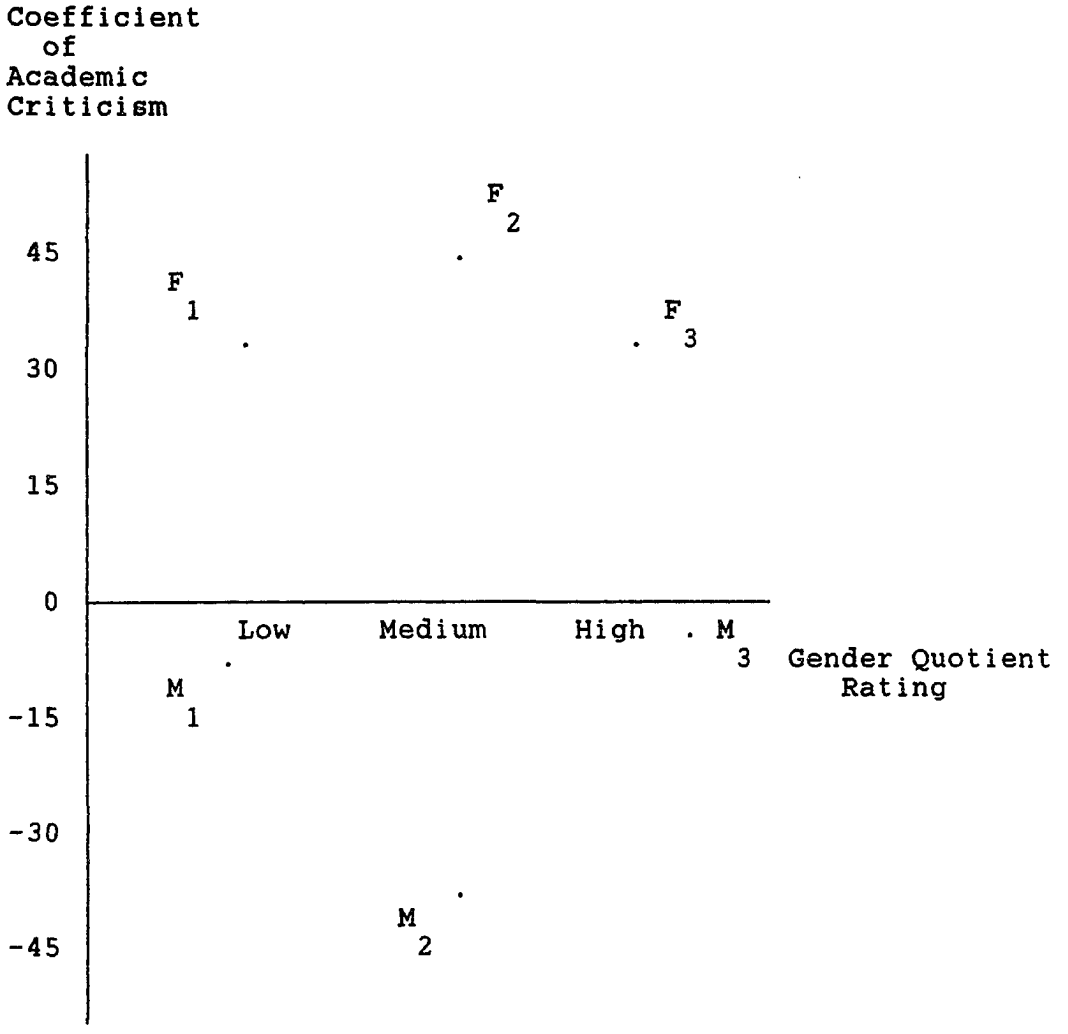
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Although the interaction of instructor gender and instructor gender quotient rating was not statistically significant for the subcategory of academic criticism, (at the .05 level) its similarity in pattern to the interaction for overall instructor criticism is striking. Therefore, the results for the interaction of instructor gender and gender quotient rating for academic criticism are illustrated in Graph 2 below.

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Graph 2

Instructor Academic Criticism



Graph 2 symbols and interpretation are identical to those used in Graph 1.

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Description of the Results for Instructor Academic Criticism

At low and high levels of instructor gender knowledge, male instructors distributed their academic criticism fairly equally among the sexes, slightly disproportionately criticizing females more. At intermediate levels of gender knowledge, male instructors academically criticized female students disproportionately more, while female instructors academically criticized male students disproportionately more. Female instructors, at high and low levels of gender knowledge, academically criticized male students approximately 30 percent more than their representation in class. (The female instructor criticism pattern follows the Sadker model of male students receiving more academic criticism than female students).

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CHAPTER V

DISCUSSION OF FINDINGS

Discussion

This study was designed to examine four aspects of classroom interaction. The first was the distribution of classroom interactions based primarily on the gender of the student, i.e., did both genders of students receive an equal frequency of interactions from their instructors (Hypotheses 1 through 5).

The second aspect examined how the distribution of interactions in the classroom may have been affected by instructor gender (Hypotheses 6 through 10).

The third aspect examined how the distribution of interactions in the classroom may have been affected by instructor knowledge about gender communication patterns as measured by Instructor Gender Quotient Ratings on the "Gender Communication Quotient Questionnaire" (GCQ) (Hypotheses 11 through 15).

The fourth aspect examined how the distribution of interactions in the classroom may have been affected by the

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interaction between instructor gender and instructor knowledge about gender communication patterns as measured by Instructor Gender Quotient Ratings on the "Gender Communication Quotient Questionnaire" (GCQ) (Hypotheses 16 through 20).

Since both academic and non-academic instructor interactions have been subjects of intense interest in the literature, academic and non-academic criticism interactions were examined separately. Perhaps the following example will serve to clarify the differences between academic and non-academic criticism. An instance of academic criticism occurred when an instructor informed a student he was quoting an incorrect source. A second example occurred when the instructor identified a student as inaccurately representing the ideas of an author through erroneous points. A third example occurred when an instructor cited that the points a student made did not support his argument.

An example of non-academic criticism occurred when an instructor told a student that she was expected to write although her hand was broken. A second example of non-academic criticism occurred when an instructor scolded students concerning being "adult" and responsible for completing assignments on time. A third example occurred when a student was told to concentrate on the lesson rather than converse with a neighbor.

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Criticism in academic concerns has been associated with instructor's perception of a student's academic ability. As the instructor sees the student as being more capable of academic improvement or having more ability, academic interactions increase. When the instructor sees the student as weak in academic ability, non-academic interactions of praise and criticism tend to increase while academic interactions in these categories tend to decrease (Sadker & Sadker, 1988a).

Non-academic criticism, such as criticism of format and presentation, has been associated with professors' perceptions of inappropriate participation by students. As the instructor sees subject matter, academic level, or institutional purpose as inappropriate for the perceived student, non-academic criticism and praise tend to increase while academic interactions in these categories tend to decrease (Sadker & Sadker, 1988b).

Hypotheses 1 through 5: Results Based on Gender of Student

Significant findings. One of the most important findings, from the perspective of the student, was that instructors interacted on a non-academic or more personal level significantly more (7.67%) with male students than they did with female students. What this means is that male

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students had more opportunities to interact with their instructors on a personal or non-academic level than did comparable female students. An instance of a non-academic interaction occurred when an instructor asked a male student whether he had gotten his car repaired. Interactions of any type are considered to impact student self-esteem and either motivate and serve as reinforcement for increased student participation or deter and inhibit student efforts. (Participation has been directly linked to academic outcomes [Gappa & Pearce, 1980; Sadker & Sadker, 1988b; AAUW, 1990; Eccles & Blumenfeld, 1985 and Gilligan, 1982; 1988]).

A second significant finding was that instructors directed more (15%) overall criticism to male students and less (15%) overall criticism to female students. What this means is that male students were criticized overall, more than comparable females.

Trends. While the differences are not statistically significant, male students received almost 5% more acceptance, 11% more academic criticism, 12% more non-academic criticism and 5.5% more total interactions with instructors than did female students. These trends do follow the pattern of Karp and Yoels (1976), Thomas (1983), Cohen (1986), and the Sadkers' (1988b) research. They are quite similar to Cohen's findings in the categories of total interactions, praise and acceptance, showing a pattern of male students receiving more

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responses in these categories (Cohen's findings as well as this researher's findings were not significant). The lack of statistical significance for the similar effect patterns found in this study and by Cohen may be due to the considerably smaller sample sizes used in both studies. Or an actual lack of differences may be present.

The Sadkers (1988b), Thomas (1983), and Boersma, Gay, Jones, Morrison and Remick (1981) used larger sample sizes, perhaps better allowing the discovery of a statistically significant difference in the way in which instructors interact with students in the categoric responses examined.

Comparison to the literature. One of the most striking dissimilarities between the findings of this study and other research is the contrast in the findings on remediation with the study by Thomas (1983). While Thomas found more remediation being given to male students than female students, the findings of this study showed no difference in the proportion of remediation given to male and female students. Both this researcher and Thomas (1983), and Long (1986), found remediation as the second most common classroom interaction. Remediation may be a categoric response which is somewhat subject matter dependent.

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Hypotheses 6 through 10: Results Based on Gender of Instructor

Significant findings. There were two significant findings related to instructor gender. Both overall criticism and academic criticism were highly associated with instructor gender. Female instructors over-criticized, overall, male students by 32%, while male instructors, overall, (excluding the rank interaction) distributed criticism equally among both genders of students. However, when the interaction effect is taken into account these results are dramatically altered.

A student in a class where his/her gender differed from the gender of the instructor was much more likely to be criticized academically by the instructor. Female instructors gave 37% more academic criticism to males than would be expected based on their proportional representation in class. Likewise, male instructors over-criticized female students academically by 10.74% more than their representation in class.

Because male instructors academically criticized female students more and female instructors academically criticized male students more, this may be an instance of "Complementary Schizogenesis." This term (coined by Gregory Bateson) deals with inappropriate responses given by either a member of a dominant culture who is interacting with a member of a

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subculture, or given by a member of a subculture interacting with a member of a dominant culture (Tannen, 1990).

In an attempt to compensate, so the theory goes, the person in control directs more attention--however, not necessarily appropriately--toward persons over whom he/she is in a position of authority. In an attempt to compensate for gender discomfort in the classroom, instructors may be directing more attention to students not of their own gender (Tannen, 1990).

It is also possible that male and female instructors are not directing criticism across their own gender to students for the same reasons. Male English instructors, due to a current awareness of gender issues, may be attempting to compensate for perceived unequal treatment and previous insensitivity toward females in the educational arena by directing more attention in the form of criticism toward female students. Female instructors may be responding to traditional social conditioning which emphasizes placing more importance on males' contributions in the classroom (Tannen, 1990).

Trends. While the differences are not significant, male students in the class of a male instructor interacted 8% more, overall, had 7% more academic interactions and 9% more acceptance from their instructors than did female students. In a female instructor's class both genders of students

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received nearly equal attention in each of these categories. Students in classes where their gender was different from the gender of the instructor received more praise responses, while students in a class where their gender was the same gender as the instructor received fewer praise responses (although these results were not significant at the .05 level).

Comparisons to the literature. One of the major dissimilarities between the findings of this research and other research findings is the strikingly different pattern for criticism and remediation (See pp. 61-62). This researcher found that male instructors, excluding the effects of gender knowledge, reacted equitably in overall criticism and remediation. In actual number of responses, male instructors favored male students in acceptance, overall academic interactions and total instructor student interactions (although these results were not significant at the .05 level). Karp and Yoels (1976) found that male instructors interacted more with male students while female instructors interacted somewhat more equitably. This researcher also found that female instructors reacted considerably more equitably in overall academic interactions, acceptance, and total interactions, yet overreacted toward males in the categories of overall criticism and academic criticism. In actual number of responses, male and female

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instructors praised the other gender more (although these results were not significant at the .05 level).

This study did not replicate the findings of Thomas (1983) and Cohen (1986) that instructor gender has no bearing on equity of classroom interactions. Similar to Boersma, Gay, Jones, Morrison and Remick (1981), this researcher found that cross-gender disproportionate interactions were common in the classroom (male students interacted more with female faculty while female students interacted more with male faculty). The relatively different findings were that remediation was basically equitable across genders and that criticism appears to be a more complex area of instructor gender interaction.

Hypotheses 11 through 15: Results Based on Gender Quotient Rating of Instructor

There appears to be no significant effect between instructor gender quotient rating, alone, and instructor classroom behavior.

Trends. Although these results were insignificant, a striking pattern emerged for non-academic criticism when instructor gender quotient rating was considered. At high gender knowledge ratings (G=3) the coefficient for non-academic criticism was -4, while at medium ratings it was 19 and at low ratings it was 26. This represents that, as gender knowledge increases, instructors' interactions are approaching

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gender equity. However, the standard deviations were high. At high levels of gender knowledge the standard deviation was 47 (n=4), at medium levels of gender knowledge the standard deviation was 28.5 (n=3) and at low levels of gender knowledge, the standard deviation was 23 (n=3). Due to small sample sizes, these figures may not be representative of the larger population.

Hypotheses 16 through 20: Results Based on Interaction Between Instructor Gender & Instructor Gender Quotient Rating

Overall criticism. At low levels of instructor gender knowledge, male instructors criticized female students somewhat more (7%) than male students while female instructors criticized male students much more (35%) than female students, as compared to their representation in class. At intermediate levels of gender knowledge, male instructors criticized female students much more (35%) than male students while female instructors criticized male students much more (43%) than female students, as compared to their representations in class. Indeed an intermediate amount of gender knowledge may increase the inequality at which male and female instructors distribute criticism throughout their classes. At high levels of gender knowledge (implying low anti-female bias), both male and female instructors criticized male students more (20% and

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17.76%, respectively) than their class representation, but not considerably more. In fact, at high levels of gender knowledge both male and female instructors approached equality in their patterns of criticism with a slight bias toward criticizing males more than their representation in class. This would indicate that increased gender knowledge for male and female instructors may not equalize their patterns of interaction in this category, depending on the amount of increased knowledge.

Academic criticism. Although the results from the interaction effect for this variable were not significant, their uniqueness requires they be reported. At low and high levels of instructor gender knowledge, male instructors distributed their academic criticism fairly equally among the sexes, slightly disproportionately criticizing females more. At intermediate levels of gender knowledge, male instructors academically criticized female students disproportionately more, while female instructors academically criticized male students disproportionately more. At high and low levels of gender knowledge, female instructors academically criticized male students approximately 30 percent more than their representation in class while academically criticizing females approximately 30 percent less than their representation in class.

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Implications

Findings such as these suggest that an increased awareness of gender issues in the classroom may lead to compensating behavior on the part of the instructor which is not necessarily distributing criticism more equitably throughout the classroom. If gender training is to be done, then more than a superficial attempt needs to be made. Otherwise, no definite improvement in the equitable distribution of criticism in the classroom may occur.

Although all student outcomes (i.e., female students' grades continue to range higher than males' scores in certain disciplines--and at certain academic levels) cannot be explained through the variables of classroom criticism or instructor gender, instructor criticism appears to be an area requiring continued researcher focus. These findings suggest that more in-depth research needs to be done in the categoric response of criticism with respect to instructor gender knowledge. The research results are inadequate to describe why such a marked cross-gendered pattern in overall and academic criticism appears in these findings.

Conclusions

1. Within the English Composition classes in this study, it would appear that neither student gender nor instructor gender was a significant variable in the overall number of

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interactions, the amount of praise, acceptance and remediation given by instructors. One might conclude that this relative freedom from gender bias is representative of graduate assistants in English, but there is no reason to believe that the same is true of all disciplines. Perhaps English, which has a long tradition of having women students and women lecturers within the discipline, would differ from such fields as engineering, physics and other disciplines with few women participants.

2. While the number of overall academic interactions was not gender related, overall non-academic interactions were. Both male and female instructors have more non-academic interactions with male students than with female students. Further research needs to be done in this area. Since non-academic interactions include both matters which are related to class activities ("Your paper sure is messy") and those that do not ("That is an attractive sweater"), further study could cast some additional light upon the real terms of student-teacher gender relationships in the classroom.

3. Instructor gender knowledge alone, as measured by the "Gender Quotient Questionnaire," was not a significant variable in any of the response categories of overall number of interactions, total academic interactions, total non-academic interactions, nor the amount of praise, acceptance, remediation and criticism given by instructors.

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4. Instructor gender, alone, is the most significant variable in predicting the direction of gender classroom overall criticism patterns and academic criticism patterns. However, for overall criticism, there is a significant interaction effect between instructor gender and instructor gender quotient rating (a measure of instructor gender communication knowledge). Further research needs to be done to determine if these striking patterns of male instructors criticizing female students more and female instructors criticizing males more is due to gender differences in verbal ability, achievement, conformity or other behavioral differences--which may be significant variables in producing the level of criticism. Furthermore, in order to promote a more equitable distribution of instructor criticism in the classroom, instructors of both genders will need to be given enough knowledge to include them in the highest instructor gender knowledge category.

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BIBLIOGRAPHY

Alexander, K. (1981, June). A learning environment that helps attain the cherry-on-the-top-of achievement. Paper presented at the meeting of the Convention of American Instructors of the Deaf, Rochester, NY.

American Association of University Women, (1990, Feb-Mar). Equitable treatment of girls and boys in the class room. Outlook, 84(1).

Amidon, E. & Flanders, N. (1961). The effects of direct and indirect teacher influence on dependent-prone students learning geometry. Journal of Educational Psychology, 52, 286-291.

Amidon, E. & Flanders, N. (1963). The role of the teacher in the classroom: A manual for understanding and improving teachers' classroom behavior. Minneapolis, Minn.: Paul S. Amidon & Associates, 68.

Anderson, C. (1982). The search for school climate: A review of the research. Review of Educational Research, 52.

Association of American Colleges. (1984). On campus with women. On-Campus-With-Women, 13(4).

Best, J. (1977). Research in education. Englewood Cliffs, NJ: Prentice-Hall, Inc.

Boersma, P., Gay, D., Jones, R., Morrison, L., & Remick, H. (1981). Sex differences in college student-teacher interactions: fact or fantasy? Sex Roles, 7(8), 775-785.

Brophy, J., & Good, T. (1974). Teacher-student relationships: causes and consequences. New York: Holt, Rinehart and Winston.

Broverman, I. K., Vogel, R., Broverman, D. M., Clarkson, F. E., & Rosenkranz, P. S. (1972). Sex-role stereotypes: A current appraisal. Journal of Social Issues, 28(2), 59-78.

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Bryant, J., Crane, J. S., Cominsky, P. W., & Zillman, D. (1980). Relationship between college teachers' use of humor in the classroom and students' evaluations of their teachers. Journal of Educational Psychology, 72, 511-519.

Buber, M. (1970). I and thou. Translated by W. Kaufmann. New York: Charles Scribner's Sons.

Burns, R. B. (1977). Male and female perceptions of their own and the other sex. British Journal of Social and Clinical Psychology, 16, 213-220.

Carelli, A. (Ed.). (1988). Sex equity in education: Readings & strategies. Springfield, IL: Charles C. Thomas.

Cohen, L. (1986). Classroom interactions: The effects of teacher sex equity and effectiveness training at a college for hearing-impaired students. Unpublished doctoral dissertation, The American University.

Corrigan, D. (1974). The future: Implications for the preparation of educational personnel. Journal of Teacher Education, 25, 100-107.

Deaux, K., & Taynor, J. (1973). Evaluation of male and female ability: Bias works two ways. Psychological Reports, 32, 261-262.

Eccles, J. & Blumenfeld, P. (1985). Classroom experience & student gender: Are there differences and do they matter? Orlando: Academic Press.

Flanders, N. (1960). Teacher influence: Pupil attitudes and achievement (Research Manual). University of Minnesota.

Flanders, N. (1970). Analyzing teacher behavior. Reading, MA: Addison-Wesley.

Fraser, B. J., & Fraser, D. L. (1982). Predicting students' outcomes from their perceptions of classroom psychosocial environment. American Educational Research Journal, 19, 498-518.

Froschl, M. & Sprung, B. (1988). Resources for educational equity. NY: Educational Equity Concepts, Inc.

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Gappa, J. M. & Pearce, J. (1980, December). Sex & gender in the social sciences: Reassessing introductory courses, Principles in economics. Wash, D.C.: Women's Educational Equity Act Program.

Gellman, E. (1973). Statistics for teachers. New York: Harper and Row.

Gilligan, C. (1982). In a different voice: Psychological theory & women's development. Cambridge, Mass: Harvard University Press.

Gilligan C., (Ed.). (1988). Mapping the moral domain: A contribution of women's thinking to psychological theory & education. Cambridge, Mass: Harvard University Press.

Good, T. (1979). Teacher effectiveness in the elementary school. Journal of Teacher Education, 30, 52-64.

Gornick, V. & Moran B. (Eds.). (1971). Women in sexist society: Studies in power & powerlessness. New York: Basic Books, Inc.

Guttentag, M., & Bray, H. (1977). Teachers as mediators of sex-role standards. In A. G. Sergeant (Ed.), Beyond Sex Roles. St. Paul: West Publishing C., 336-342.

Hall, R. M. (1982). The classroom climate: A chilly one for women? Washington, D. C.: Project on the Status and Education of Women.

Hartman, M. (1990, July). Mills students provided eloquent testimony to the value of women's colleges. Chronicle of Higher Education, XXXVI(42), A40.

Hawley, W., Rosenholtz, S., Goodstein, H., & Hasselbring, T. (Eds.). (1984, Summer). Good schools: What research says about improving student achievement. Peabody Journal of Education, 61(4).

Karp, D. A. & Yoels, W. C. (1976). The college classroom: Some observations on the meanings of student participation. Sociology and Social Research, 60, 421-429.

Kirk, R. (1982). Experimental design. Procedures for the behavioral sciences. Belmont, CA: Brooks/Cole Publishing Co.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Kleeman, James A. (1971). The establishment of core gender identity in normal girls. II. How meanings are conveyed between parent and child in the first three years." Archives of Sexual Behavior, 1(2), 117-129.

Leinhardt, G. & Seewalk, J. (1979). Learning what's taught: sex differences in instruction. Journal of Educational Psychology, 71, 437.

Long, J. (1986). The effects of teacher sex equity and effectiveness training on classroom interaction at the university level. Unpublished doctoral dissertation, The American University.

Mackenzie, D. (1983). Research for school improvement: An appraisal of some recent trends. Educational Researcher, 12, 5-17.

Mann, D. (1982). The instructionally effective school: A national delphi analysis. Washington, DC: National Institute of Education, School Finance Project.

Martin-Reynolds, J., & Reynolds, B. J. (1983). Teacher and student perceptions of climate as related to selected variables. Paper presented at the meeting of the American Educational Research Association, Montreal.

Minium, Edward W. (1978). Statistical reasoning in psychology and education. 2d edition. New York: John Wiley & Sons, 428.

NETWORK, Inc. (1989). Year 4: FINAL REPORT: Promoting effectiveness in classroom instruction. National Institute of Education, Department of Education.

Nowacki, C. M., & Poe, C. A. (1973). The concept of mental health as related to sex of person perceived. Journal of Consulting and Clinical Psychology, 40, 160.

Palmore, E. (1988). The facts on aging quiz. New York: Springer Publishing Co.

Parsons, T., & Shils, E. (1951). Toward a general theory of action. Cambridge, Mass.: Harvard University Press.

Pleck, J. H. (1978). Men's traditional perceptions and attitudes about women: Correlates of adjustment or maladjustment. Psychological Reports, 43, 975-983.

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Ricks, F. A., & Pyke, S. W. (1973). Teacher perceptions and attitudes that foster or maintain sex differences. Interchange, 4, 26-33.

Rosenfeld, B. & Jarrad, M. (1985). The effects of perceived sexism in female and male college professors on students' descriptions of classroom climate. Communication Education, 34, 205-213.

Ross, R. (1981). A study of the relationship of classroom environments and selected student characteristics. Unpublished doctoral dissertation, Bowling Green State University.

Sadker, M., Bauchner, J., Sadker, D., & Hergert, L. (1981). Observer's manual for INTERSECT: Interactions for sex equity in classroom teaching. Washington, D. C.: U.S. Department of Education.

Sadker, M. P. & Sadker, D. M. (1980). Between teacher and student: Overcoming sex bias in classroom interaction. Washington, D. C.: U.S. Department of Health, Education and Welfare, Women's Educational Equity Act Program.

Sadker, M. & Sadker, E. (1988a). The communication gender gap. Wash, D.C.: Mid-Atlantic Center for Sex Equity.

Sadker, M. & Sadker, D. (1988b). Teachers make the difference. New York: McGraw Hill.

Sadker, M. P. & Sadker, D. M. (1982). Sex equity handbook for schools. New York: Longman.

Sadker, M. & Sadker, D. (1985a, January). Is the o.k. classroom o.k.? Phi Delta Kappan, 66(5), 358-361.

Sadker, M. & Sadker, D. (1985b, March). Sexism in the schoolroom of the '80's. Psychology Today, 19(3), 54-57.

Sadker, M. & & Sadker, D. (1986, February). Sexism in the classroom: From grade school to graduate school. Phi Delta Kappan, 512-515.

Sadker, M. P., Sadker, D. M., & Klein, S. (1990). The issue of gender in elementary and secondary education. An unpublished work presented at the Louisiana State Educational Equity Conference, New Orleans.

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Schantz, B. (1963). An experimental study comparing the effects of verbal recall by children in direct and indirect teaching methods as a tool of measurement. Unpublished doctoral dissertation, Pennsylvania State University.

Schwartz, W. (1980, May/June), Education in the classroom. Journal of Higher Education, 51, 236.

Serbin, L., & O'Leary, D., Kent, R., & Tonick, I. (1973). A comparison of teacher response to the preacademic and problem behavior of boys and girls. Child Development, 44, 796-804.

Serbin, L., & O'Leary, D. (1975a). Preschool gender differences. New York: Stony Brook.

Serbin, L., & O'Leary, D. (1975b). How nursery schools teach girls to shut up. Psychology Today, 9(7), 56-58.

Serbin, L., Connor, J. & Iler, I. (1979). Sex-stereotyped and non-stereotyped introductions of new toys in the preschool classroom: An observational study of teacher behavior & its effects. Psychology of Women Quarterly, 4, 261-265.

Serbin, L., Connor, J. & Citron, C. (1981). Sex-differentiated fee play behavior: Effects of teacher modeling, location & gender. Developmental Psychology, 17, 640-646.

Serbin, L., Sprafkin, C., Elman, M., & Doyle, A. (1982). The early development of sex-differentiated patterns of social influence. Canadian Journal of Behavioral Science, 14(4), 350-363.

Spence, J. T. & Helmreich, R. (1972). Who likes competent women? Competence, sex-role congruence of interests and subjects' attitudes toward women as determinants of interpersonal attraction. Journal of Applied Social Psychology, 2, 197-213.

Squires, D., Huitt, W., & Segars, J. (1984). Effective schools and classrooms: A research-based perspective. Virginia: Association for supervision and Curriculum Development.

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Stacey, J., Bereaud, S. & Daniels, J. (Eds.). (1976). And Jill came tumbling after: Sexism in American education. NY: Dell Publishing, Co., Inc.

Stark, C., Adamec, C., & Graham, M. (1978). The complexity of attitudes toward women: II. Perceptions of societal attitudes and associated tension. International Journal of Women's Studies, 1, 503-516.

Stockard, J., Schmuck, P. A., Kempner, K., Williams, P., Edson, S. K., & Smith M. A. (1980). Sex equity in Education. New York: Academic Press.

Storms, M. D. (1979). Sex role identity and its relationships to sex role attributes and sex role stereotypes. Journal of Personality and Social Behavior, 37, 1779-1789.

Sundell, W. (1972). The operation of confirming and disconfirming verbal behavior in selected teacher-student interactions. Unpublished doctoral dissertation, University of Denver.

Tannen, D. (1990). You just don't Understand: Talk between the sexes. New York: Morrow.

Tavris, C. & Wade, C. (1984). 2nd Ed. The longest war: Sex differences in perspective. Orlando, FL: Harcourt Brace Jovanovich, Inc.

Thomas, D. (1983). An analysis of sex differences in teacher-student interaction in elementary/secondary and postsecondary mathematics, science and composition/literature/language arts classroom. Unpublished doctoral dissertation, The American University.

U. S. Civil Rights Commission. (1973). Washington, DC: Government Printing Office.

Zimet, S. G., & Zimet, C. N. (1977). Teachers view people: Sex-role stereotyping. Psychological Reports, 41, 583-591.

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APPENDIX A

LETTER REQUESTING PARTICIPATION

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16 August 1990

Dr. David Mair
Graduate Assistant Coordinator
Department of English, GiH, 122B
University of Oklahoma
Norman, OK 73071

Dear Dr. Mair:

Thank you for your interest in the classroom interaction research project. This study over a four month period of freshman English Composition classrooms provides a data based analysis for determining if the independent variables of (1) Instructor gender and (2) Instructor Communication Gender Quotient affect the quality of teacher-student interaction in the college classroom setting. Five areas of teacher-student interaction are examined (1) frequency of interactions, (2) praise, (2) acceptance, (3) remediation and (5) criticism. A pilot study will be done in three classrooms during the pre-study semester.

Thirty-six classrooms of twenty-six freshman students will be monitored by three trained observer. Six male and six female students in each class will be randomly chosen and focused on and their instructor-student interactions will be coded. Eighteen instructors of both sexes will be observed, each instructor gender group represented a high, medium and low rating on the Sadker Communication Gender Quotient Questionnaire. Coders will not be informed as to the Communication Gender Quotient Rating of the instructors observed.

These classrooms will be observed three times over the course of the semester during fifty minute periods. The INTERSECT Observation Instrument will be used by trained observers to code classroom interactions for each observation. Analysis of Variance procedures will be used to search for significant differences in between group and within group means within and between cells.

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The hope of this research is to provide new insight into how interaction occurs in the classroom along gender lines. The general results will be provided to the English department and published as a dissertation. Anonymity of instructor identity is guaranteed. All individual results will remain the confidential property of the researcher and will not be disclosed to the English Department, the University or to any other source. No instructors will be identified in the published dissertation. Instructors may request their results and upon request they will be provided to them.

In order to select the faculty and classes most appropriate for this project, I am requesting that you administer the modified Gender Quotient Questionnaire and return the completed forms to me for scoring. We will then select the appropriate instructors and class sections. I want to thank you once again for your willingness to participate in this project and look forward to working with you.

Sincerely,

Susan L. Crogg
Doctoral Student
Department of Educational Leadership

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APPENDIX B

INTERSECT FORMS A, B AND C

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INTERSECT: POSTSECONDARY FORM SECTION A: Data Summary Sheet

OBSERVER _____ DATE _____

1. Record your name and the date of the observation.

2. In the spaces provided, write the information that most accurately describes the classroom in which you are observing.

   A. Circle the level of the class:

      Graduate Undergraduate

   B. Note the academic content area:

_____

_____

_____

   C. Circle the appropriate professor information:

      Minority: Black: Hispanic: American Indian: Asian: _____ (Other):

      Majority: ____ Male ____ Female ____

3. Give the:

Total number of female students	_____
Total number of male students	_____
Total number of minority female students	_____
Total number of minority male students	_____
Total female interactions	_____
Total male interactions	_____
Total minority female interactions	_____
Total minority male interactions	_____
Total number interactions	_____

4. Classroom Context:

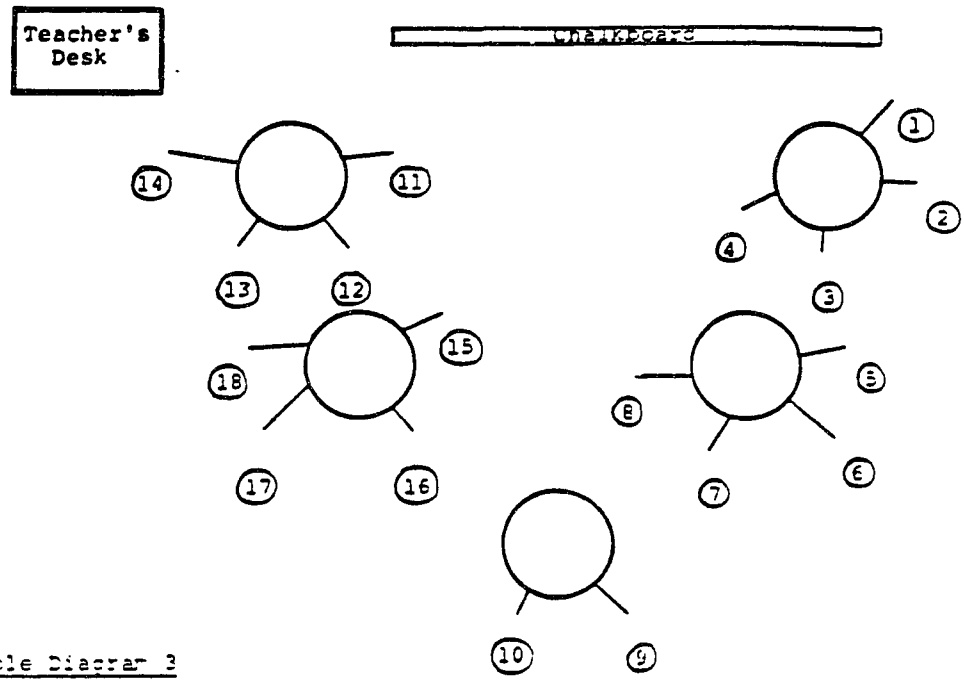
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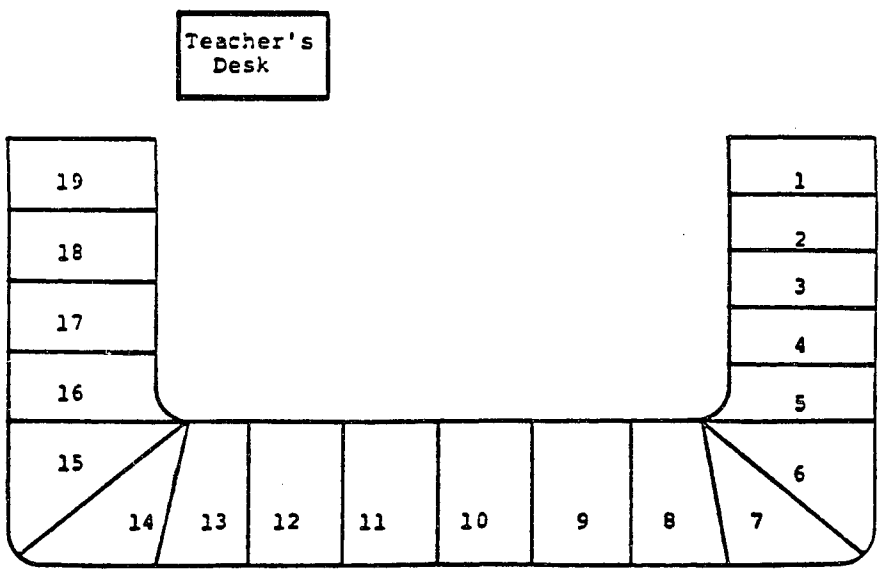
5. Diagram of classroom seating arrangement (See Form B):

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Sample Diagram 2



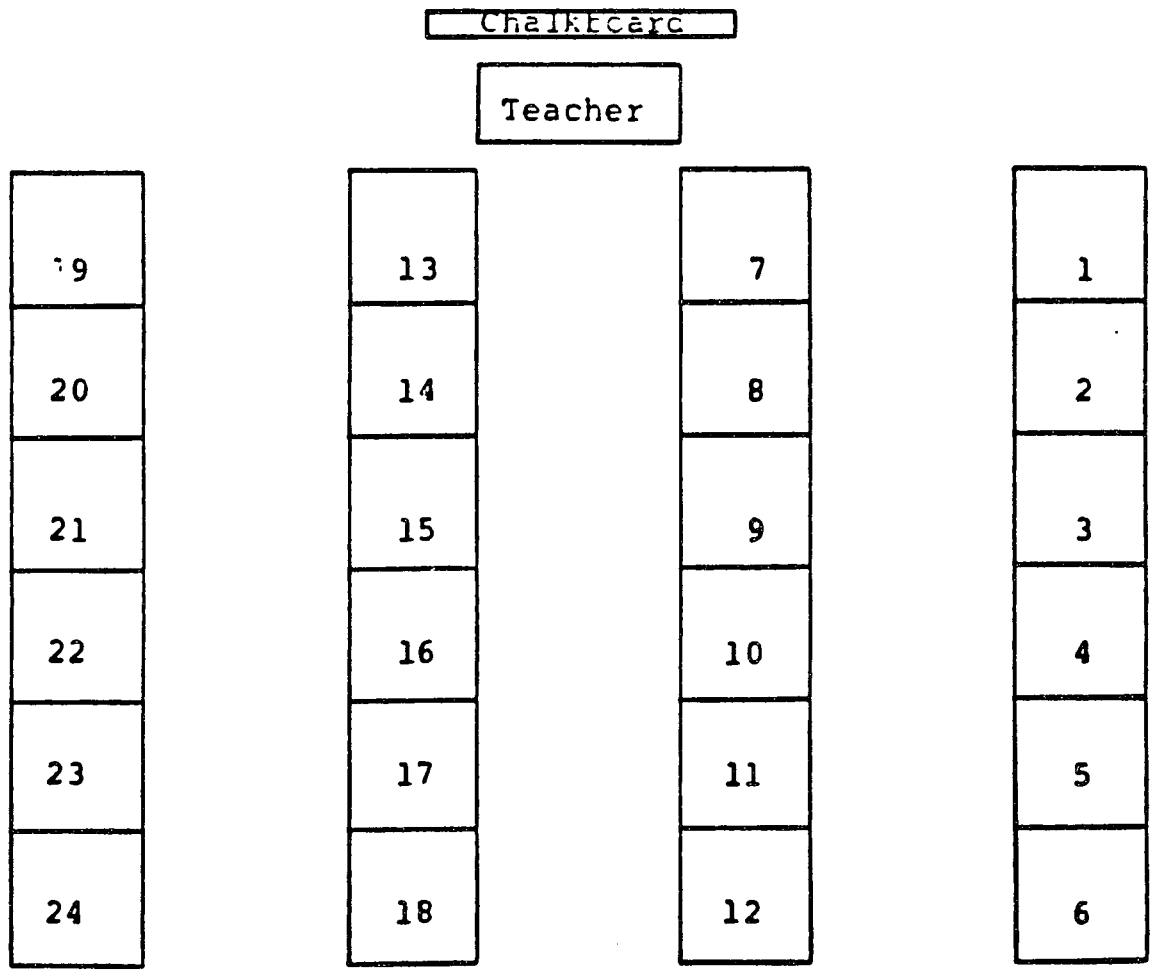
Sample Diagram 3



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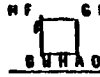
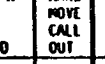
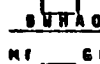
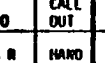
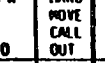
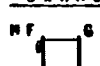
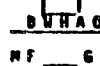
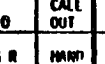
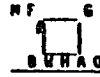
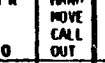
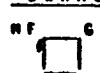
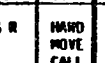
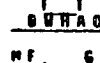
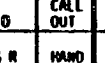
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Sample Diagram 1



Observer	Date	School	Grade Level	# ID

Time _____ Subject/Teaching Context _____

1	2	3	4	5	6	7	8	9	10
Teacher Initiates to:	BY	Student Initiates	IN	Praise	Accept	Remediate	Criticize	Comment	Ancillary Teacher Behavior
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal
	HAND MOVE CALL OUT		Private	P-I P-C P-App^{W} P-O	A-I A-C A-App^{W} A-O	R-I R-C R-App^{W} R-O	C-I C-C C-App^{W} C-O		Attribution A Eff X Short Circuit: Physical Verbal

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APPENDIX C

MODIFIED GENDER QUOTIENT QUESTIONNAIRE

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Questionnaire of Instructor Knowledge/Attitudes

		True	False
1.	Men talk more than women.	____	____
2.	I take a positive attitude toward myself.	____	____
3.	Men are more likely to interrupt women than they are to interrupt other men.	____	____
4.	There are approximately ten times as many sexual terms for males as for females in the English Language.	____	____
5.	During conversations, women spend more time gazing at their partner than men do.	____	____
6.	I certainly feel powerless at times.	____	____
7.	Nonverbal messages carry more weight than verbal messages.	____	____
8.	Female managers communicate with more emotional openness and drama than male managers.	____	____
9.	If someone offered me an interesting and well-paying job in a good location, I would drop out of graduate school and take it.	____	____
10.	Men not only control the content of conversations, they also work harder in keeping conversations going.	____	____
11.	I like to associate with people from races and cultures other than my own.	____	____
12.	When people hear generic words such as "mankind" and "he," they respond inclusively indicating that the terms apply to both sexes.	____	____
13.	I enjoy college life very much.	____	____
14.	Women are more likely to touch others than men are.	____	____
15.	In classroom communications, male students receive more reprimands and criticism than female students.	____	____
16.	Women are more likely than men to disclose information on intimate personal concerns.	____	____
17.	Almost everyone I know would cheat now and then to get ahead or to avoid failure, particularly if they felt they wouldn't get caught.	____	____
18.	Female speakers are more animated in their conversational style than are male speakers.	____	____
19.	It's o.k. to use insider information to make a killing on the stock market.	____	____
20.	Women use less personal space than men.	____	____
21.	It's o.k. to join a country club that excludes ethnic minorities.	____	____

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	True	False
22. When a male speaks, he is listened to more carefully than a female speaker, even when she makes the identical presentations.	____	____
23. In general, women speak in a more tentative style than do men.	____	____
24. I accept interracial marriages between blacks and whites.	____	____
25. Women are likely to answer questions that are not addressed to them.	____	____
26. There is a widespread sex segregation in schools, and it hinders effective classroom communication.	____	____
27. I am very concerned about the quality of education in today's colleges.	____	____
28. Female managers are seen by both male and female subordinates as better communicators than male managers.	____	____
29. In classroom communications, teachers are more likely to give verbal praise to females than to male students.	____	____
30. In general, men smile more often than women.	____	____

31. The most dominant feeling or mood I had in college was one of :

a. Loneliness
b. Disappointment & boredom
c. Pleasure and fun
d. Anxiety and lack of confidence
e. Interest and excitement

32. The goal that appeals to me most right now is:

a. Making a lot of money.
b. Developing a successful and enduring relationship.
c. Becoming an expert in my field of choice.
d. Developing more self-confidence and personal pride.
e. Gaining knowledge about the world I live in.

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33. What I like to watch most on TV is:

a. News and documentaries
b. Situation Comedies (Cheers, Cosby, etc.)
c. Talk shows
d. Soaps
e. Sports

In the space provided please respond to the following items:

What responsibilities do students have for learning?

_____

_____

_____

Is it more important to provide your students with answers or the ability to pose probing questions?

_____

_____

_____

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Documentation of GCQ Items

1. TRUE. Despite the stereotype, research is consistent and clear. In classrooms, in offices, group discussions, in two-person conversations, men talk more than their fair share of the time. In repeated studies where men and women were asked to describe art work, engravings and political and religious opinions, women averaged three minute answers while men averaged thirteen minutes (Swacker, 1975; Eakins & Eakins, 1978).

2. Filler question.

3. TRUE. When persons of the same gender converse interruptions are evenly distributed. However, when men and women talk together, almost all interruptions are made by male speakers. Sociologists Candace West and Donald Zimmerman analyzed conversations both on and off of university settings. These sociologists think that interrupting may be a way of exercising power. They argue that the female's right to speak in our society is infringed upon by males exercising a need for power over the opposite gender (Zimmerman & West, 1975).

4. FALSE. According to one research study 22 sexual terms were identified as describing men while 220 sexual terms applied to women (Stanley, 1978). Furthermore, most of the terms used to label women tend to denigrate or trivialize them. Women are often compared to plants (clinging vine, shrinking violet), foods (honey, cookie, dish, sweetie), and animals (chick, hog, cow, and pig) (Nilsen, 1972; Stanley, 1985).

5. TRUE. Many studies - with subjects ranging from infants to elderly - have shown that women are more likely than men to gaze at their partner. One reason may be that men talk more and women listen more. Research shows a listener of either sex looks more at a speaker. Another possible reason why women gaze more frequently at a partner may be their need for and expertise in decoding nonverbal cues. However, in a direct staring confrontation women will be more likely to avert their eyes, especially when stared at by men. Frequently, a woman will tilt her head back rather than look directly at a man. Researchers call this a "presenting" gesture that reflects friendliness and submission (Libby, 1970; Henley & Thorne, 1977; O'Connor, 1970).

6. Filler question.

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7. TRUE. Nonverbal messages carry over four times the weight of verbal messages. Other research shows that in most two-person conversations nonverbal messages convey more than 65 percent of the meaning. Women seem to communicate more effectively on this nonverbal channel. They are better than men at decoding nonverbal cues. They are also more likely to reflect their feelings through facial expression (Salter, Nicholson, Williams, & Burgess, 1976; Birdwhistell, 1987).

8. FALSE. Research conducted at a midwest hospital and in the clerical departments and production lines of manufacturing firms shows that both female and male managers score higher than the general population in communication friendliness and approval to subordinates. Further, women managers are no more emotionally open or dramatic than their male counterparts. Both sexes appear to feel that managers should not demonstrate these characteristics. However, there were some communications differences. Male managers were more dominant in style and more likely to direct the content and flow of the conversation (Hyman, 1980).

9. Filler Question.

10. FALSE. While men do exert power and authority in controlling the course of conversations, women exert more effort in maintaining communication. Sociologist Pamela Fishman placed tape recorders in homes of couples who described themselves as free of traditional sex role stereotypes. Fishman recorded over 50 hours of conversations that occurred naturally. Over 96 percent of the topics men introduced were developed in conversations. Only 36 percent of the topics women introduced were similarly developed. Women asked more questions and were more willing to develop a topic introduced by men. In contrast, men "killed" conversational topics that women introduced by giving a minimal response, such as "um," and failing to ask questions or make more extended comments about the topic. In studies of mock jury deliberations, it has been found that women are more likely to make understanding and supportive comments (Parlee, 1979; Strodbeck & Maris; 1986).

11. Filler question.

12. FALSE. Terms such as "mankind," "man" and "he" are supposed to be generic and are presumed to include both men and women. Research shows that this isn't really the case. People are more literal in their thinking. Studies with elementary, secondary, and college students show that when the supposed generic term, "man," is used people envision males,

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even when the content implies both men and women. In another study, students illustrated supposedly generic references (e.g., urban man) with male pictures more than they did when the references were neutral (e.g., urban life). Other researchers found that when male generic nouns and pronouns were used to describe the job of psychologist, female students described the job as less attractive to them than when sex neutral terms were used. Women who were exposed to the feminine generic (she to include everybody) reported feelings of pride, importance and power. And yet another researcher reports that when an applicant for an executive position was described as a girl, subjects rated her as less "tough," "mature," "brilliant," and "dignified," and they gave her approximately $6000 less in salary than when the word "woman" was used (Eakins & Eakins, 1978; Schneider & Hacker, 1983; Kramer, Thorne, & Henley, 1978; Brannon, 1988).

13. Filler question.

14. FALSE. In fact, just the opposite is true. Throughout their lives women are more likely to be touched than men. The touching of women by men - guiding them through the door, assisting them with coats, helping them into cars -happens so frequently that it goes virtually unnoticed. Nancy Henley studied couples in a variety of outdoor settings and found that men touch women far more than the reverse. While many would describe this touching as indication of warmth and intimacy or even as a sexual overture, Henley believes that it is nonverbal display of power (Eakins & Eakins, 1978; Henley, 1983; Mayo & Henley, 1981).

15. TRUE. The research is very consistent on this issue. From preschool through high school, male students are more likely than female students to be reprimanded for misbehavior. Some studies say they are eight to ten times as likely to be scolded. Sometimes they get reprimanded more because they are misbehaving more. But, other studies show that when females and males are misbehaving equally, the males are still more likely to get scolded and receive harsher penalties (Sadker & Sadker, 1982; Sadker, Sadker, Bauchner, & Hergert, 1982).

16. TRUE. There is some inconsistency in the research here, but most studies show that women are more likely to reveal personal information about themselves. This pattern may reflect differences in power or status between males and females. For example, in work situations subordinates tend to reveal more personal information about themselves to their superiors than their superiors reveal to them. The more power

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a person has, the more personal information he or she is likely to receive (Lombard & Lavine, 1981; Slobin, Miller & Porter 1983).

17. Filler question.

18. TRUE. Female speakers display more animated behavior including amount and intensity of eye contact, gestures, facial expressions and body movement. Further, they are more likely to use a wider range of pitch and more variable intonations than male speakers. However, men appear to be more dramatic in their verbal behavior. They are more likely to tell anecdotes and jokes (Montgomery & Norton, 1981).

19. Filler Question.

20. TRUE. Women's space is far more likely to be intruded on by others. Women are approached more closely than men by both women and men. When women and men approach each other on the street, women are more likely to walk around men or move out of their way. In homes, men are more likely to have their room, study or den - an inviolate area where nothing is to be touched. Women also use space in a more confining way. While men are more likely to sit with arms and legs apart, women cross legs or ankles and sit with hands in their laps - taking up far less space. This reduced control of space or territory is characteristic of those with less power and status (Sommer, 1986; Silveira, 1982).

21. Filler question.

22. TRUE. Both female and male members of audiences pay more attention to male speakers than female speakers. Audience members recall more information from presentations given by males. This appears to occur whether the information is stereotyped as appropriate for males or stereotyped as associated with females. And it occurs even when male and females speakers make identical presentations (Gruber & Gaehelein, 1989).

23. TRUE. According to linguist Robin Lakoff, "women's language" is characterized by certain patterns:
- making statements ending in a questioning intonation or putting tag questions at the end of declarative sentences (This is a good movie, isn't it?)
- using qualifiers such as "kind of" or "I guess"
- excessively polite speech
- use of "empty adjectives" (divine or lovely) and use of

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"so" with adjectives (so thoughtful).

While not all studies support Lakoff's notion of women's speech, several show that women do express themselves with more diffidence and less assertion than men. Many researchers claim that tentative speech patterns do not characterize the speech of women so much as they characterize the speech of those who lack power. For example, one group of researchers analyzed communication in a police station. They found that both male and female clients who came to the station were more likely to use "women's language" than were either male or female police personnel. There are consequences to using "women's language." Both men and women who speak in a tentative, non-assertive style are less likely to be believed by a jury. In fact until 1979, the British Broadcasting Corporation didn't (BBC) allow women to read the news over the air because they were perceived to lack credibility or authority (Lakoff, 1976; Crosby & Nyquist, 1986; Parlee, 1979).

24. Filler question.

25. FALSE. Men manage to capture more than their fair share of talk time. Sometimes women actually help men gain this advantage because they are more likely to ask questions while men are more likely go give answers. However, men often take this advantage for themselves by interrupting women and by answering questions that are not addressed to them (Hirshman, 1973; Kester, 1990).

26. TRUE. When people hear the word "segregation," they usually think about racial discrimination. Sex segregation may happen in more subtle ways, but it is widespread. Teachers, or students themselves, frequently form separate boy and girl lines, seating arrangements, work groups, play areas, and even science lab work teams. Even college classrooms display sex segregation in student seating arrangements. Children cross racial lines more often than sex lines in classroom communication. Some researchers have found that students are often unwilling to work together on science projects. However, teachers can encourage boys and girls to play and work together simply by praising children engaged in cross-sex interaction. An important implication of the research is that when girls and boys work and play together, they are less likely to hold stereotyped attitudes (Sadker & Sadker, 1982; Thomas, 1983; Grant, 1984; Lockheed & Harris, 1985).

27. Filler question.

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28. TRUE. Despite the stereotypes, when employees work for a female supervisor, they vote their approval. Female managers are seen as giving more attention to subordinates, as more open to ideas, and as more supportive of worker effort than male managers. Both female and male subordinates report that morale and job satisfaction are higher when supervised by women. Others report that women are more dependable, show greater concern and pay better attention to detail. Research on female managers in the business world is related to research in elementary schools. Studies on elementary schools with female principals show that these schools are warmer, more democratic and are characterized by higher student achievement and higher pupil and parental satisfaction (Hyman, 1980; Sadker & Sadker, 1982).

29. FALSE. Although girls get better grades than boys, they receive less verbal praise from teachers. When girls do get praise from teachers, it is likely to be for neatness and appearance. ("That's an attractive paper." "You have very neat handwriting.") In contrast, when boys get praise, it is more likely to be for the intellectual quality of their ideas. Not only do teachers praise boys more, but they criticize them more, ask them more questions, and give them more attention in general (Sadker, Sadker, Bauchner & Hergert, 1982; Dweck, Davidson, Nelson & Enna, 1988).

30. FALSE. Women are far more likely to smile than men. They do this in many different social situations even though they are not necessarily happy or amused. In one field study researchers smiled at approximately 150 males and 150 females in public. In general women returned the smiles more often than men. Women returned the smiles to men 93 percent of the time and to other women 86 percent of the time. Males smiled back at women 67 percent of the time, and they returned smiles to men 58 percent of the time. The researchers concluded that women give more than they get in this smiling exchange. "Women are exploited by men - they give 93 percent of the time but receive in return only 67 percent." Some writers claim that this pattern of frequent smiling is really a gesture of submission. Feminist Shulamith Firestone has called the smile a "badge of appeasement... the child/woman equivalent of the shuffle" (Henley, 1986; Firestone, 1989).

31. through 35. Filler questions.

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USES OF THE GENDER QUOTIENT QUESTIONNAIRE

Using the Questionnaire to Educate

The simplest and most common use of the GCQ is to stimulate discussion and clarify misconceptions about gender communication patterns. Students are told that it is a participation exercise and that they will not be graded upon the results. They are encouraged to answer the best they can and then to determine what their misconceptions are. They are told to answer all questions and work rapidly. Approximately 15 minutes are allocated to this task. After the students have finished answering the questions a key is provided to them so that they can see how they scored on the quiz. Discussion can then proceed on the items which were missed the most. The Sadkers utilize the questionnaire in this manner when they are travelling giving U.S. Department of Education Workshops nationwide. The questionnaire was also used in this manner at the August 1990 Louisiana State Equity Education Workshop, sponsored by the Louisiana State Department of Education; and at the December, 1990 Kentucky State Education Equity Conference sponsored by the Kentucky State Department of Education (Sadker & Sadker, 1988; Crogg, 1990).

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All who have used the quizzes to identify frequent misconceptions and to stimulate discussion report that it does succeed in stimulating much discussion. Occasionally there is argument about the validity or wording of some of the items. Question #28 has come into debate in recent years as the response now appears to be industry or job field dependent. In industrial jobs male managers may enjoy an equal or higher rating than female managers. However, sample sizes for comparison are too small to show a statistically valid difference at this stage (Sadker & Sadker, 1988; Crogg, 1990). It is always recommended that the instructor not enter any extended debate on the facts involved, but simply point out that the statistics and research reports speak for themselves and if the students wish to pursue the matter further, they can look up the references and see if that satisfies them. The instructor can also recognize that there are always exceptions to general tendencies and that some people do not fit the general facts presented (Sadker & Sadker, 1988).

In fact, it is a good educational technique to discuss exceptions to general rules in order to understand why these persons are exceptions. This reinforces learning about the general rule and introduces the factors involved in the exceptions (for example why female police officers do not use conventional "women's" communication patterns) (Lakoff, 1976; Crosby & Nyquist, 1986; Sadker & Sadker, 1988).

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Using the Questionnaire to Measure Learning

If one wishes to measure the effects on instruction, one needs to be more careful about administration and scoring of the quizzes, because any errors in scoring the pretest or post test reduces the accuracy of the measured change. It is recommended that students not be allowed to score their own quizzes, first because of the temptation to change or fill in correct answers to increase the number of items correct, and second because of the simple mechanical and other kinds of errors that an inexperienced scorer is likely to make. Therefore, quizzes should be collected for scoring by the instructor prior to giving the correct answers (Sadker & Sadker, 1988).

There are two ways of measuring the effects of instruction: (1) repeat the same quiz at the beginning and end of the instruction or (2) use the GCQ quiz at the beginning and a similar questionnaire technique measuring the same factors at the end of the instruction. Caution needs to be entertained that the second questionnaire measures the same factors (without biasing questions) as the GCQ does. The advantage of the first method is that pretest and post test differences cannot be due to differences between the two forms. The big disadvantage is that improvements in scores may be due more to remembering the correct answers from the first administration than to any general increase in knowledge

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about gender communication patterns. The disadvantage of the second method is that differences between scores on the two questionnaires may be due to unreliability of the tests, or differences in the content or wording, rather than to an increase in knowledge about gender communication (Sadker & Sadker, 1988).

On balance, it is recommended to use different forms at the beginning and end, because of the almost inevitable increase in scores that results from retaking the same test. This is knows as the "practice effect" and cannot be avoided in test-retest situations with the same test. Although unreliability of the tests is more of a problem when using the two tests, it has been found that this tends to cancel out in the group mean scores when large groups are used. Thus, some individuals will have higher or lower scores on the second test because of chance factors (unreliability), but the group mean scores will tend to be more reliable and meaningful (Sadker & Sadker, 1988).

The average correlation of the GCQ with similar questionnaires in initial tests of the questionnaires found an average correlation of .50 (with groups equally weighted) and higher correlations (.70 to .80) among those who knew more about gender communication, such as graduate students in the fields of Communication and English. Furthermore, Hergert found that use of a "don't know" response option improved

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internal reliability scores dramatically. Therefore, the between-test reliability using a "don't know" response option is probably substantially higher than the preceding correlations would indicate, as they were obtained in testing situations that did not offer this option (Sadker, Sadker, Bauchner, & Hergert, 1981).

Using the Questionnaire to Test Knowledge

The purpose of this is to measure and compare levels of knowledge and most frequent misconceptions in different groups. Such comparisons are useful for understanding the causes of ignorance and prejudice toward gender groups in our society. These comparisons are also useful for determining which groups are most in need of information to correct their misconceptions about gender communication (Sadkers, 1988).

This usage is similar in method to the measurement of the effects of instruction, because it is important to get accurate scoring. Therefore, it is recommended that respondents be given plenty of time to finish and do not score their own questionnaires. This method also argues for allowing a "don't know" response to distinguish between misconceptions (wrong answers) and ignorance ("don't know"), a theoretically and practically important distinction. A misconception involves a belief that one knows the correct answer when actually one does not.

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Ignorance involves a recognition that one does not know the correct answer. In other words misconception is a wrong idea, while ignorance is the absence of an idea. It is usually more difficult to correct a misconception than to change ignorance into knowledge. In a sense, correcting a misconception involves two steps: One must first become convinced that one was wrong and then must be convinced that the right answer is indeed correct (Sadker & Sadker, 1988).

Thus, on the revised questionnaires, there are three different scores that may be used to measure levels of knowledge: the percentage correct, the percentage wrong, and the percentage of "don't know" responses. Each of these scores measures different things and is useful for different purposes. The percentage correct measures the overall amount of knowledge. The percentage wrong measures the amount of misconception that needs to be corrected. The percentage of "don't know" responses measures the amount of ignorance that needs to be corrected (Sadker & Sadker, 1988).

Using the Questionnaire to Measure Attitudes

The percentage-wrong measure discussed above is the basis for measuring attitudes; however, it should be noted that the GCQ may not be the best way of measuring attitude. If one is limited in the amount of time or cooperation one can get from subjects, one can use the bias scores (number of

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wrong responses) from the GCQ as "indirect" measures of attitudes toward gender communication (Sadker & Sadker, 1988).

The bias scores are based on the assumption that certain misconceptions about gender communication indicate positive or negative bias. For example, if someone says it is true that a majority of women talk more than men (since multiple research shows that just the opposite is true) they would probably interpret a fifty-fifty or a forty-five fifty-five percent split in female vs. male communication percentages, as women monopolizing the conversation (regardless of the gender of the respondent).

Thus this would indicate a negative bias toward women's participation in verbal communication. On the other hand, if someone denies that "female speakers are more animated than male speakers" (which research shows to be true), it probably indicates a positive bias or a ("false adjustment to fight perceived personal bias") toward female communication patterns (Sadker & Sadker, 1988).

Twelve items have been classified as "TRUE" (note dissent on question #28) indicating a gender bias if they are marked incorrectly: 1, 3, 5, 7, 15, 16, 18, 20, 22, 23, 26, and 28. On the other hand eight items have been classified as "FALSE" indicating a gender bias if they are marked incorrectly: 4, 8, 10, 12, 14, 25, 29, and 30. Incorrect responses on any of these questions show either misconceptions

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about the degree, direction, or form of gender communication in our culture.

However, due to the wording of the questions, the direction of the bias in an wrong answer cannot be determined simply by determining that the question has been marked incorrectly. To determine the direction of the bias the key is as follows:

Fifteen questions have been classified as showing anti-female bias when answered incorrectly while five questions have been classified as showing pro-female bias when answered incorrectly. Questions classified as indicating a negative anti-female gender bias when answered incorrectly are: 1, 3, 4, 5, 7, 8, 10, 12, 14, 15, 20, 25, 26, 28 and 30. Questions classified as indicating a positive pro-female gender bias when answered incorrectly are: 16, 18, 22, 23, and 29.

Questions: 2, 6, 9, 11, 13, 17, 19, 21, 24, 27, and 31-35 were filler or masking questions designed by the researcher and her chairman.

Using these items, one can compute three measures of bias: a negative bias score, a positive bias score and a net gender communication bias score. The anti-gender (negative) bias score is the percentage of the positive bias items marked wrong. The pro-gender (positive) bias score is the percentage of negative bias items marked wrong. The net bias score is

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the anti-gender bias score (% of positive bias items marked wrong) minus the pro-gender bias score (% of negative bias items marked wrong). If the resulting score is negative, it indicates a net pro-gender bias; if it is positive it indicates a net anti-gender bias. For practical purposes, any individual net bias score in the range of +/- .06 (the difference made by each anti-gender bias item) is probably not significantly different from zero and should be considered a neutral bias score. However, such scores should be included in the computation of the group's mean scores (Sadker & Sadker, 1988).

Note that one does not count "don't know" responses as incorrect for these purposes, because simple ignorance about a fact does not usually indicate a biased attitude. Also note that subtracting percentages of errors (rather than raw numbers) to compute the net bias score controls for the fact that there are more positive-bias items than negative-bias items. The net bias score simply shows the tendency of the person (or group) to think positively or negatively about female communication patterns (Sadker & Sadker, 1988).

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GCQ Bibliography

Birdwhistell, R. (1987). Kinesics and context. Philadelphia: University of Pennsylvania Press.

Brannon, R. (1988). The consequences of sexist language. Paper presented at the Open Symposium on Issues and Research on the Psychology of Women. American Psychological Association.

Crosby, F. & Nyquist, L. (1986). The female register: An empirical study of Lakoff's hypotheses. Language in Society, (178).

Crogg, S. (1990). An open window. Unpublished report to the Oklahoma State Department of Education on Methods of Utilizing Gender Balanced Communication Techniques in Classroom Instruction.

Dweck, C., Davidson, W., Nelson, S., & Enna, B. (1988). Sex difference in learned helplessness: IV. The contingencies of evaluative feedback in the classroom: V. An experimental analysis. Developmental Psychology, (156).

Eakins, B. & Eakins, R. (1978). Sex differences in human communication. Boston: Houghton Mifflin.

Firestone, S. (1989). The dialectics of sex. New York: William Murrow.

Grant, L. (1984). Sex roles and statuses in peer interaction in elementary schools. Paper presented at the American Educational Research Association.

Gruber, K. & Gaehelein, J. (1989). Sex differences in listening comprehension. Sex Roles, (123).

Henley, N. (1983). Status and sex: Some touching observations. Bulletin of the Psychonomic Society, (2).

Henley, N. (1986). Body politics: Power, sex, and nonverbal communication. Englewood Cliffs: Prentice-Hall.

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Henley, N. & Thorne, B. (1977). Womanspeak and manspeak: Sex differences and sexism in communications, verbal and nonverbal. Beyond Sex Roles.

Hirshman, L (1973, December). Female-male differences in conversational interaction. Paper presented at the Linguistic Society of America.

Hyman, B. (1980, August). Responsive leadership: The woman manager's asset or liability. Supervisory Management.

Kester, J. (1990). Sex differences in human communication. Parade.

Kramer, C., Thorne, B. & Henley, N. (1978). Perspectives on language and communication. Signs: Journal of Women in Culture and Society, (3).

Lakoff, R. (1976). Language and women's place. New York: Harper.

Libby, W. (1970). Eye contact and direction of looking as a stable individual difference. Journal of Experimental Research in Personality (4).

Lockheed, M. & Harris A. (1985). Classroom interaction and opportunities for cross-sex peer learning in science. Journal of Early Adolescence, (37).

Lombard, J. & Lavine, L. (1981). Sex-role stereotyping and patterns of self-disclosure. Sex Roles, (7).

Mayo, C. & Henley, N. (EDS). (1981). Gender and nonverbal behavior. NJ: Prentice-Hall.

Montgomery, B. & Norton, R. (1981). Sex differences and similarities in communicator style. Communication Monographs, (48).

Nilsen, A. (1972). Sexism in English: A feminist view. Female Studies VI. Old Westbury, New York: The Feminist Press.

O'Connor, L. (1970). Male dominance: The nitty gritty of oppression. Male Supremacy.

Parlee, M. (1979, May). Conversational politics. Psychology Today.

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Sadker, M. & Sadker, D. (1982). Sex equity handbook for schools. New York: Longman.

Sadker, M. & Sadker, D. (1988). Teachers make the difference. New York: McGraw Hill.

Sadker, M., Sadker, D., Bauchner, J. & Hergert L. (1982). Project intersect: Year II report. Department of Education, National Institute of Education.

Salter, M. Nicholson, H. Williams, M. & Burgess P. (1976). The communication of inferior and superior attitudes by verbal and nonverbal communication signals. British Journal of Science and Clinical Psychology.

Schneider, J. & Hacker, S. (1983). Sex role imagery and use of the generic man in introductory texts: A case in the sociology of Sociology. American Sociologist, (81).

Silveira, J. (1982). Thoughts on the politics of touch. Women's Press, (7).

Slobin, D., Miller. S. & Porter, L. (1983). Forms of address and social relations in business organization. Journal of Personality and Social Psychology, (8).

Sommer, R. (1986). Personal space. Englewood Cliffs: Prentice Hall.

Stanley, J. (1985). Paradigmatic woman: The prostitute. New York: Random House.

Strodbeck, F. & Maris, R. (1986). Sex role differentiation in jury deliberation. Sociometry.

Swacker, M. (1975). (EDS). The sex of the speaker as a sociolinguistic variable. Language and sex: Difference and dominance. Rowley, MA: Newbury House.

Thomas, D. (1983). An analysis of sex differences in teacher-student interaction in elementary/secondary and postsecondary mathematics/science and language/arts/composition/literature classrooms. Unpublished doctoral dissertation, The American University, Washington, D.C.

Zimmerman, D. & West, C. (1975). Sex roles, interruptions and silences in conversation. Language and sex: Differences and dominance. Rowley MA: Newbury House.

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