


Teacher and Student Interaction Patterns in the
College Classroom and the Impact of Gender

by

Mary Lou Cole

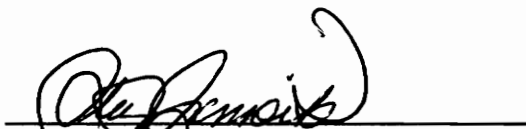
Thesis submitted to the Faculty of the
Virginia Polytechnic Institute and State University
in partial fulfillment of the requirements for the degree of
Master of Arts
in
Counseling and Student Personnel

APPROVED:


Don G. Creamer, Chair


Elizabeth G. Creamer


Catherine McHugh Engstrom


Steven M. Janosik

December 1, 1992
Blacksburg, Virginia

C.2

LD
5655
V855
1992
C645
C.2

Teacher and Student Interaction Patterns in the
College Classroom and the Impact of Gender

by

Mary Lou Cole

Don G. Creamer, Chair

Counseling and Student Personnel

(Abstract)

Previous research has shown that female students participate less often than male students in the interactions of the college classroom. Research findings also have suggested that women students interact less because some teachers differentially treat men and women students. Particular findings have indicated that women college students initiate fewer interactions only in classes taught by men, whereas, other findings have shown lessened interaction only in classes taught by women. Still other results have revealed essentially no difference between men and women students in the numbers and types of interactions in which they engage.

This qualitative study examined (a) differential treatment by teachers based on gender, (b) differential behavior by students based on gender, and (c) differential teaching methods. On-site observations analyzing student-teacher interaction for 16 classes during two summer school sessions and six classes during the fall semester at a

small, private, liberal arts college showed no differences, overall, in male and female student behavior. No evidence was noted of general differential treatment of male and female students by male and female teachers. Additionally, female teachers were not observed to be more likely than male teachers to create a participatory climate for all students.

Acknowledgements

Much time and effort was expended in completing this project. I wish to take this opportunity to acknowledge the help of others, and to extend them a heartfelt thanks.

First, much guidance and support was given by four outstanding committee members. Each one made a unique contribution to this document.

Dr. Elizabeth Creamer introduced me to the realm of women in the college classroom. Her insight in the area of women's studies was invaluable to the completion of this project.

Dr. Cathy Engstrom assisted me in understanding qualitative research. She carefully read each draft to make sure all of the necessary issues were addressed.

Dr. Steven Janosik exemplifies scholarship and excellence in his teaching. His expertise in writing style was essential for the successful completion of this project.

Dr. Don Creamer, my committee chair, has continually directed and encouraged me throughout my experience in the Counseling and Student Personnel Program. His supportive manner has renewed my appreciation for the profession.

Finally, a very special thank you to my husband, Hugh, for his patience, and reassurance throughout this venture. The endeavor would not have been possible without him.

Table of Contents

	Page
Abstract	
Acknowledgements	iv
 CHAPTER ONE: INTRODUCTION	
Nature and Scope of the Problem	1
Purpose of the Study	2
Significance of the Study	3
Definition of Terms	4
Limitations	6
 CHAPTER TWO: LITERATURE REVIEW	
Introduction	10
Differential Behaviors by Male and Female	
Students	11
Existence of Differential Student Behavior	12
No Differential Student Behavior	15
Differential Treatment by Male and Female	
Teachers	16
Existence of Differential Treatment By the	
Teacher	16
No Differential Treatment By the Teacher	19

Differential Teaching Methods by Male and Female	
Teachers	20
Fewer Interactions in Classes Taught By Men ...	20
Fewer Interactions in Classes Taught By Women .	22
Student Development	23
Summary	24

CHAPTER THREE: METHODOLOGY

Description of the Sample and Data Collection	
Procedure	26
Research Site	26
Participants	27
Environmental Factors	29
Class Size	30
Procedure	30
Data Analysis	31

CHAPTER FOUR: RESULTS

Introduction	32
Teacher Behavior	34
Gender	35
Patterns of Interaction by Male and Female	
Teachers	35
Teaching Style	37

Personal Manner	37
Challenge	38
Proximity to Students	38
Availability	39
Humor	40
Respect	40
Support	41
Class Format	41
Level of Activity	42
Student Behavior	42
Gender	43
Patterns of Interaction by Male and Female	
Students	45
Class Size	46
Academic Disciplines	46
Low Interaction	46
Division of Science	47
Division of Humanities	47
High Interaction	47
Division of Fine Arts	47
Division of Health, Physical Education	
and Recreation	48
Division of Education	48
Moderate Interaction	48

Division of Science	49
Division of Humanities	49
Division of Social Science	49
Division of Business	50
Institutional Culture	50
Summary	50

CHAPTER FIVE: CONCLUSIONS

Introduction	52
Overview of the Results	54
Differential Behavior	54
Differential Treatment	56
Differential Teaching Methods	56
Fewer Interactions in Male-Taught	
Classes	57
Fewer Interactions in Female-Taught	
Classes	57
Teaching Style	58
Class Format	58
Class Size	58
Academic Discipline	58
Institutional Culture	59
Alternative Hypothesis	59
Implications of Results	60

Bibliography 65

Appendix A. Letter to Teachers 71

Appendix B. Observational Protocol 73

Appendix C. Field Notes 75

Vita 138

List of Tables

	Page
Table 1 Breakdown of Classes	33

CHAPTER ONE: INTRODUCTION

Nature and Scope of the Problem

Teacher and student interaction in the college classroom is crucial to learning and student development. Prior research demonstrates that interaction fosters student development. Research indicates that development occurs when teaching methods include a verbal exchange of ideas and other forms of class involvement, and dictate that students make decisions (Weathersby, 1981). Some researchers suggest, however, that students do not interact equally in the college classroom.

Previous research findings reveal that women college students are less involved in the sharing of ideas with teachers and other students than are men (Constantinople, Cornelius, & Gray, 1988; Crawford & MacLeod, 1990; Hall & Sandler, 1982; Karp & Yoels, 1974; Krupnick, 1985).

Research findings also suggest that women students interact less because some men and women teachers treat men and women students differently (Hall, 1985; Hall & Sandler, 1982; Johnson, 1984; Karp & Yoels, 1974).

Particular findings indicate that women college students initiate fewer interactions only in classes taught by men (Constantinople et al. 1988; Crawford & MacLeod, 1990; Kajander, 1976; Karp & Yoels, 1974; Statham, Richardson & Cook, 1991; Sternglanz & Lyberger-Ficek, 1977). Other findings suggest that women students speak less often and for shorter periods of time in classes taught by women (Brooks, 1982). Still other results show essentially no difference between men and women students in the numbers and types of interactions in which they engage (Boersma, Gay, Jones, Morrison, & Remick, 1981; Heller, Puff & Mills, 1985).

Purpose of the Study

Those involved in higher education are challenged, daily, to make their institutions hospitable to students of both genders in varying stages of development. The purpose of this study is to help educators become more sensitive to the similarities and differences in learners interactions,

more knowledgeable about research on effective teacher styles, and more aware of classroom equity issues.

Significance of the Study

Studying interaction in the classroom, as well as teaching styles, is important because the classroom environment needs to be one that provides the challenges and supports that foster students' movement from one developmental stage to another (Widick & Simpson, 1978).

Educational planning and program development in colleges and universities should be rooted in theory and research (Chickering & Havighurst, 1981). Previous research indicates that using teaching methods that include a verbal exchange of ideas and other forms of class involvement are more likely to create the interaction between teachers and students and the self-examination that foster student development (Weathersby, 1981).

Prior findings also indicate that class size is the most important element in class participation (Crawford & MacLeod, 1990). Finally, research demonstrates that there are many positive aspects to being educated at a liberal arts school.

Boyer's (1987) study found that 73 percent of students at small liberal arts colleges felt that teachers took a

personal interest in their academic progress (59 percent at all institutions). The study also found that 81 percent of students at liberal arts colleges said they felt encouraged to discuss their feelings about important issues (66 percent of the total sample felt encouraged to do so). Furthermore, his study showed that 91 percent of students from liberal arts colleges felt that teachers encouraged them to participate in classroom discussion (10 percent more than undergraduates at all colleges and universities). This study provides qualitative data regarding faculty and student interaction on a small scale at a private, liberal arts institution.

The research question that guided this study was: Do differences exist, by gender, in the type and quality of interactions between (a) teachers and students, and between (b) students and students in the classroom at a small, private, liberal arts, institution?

Definition of Terms

1. Challenge is viewed as the creation of a classroom situation where "interpersonal interactions and self-questioning occur" (Weathersby, 1981, p. 73,). Students, in these positions are encouraged "to participate in classroom discussion" (Boyer, 1987, p. 145) and to "come to know their

own minds" (p. 151). Students are exposed to the expression of particular thoughts and ideas by the teachers and fellow students, and inspired to examine their own beliefs. This is one aspect of facilitating change and fostering movement from one developmental stage to another.

2. Support is viewed as producing a classroom environment that is hospitable to students of both genders in varying stages of development. Teachers in a supportive environment are sensitive to the similarities and differences in learners and knowledgeable about research on effective teacher and student relationships, as well as productive teaching methods. Both challenge and support are necessary in the resolution of developmental tasks. When "appropriate support is available the amount of challenge or dissonance can increase" (Rodgers, 1980, p. 41).

3. Androgynous teaching styles are viewed as teacher styles which have both masculine and feminine characteristics. Masculine characteristics, here, refer to being more (a) apt to correct students immediately or openly admonish them, (b) teacher-focused, with teachers portraying themselves as the ultimate authority, and (c) direct, or straight-forward, in their approach (Brophy, 1985; Statham

et al. 1991). Feminine characteristics, here, refer to being more (a) student-focused, with acceptance of the fact that students have knowledge also and sometimes need to be brought to that realization, (b) indirect, and (c) supportive of students (Brophy, 1985; Statham et al. 1991).

4. Gender-related treatment is viewed as student treatment characteristic of, or limited to either male or female teachers.

5. Gender-related behavior is viewed as student behavior characteristic of, or limited to either male or female students.

6. Interaction is viewed as teacher-student, or student-student reciprocal behavior, effect, or influence, verbal and/or nonverbal.

Limitations

Several limitations to the study must be considered:

1. Observations were made at a single institution.
2. This particular school is a unique institution with its own special history of commitment to education.

Despite individual, departmental, and divisional differences, it is an institution that influences teachers in particular directions. For this reason, fewer differences may have been found between male and female teachers than might be found in another setting.

3. This particular school is not a research-oriented institution. As a result, teachers are able to devote significant portions of their time to teaching. Because of this, the study may have uncovered greater interaction on the part of students, and possibly, use of better teaching methods, since more time is devoted to teaching and, hopefully, learning how to teach.

4. Given this institution's small classes and student-teacher ratio, and an expectation that students would in fact have occasion to talk in most courses, the study may have revealed less of a difference between male and female students in their classroom activity than one would find on a larger campus with larger classes.

5. The culture of the institution makes central to higher education the issues of (a) equal treatment of male and female students by male and female teachers, and (b)

similar classroom behavior by male and female students. As a result, the study may have uncovered less teacher differential treatment and student differential behavior than would be found on another campus.

6. It also should be noted that male students constituted a majority in only 1 of the 16 classes observed during summer school; an equal number of males and females were found in two classes in summer school. Male students, however, were in the majority in four of the six fall semester classes observed.

7. The use of one researcher could be viewed as a limitation, since no one else was present during the observations to confirm the findings. The use of one researcher in this case, however, allowed for better control during the course of the study. Better control resulted because the researcher involved was experienced in understanding teacher differential treatment and student differential behavior. Such complete and detailed training of persons (students or others) not directly connected with the study was not feasible. The researcher also had a sizable investment of time and reputation at stake;

consequently, there was a strong motive to make accurate judgments and reach appropriate conclusions.

8. The use of this particular researcher may have affected the behavior of the teachers and students somewhat since she is a former employee of the college and the spouse of one of its teachers.

9. No taped recording was made of classes. Data was gathered solely from field notes taken by one researcher.

10. The observations were done during the two summer school sessions. Special conditions in summer school, including the extremely small classes and teacher/student ratios, may have influenced the findings; however, larger classes were observed during the fall semester with similar findings.

11. It was impossible to match male and female teachers because of the small number of women involved in teaching during the two summer school sessions. As a result, the conclusions reached might have been different in another setting.

CHAPTER TWO: LITERATURE REVIEW

Introduction

Discussion in the professional literature emphasizes the need to examine, understand, verify, and support that which happens in the teacher and student interaction process and the impact of gender on the process. Various studies exist regarding the quality and quantity of faculty and student interaction in the classroom.

Certain researchers have found that women college students are less involved in the exchange of ideas with teachers and other students than are men (Constantinople, et al. 1988; Crawford & MacLeod, 1990; Hall & Sandler, 1982; Karp & Yoels, 1974; Krupnick, 1985). Researchers have suggested that women students interact less because some men and women teachers treat men and women students differently

(Hall, 1985; Hall & Sandler, 1982; Johnson, 1984; Karp & Yoels, 1974).

Numerous researchers have indicated that women college students initiate fewer interactions only in classes taught by men (Constantinople et al. 1988; Crawford & MacLeod, 1990; Kajander, 1976; Karp & Yoels, 1974; Statham et al. 1991; Sternglanz & Lyberger-Ficek, 1977). One researcher has revealed fewer interactions only in classes taught by women (Brooks, 1982). Other researchers, however, have found essentially no difference between men and women students in the numbers and types of interactions in which students engage in both male and female teachers classes (Boersma et al. 1981; Heller et al. 1985).

The literature review that follows examines studies that explore (a) differential behaviors of students based on gender, (b) differential treatment by faculty based on gender, and (c) differential teaching methods.

Differential Behaviors by Male and Female Students

Much research has been done over the past 25 years examining student behavior in college classrooms. Some findings show that women students enter into classroom interaction equally with men, whereas other findings indicate they do not.

Existence of Differential Student Behavior

Prior research has shown that women students initiate fewer interactions in the classroom than do men (Constantinople et al. 1988; Crawford & MacLeod, 1990; Hall & Sandler, 1982; Karp & Yoels, 1974; Krupnick, 1985).

One study of 10 classes, 48% female, was completed in the sociology, philosophy, English, psychology, economics, and theology departments at a private university located in a large city in the northeastern United States. Observational and questionnaire data revealed that women students played a less active role in classes regardless of the gender of the teacher (Karp & Yoels, 1974).

An analysis, strictly observational, of student and teacher interaction was completed in 60 classes at Harvard. Each class was made up of 9-115 students each, involving a total of 870 females and 1,414 males. The study found a tendency for women students to interact less. This occurred mainly in classes where male students were the majority (Krupnick, 1985).

An observational study of 48 classes at Vassar in the arts, social science, and natural science divisions of the curriculum showed women students to be slightly less active in the classroom than men (Constantinople et al. 1988).

Male students, in this study, constituted a majority of those present in only a few classes.

A self-report study at two different schools, West Chester and Yale University, involved 68 classes (Crawford & MacLeod, 1990). The first sample surveyed consisted of 614 students (347 females and 267 males), and 31 teachers (25 males and 6 females). The part of the study executed at the first institution found that sizes of the classes influenced interaction; however, student or teacher gender did not.

Female students made up 52 percent of the sample at the second institution and 38 percent of the classes were led by female teachers (Crawford & MacLeod, 1990). The findings in this part of the study revealed female students to be less likely than male students to be involved in the verbal exchange of the classroom. Class size was clearly the variable of most importance to student participation at both the larger university and the smaller college.

Crawford and MacLeod (1990) found that women students' rationale for nonparticipation involved numerous concerns. These concerns included (a) ideas not well enough formulated, (b) not knowing enough about the subject matter, (c) seeming unintelligent in the eyes of their fellow students, and (d) other students not respecting their point of view.

Certain researchers believe that communication style differences often are found between men and women students (Hall, 1985). These researchers argue that women, occasionally, (a) are overly polite or hesitant in making comments, (b) use questions, such as "Don't you think?" (c) use qualifiers too often, (d) make statements with a questioning intonation, or (e) smile inappropriately while making an important statement (Hall, 1985).

Past socialization in elementary and secondary schools is also cited as playing a causal role in maintaining classroom inequality at the college level (Hall & Sandler, 1982). The very act of speaking signifies an avowal of equality and goes against the socialization of many women (Campbell, 1985). As a result, speaking up becomes difficult and threatening (Campbell, 1985). Though many women submit superior written work, even the brightest often remain silent in class, and wait until class is over to approach the teacher about issues raised in the discussion (Boyer, 1987).

Other researchers believe that women students simply need confirmation of their ability to learn. These researchers stress that women have been taught for years that men are more able than women to reason (Belenky, Clinchy, Goldberger & Tarule, 1986). To correct this

misunderstanding, women need opportunities to observe both men and women teachers in situations where they solve and fail to solve problems (Belenky et al., 1986).

Perry (1972) describes a developmental progression involving, first, teachers appearing to students to be authorities who know all the right answers, and ultimately, being revealed as learners also. This is a revelation that might occur earlier if teachers would think openly with their students in the classroom (Belenky et al. 1986).

No Differential Student Behavior

Other studies have shown that women students do not initiate fewer interactions in the classroom than do men (Boersma et al. 1981; Heller et al. 1985).

Observational data from 50 classes, 2,163 students (54% male), at the University of Washington revealed no real difference in the quantity and quality of interactions in the college classroom (Boersma et al. 1981). Male students' activity was found to be slightly increased in classes taught by female instructors and female students' activity was found to be slightly increased in classes taught by male teachers.

Female-taught classes in the study (Boersma et al. 1981) were matched with male-taught classes similar in

topic, size, and class level. The study showed that men were not more likely than women to respond to a teacher's initiating comment, nor were men more likely to start the interaction process with the professor.

Heller et al. (1985) surveyed 429 (216 females and 213 males) undergraduates at Franklin and Marshall College. Students in psychology, economics, and classics courses volunteered to complete a survey. Approximately equal numbers of males and females were included in each class sample. Data revealed no difference in the quantity and quality of interactions.

Differential Treatment by Male and Female Teachers

Research over the past 25 years also has examined student treatment in college classrooms. Certain research findings indicate that men and women teachers treat men and women students differently, whereas other findings show no evidence of differential treatment.

Existence of Differential Treatment by the Teacher

Previous researchers have suggested that women students interact less because some teachers treat them differently than male students (Hall, 1985; Hall & Sandler, 1982; Johnson, 1984; Karp & Yoels, 1974).

Karp and Yoels' (1974) study of 10 classes, 48 percent female, determined that male teachers were less likely to call directly on women students than on men students. Female teachers in the study were found to be just as likely to call on women students as on men students.

Two types of differential treatment are cited by Hall (1985): (a) behaviors that single out women, such as using sexist humor or making belittling comments about women in general (Johnson, 1984), and (b) behaviors that overlook women, including interrupting women when they are speaking, leaving them out of discussions on the presumption that they do not want to speak and must be shielded from class discussion, and attributing a woman's comment or recommendation to a subsequent male speaker (Hall, 1985).

Differential treatment of men and women students on college campuses had been considered by many to be a thing of the past (Hall, 1985). However, in recent years, many institutions have appointed special panels to assess the conditions in their colleges and universities and have found that differential treatment still exists (Blum, 1991).

The results of one such study at the University of Virginia are discussed by Thorner (1989). The study reveals continuing student concerns that educating women is not as important as educating men. The results of the study also

uncovered continuing student anxiety due to certain teachers making sexist remarks in their classes.

Various other research studies are examined by Burdenski (1989), including those done by the Association of American Colleges, Harvard, MIT, and Michigan State. Findings in the studies are consistent that, in co-educational environments, men students receive more than twice the time and attention from teachers as women students receive.

Blum (1991) addresses the investigation of women's studies programs, and other curricular concerns. A recently-released report from these investigations reviews the lack of improvement since a 1973 report at Case Western Reserve University.

Burdenski (1989) also discusses a 1987 Carnegie Foundation study which found that men are expected to dominate classroom communication, a situation which persists despite the ascendancy of female enrollments on most campuses (Boyer, 1987). Women students receive less eye contact during lectures, less attention when they speak, and more frequent interruptions by fellow students and teachers (Burdenski, 1989).

No Differential Treatment by the Teacher

Other studies have found no evidence of differential treatment of students (Crawford & MacLeod, 1990; Heller et al. 1985; Krupnick, 1985; Sternglanz & Lyberger-Ficek, 1977).

The study by Sternglanz and Lyberger-Ficek (1977) of 60 classes at State University of New York at Stony Brook determined that neither male nor female teachers responded differentially to male and female students. Krupnick's (1985) study at Harvard, involving videotaped classes, also found no evidence of significant differences in the ways teachers responded to men and women students.

The self-report study by Heller et al. (1985) revealed no differences in any of the behaviors that Hall and Sandler (1982) discussed. Women perceived less faculty use of sexual humor than did men. Moreover, the reported frequency with which women were asked analytical questions that required critical skills exceeded that reported by men, and the frequency with which women were asked simple factual questions was lower than that for men. The study completed by Crawford and MacLeod (1990), at both institutions, also showed that students perceived teachers to treat their male and female students alike when class sizes were similar.

Differential Teaching Methods by Male and Female Teachers

Prior research has examined teaching methods in college classrooms. Some findings indicate that women students interact less in male-taught classes, whereas others show lessened interaction in female-taught classes.

Fewer Interactions in Classes Taught by Men

The findings of particular researchers have suggested that women college students initiate fewer interactions only in classes taught by men (Constantinople et al. 1988; Crawford & MacLeod, 1990; Kajander, 1976; Karp & Yoels, 1974; Statham et al. 1991; Sternglanz & Lyberger-Ficek, 1977).

Karp and Yoels (1974) found that women's participation sharply increased when women instructors were present in the classroom. Kajander (1976) noted that both men and women students initiated more contacts, answered more questions, and received more feedback in classes taught by women teaching assistants.

The study by Sternglanz and Lyberger-Ficek (1977) at State University of New York found that women students responded less often than men to teacher initiations of interaction and initiated fewer interactions themselves in classes taught by men. Male students were in the majority

more often than females in classes taught by male lecturers; there was no difference in classes taught by female lecturers. Male students engaged in proportionately more student-teacher interactions than female students in male-taught classes. This particular study found no gender differences in classes taught by women.

Constantinople et al. (1988) found gender of the instructor to influence classroom behavior in interaction with another factor, most often division of the curriculum. The division of the curriculum in which a particular course existed was found to be the strongest and most consistent factor in influencing both student and teacher behaviors, with more frequent interaction in the arts and less interaction in the natural sciences.

Women teachers in Crawford's and MacLeod's (1990) study were found to be more effective than men teachers at originating the type of classroom situation where student questions and discussions were esteemed regardless of the gender of the student. Female teachers were found to be better at making all their students feel known and their participation valued. The study determined that whether in a large university or a small college, class size was the variable of most importance to student participation.

Statham et al. (1991) revealed that women professors are more concerned than men professors with involving students extensively in the learning process. Brophy (1985) alleged that male teachers tend to be highly teacher-centered and direct in the classroom. Women teachers in Statham et al. (1991) seemed to take a more person-oriented, student-centered approach to teaching than did the men.

Sandler (1988) stated that certain researchers are examining the possible beneficial effects of particular characteristics of women's speech and behavior. These characteristics, researchers believe, may be helpful in promoting an unbiased scholarly climate based more on collaboration than on competitiveness.

Fewer Interactions in Classes Taught by Women

One study has found fewer interactions by women students in classes taught by women (Brooks, 1982). This study of 16 classes, which recorded verbal behavior by tape recordings and paper-and-pencil counts at the Graduate School of Social Work, University of Houston, showed women students speaking significantly less often and for shorter periods of time than men in classes taught by women.

A total of 48 hours of classroom interaction was monitored, 24 hours each in male and female teachers'

classes, with 72 male and 222 female students represented. Male students displayed the following: (a) more aggressiveness (interruptive behavior) than women students in classes taught by both men and women professors and (b) more assertiveness (frequency and duration of speech) in classes taught by women instructors only.

Stimpson (1987) believes that, psychologically, young male students fear the authority of the female teacher, and accept the authority of the male teacher. Brooks (1982) concurs with Hagen and Kahn's (1975) finding that males who have to interact with women in equivalent or higher capacities undergo a reduction in self-esteem and respond by trying to reassert dominance over the same or higher status woman.

Student Development

Chickering (1969) discusses, in depth, certain conditions or prerequisites that impact developmental change in individuals. These major influences include: (a) clarity of objectives and internal consistency, (b) institutional size (c) curriculum, (d) teaching, and (e) evaluation. Many of the goals and much of the content of various college courses can be dealt with in ways that reinforce students' capabilities for accomplishing their chief developmental

tasks (Chickering et al. 1981). Many of our standard teaching methods can be handled in ways that foster students' individual development through direct learning experiences and teacher and student interaction (Chickering et al. 1981).

Summary

Learning is a process of discovery in which the student is the main agent, not the teacher (Boyer, 1987). The women students, in Belenky et al. (1986), expressed a belief that they possessed latent knowledge, and the type of teacher they desired was one who would help them articulate and expand that knowledge. They preferred the midwife-teacher, someone who would assist them in giving birth to their own ideas.

Boyer (1987) spoke of one teacher also who likened the position of teaching to that of being a midwife, encouraging and coaching students. This particular teacher emphasized that teachers, as a whole, need to help students come to know their own mind, to become independent thinkers.

The women in Belenky et al. (1986) also needed confirmation of themselves as knowers. They needed to be helped to recognize that there was something good already present within them. Boyer (1987) discusses yet another

teacher who believed it was his responsibility to bring out the potential that lay idle within the student.

Katz (1988) theorizes that further knowledge is necessary about how students learn. He also emphasizes that information is needed concerning their motivations and aspirations, and the conditions that inhibit their learning or make it possible.

In trying to design an education appropriate for all students, faculty and administrators must take into consideration today's modern university. This is a university that presents many challenges because of the diversity of its student body (Statham et al. 1991). Once knowledgeable concerning such diversity, we must then allow research and theory to guide in educational planning and program development, thereby promoting the full development of college students of both genders.

CHAPTER THREE: METHODOLOGY

Description of the Sample and Data Collection Procedure

This chapter discusses the methodology that was used in the study. Included in the discussion is information concerning the research site, participants, environmental factors, class size, procedure, and data analysis.

Research Site

On-site observations were conducted at a small, private, liberal arts college in the southwestern region of Virginia. A single institution was chosen for study due to the resource limitations of the researcher. This particular school was selected as the observation site because (a) few previous studies have been done at such an institution; (b) it is a liberal arts school; and (c) the small college, with its small classes, and low student-teacher ratios, seemed to

lend itself to an investigation that might extend earlier research findings.

These earlier research findings include Astin's (1977) assertion that learning occurs when the group of learners is small and teachers and students interact. Other findings in the area to be investigated include the positive aspects of being educated at a liberal arts school (Boyer, 1987).

The researcher conducted observations in 16 classes in all seven academic divisions: Business, Education, Fine Arts, Health, Humanities, Science, and Social Sciences to obtain qualitative data regarding faculty and student interactions in the college classroom. The observations were done during the fourth and fifth weeks of the two five-week summer sessions at the institution studied. It was believed that the summer school classes could appropriately be seen as similar to the fall classes in size. However, to determine whether or not these expectations actually were the case, a total of six additional observations were done during the fourth week of the fall semester in four of the seven academic divisions.

Participants

The first series of observations completed during the two summer school sessions involved 16 classes, made up of

151 students (102 females and 49 males) who were enrolled in the 100, 200, 300 and 400 level courses. The 17 teachers observed included 4 females and 13 males. The second series of observations, made during the fall semester, involved classes consisting of 123 students (62 females and 61 males) who were enrolled in the same 100, 200, 300, and 400 level courses. Six of the teachers (two females and four males) observed during the summer school sessions were observed once again. Forty-two percent of the total student population and forty-three percent of the total teacher population were examined during the two periods of observation.

All classes offered during the summer school sessions were observed except for the physical education activity classes and the drama classes. These classes were omitted because it was believed the course design (i.e. play rehearsals and exercise periods) would not permit the type of interaction the study was designed to observe. These classes also met outside of the regular classrooms, in the college gymnasium and an auditorium on campus. It was believed these large, spacious areas would not permit the type of close observance demanded by the study. The study, overall, involved an unequal number of men and women

teachers due to the small number of women teaching during the two summer school sessions.

The institution chosen for the study is a private, church-affiliated, liberal arts college. The college has (a) been coeducational since 1922, (b) 36% female and 64% male faculty, and (c) no history of reported sexual discrimination.

Environmental Factors

The classrooms were not air conditioned. However, the availability of a substantial number of windows and outside doors, along with the chillier, early morning mountain air, easily permitted the rapid cooling of the classrooms.

The desks in the majority of the classrooms were arranged in rows. They were not, however, bolted to the floor, and were sometimes grouped in circles or turned, individually, toward fellow students when warranted by discussion.

The length of the lectures in summer school was 85 minutes. A large number of teachers gave the students breaks after 40 minutes, allowed them to stand and stretch, or permitted them to leave the room to get a drink of water. The classes in the fall semester were 50 minutes and 75

minutes in length. No breaks were given during these observations.

Class Size

Seven classes (44%) were made up of 1-6 students each; four classes (25%) consisted of 7-12 students each; another four classes (25%) involved 13-18 students each; and one class (6%) included 26 students during the two summer school sessions. Three classes (50%) were made up of 13-18 students each; two classes (33%) consisted of 19-24 students each; and one class (17%) involved 25 or more students during the fall semester observation. These six classes are representative of fall and spring semester classes.

Procedure

Teachers were sent a letter (Appendix A) that requested their participation in the study and assured them complete anonymity and confidentiality of data. A response form was included at the end of the letter that asked for a preferred date for the observation.

During the 17 observation experiences in summer school and the 6 observations in the fall semester, the data collection method involved comprehensive note taking. Specifically, the researcher, in recording the field notes,

attempted to capture every event transpiring in the classroom that affected the teacher and student interaction process.

Data Analysis

The data analysis occurred in several forms and at different stages. A written report was prepared from the field notes immediately following each classroom observation. The report included the Observation Protocol (Appendix B), made up of the particular student and faculty behaviors that had been identified in the literature as having an impact on the quality of the classroom environment for learning and positive interpersonal relationships (Constantinople et al. 1988; Hall & Sandler, 1982). The report also incorporated other aspects of the environment that might enhance or inhibit the interaction process, such as physical environmental factors (e.g. time of day, classroom temperature, lighting, availability of windows, length of lecture) (Roe, 1989).

After completion of the written reports, categories of observations were identified, denoting patterns found across the classes. Next, properties, or characteristics, of those categories were identified.

CHAPTER FOUR: RESULTS

Introduction

On-site observations analyzing student-teacher interaction for 16 college classes in the two summer school sessions and six classes during the fall semester, 1992, revealed no apparent differential treatment of men and women students by men or women teachers. Observations revealed essentially no differences between men and women students in the numbers and types of interactions in which they engaged, in classes taught by both men and women teachers. (See Appendix C.)

The categories identified, following the written reports, denoting patterns were: (a) teacher behavior, (b) class format, (c) level of activity, (d) student behavior, (e) class size, and (f) academic discipline. The properties, or characteristics of teacher behavior identified were: (a) gender style, (2) patterns of

Table 1

Breakdown of Classes

Course	Teacher Gender (m/f)	Student male	Student Gender female	Class Format
Intro. to Computers				
Summer School	m	0	3	Lecture
Fall Semester	m	9	7	Lecture
Physics				
Summer School	m	1	3	Lecture
Physical Science				
Summer School	m	2	5	Lec-Dis
Biology				
Summer School	m	10	9	Lec-Dis
Statistics				
Summer School	m	4	12	Lec-Dis
Developmental Math				
Summer School-1 obs.	f		1	Lec-Dis
Summer School-2 obs.	f	1	1	Lec-Dis
Fall Semester	f	23	14	Lec-Dis
Intro. to NT				
Summer School	f	4	9	Lecture
Summer School	m	4	10	Lec-Dis
Intro. to OT				
Summer School	m	1	8	Lec-Dis
Fall Semester	m	7	10	Lec-Dis
World Literature				
Summer School	m	1	3	Lec-Dis
Art Appreciation				
Summer School	m	5	7	Discussion
Stress Management				
Summer School	m	3	10	Discussion
Human Growth & Devel.				
Summer School	f	6	8	Discussion
Foundations of Education				
Summer School	m	1	6	Discussion
Fall Semester	m	4	9	Discussion
Criminal Justice				
Summer School	f	2	2	Lec-Dis
Fall Semester	f	13	8	Lec-Dis
Intro. to Psychology				
Summer School	m	0	4	Lec-Dis
Fall Semester	m	11	9	Lec-Dis
Principles of Accounting				
Summer School	m	2	2	Lec-Dis

interaction by male and female teachers, and (c) teaching style, involving personal manner, challenge, proximity to students, availability, humor, respect, and support.

The properties, or characteristics, of student behavior identified were: (a) gender, and (b) patterns of interaction by male and female students. The properties of differences based on academic disciplines identified were: (a) low interaction, (b) high interaction, and (c) moderate interaction.

Teacher Behavior

Behaviors that might represent subtle favoritism were not observed (See Appendix B). The study did not show, overall, that men and/or women teachers in the classrooms were less likely to (a) call directly on women students, (b) respond to their questions, (c) acknowledge and expand on their comments, (d) probe for elaboration, or (e) challenge them.

Teachers, men and women, in the classrooms did not fail to (a) maintain close proximity, (b) make eye contact, (c) assume attentive postures, or (d) use proper voice tones. Teachers were also found to (a) use appropriate humor, (b) never note the physical appearance of women students, and

(c) never question women's career goals or academic ability.
(See Appendix B for a complete list of behaviors.)

Gender

A pattern of male teachers being more teacher-centered in their approach than female teachers also was not found. The study showed the majority of teachers, both male and female, to be very student-centered, warm, and supportive of both men and women students. Women teachers were not found to be more effective than men teachers at originating the type of classroom situation where student questions and discussions were esteemed regardless of the gender of the student.

Patterns of Interaction by Male and Female Teachers

Men and women teachers asked indirect factual and analytical questions, some of which, they answered themselves. They asked direct factual and analytical questions of individuals, male and female, and allowed the same response time for both men and women.

Teachers called on men and women students, equally, to answer questions, whether or not the students had their hands raised. One male teacher did admit, in a "Stress Management" class, to finding it difficult to ask questions

of one particular female student because tears filled her eyes when she did not know the answer to his question.

A majority of the teachers responded with nods and other positive gestures to students' answers to their direct and indirect questions. They often probed for elaboration in the answers, which, sometimes, led to asking further questions of the students. Teachers responded positively and attempted to answer, thoroughly, those questions posed by both men and women students. They acknowledged student comments, and expanded on those comments, equally.

A majority of the teachers addressed both men and women students by their first names. One male professor used the last names of students, preceded by "Mr." or "Miss." Four teachers, all male, did not call students by name.

The focus of attention in one of the 13 male teachers' classes was found to lean chiefly in the direction of the teacher rather than the students. The course, "Introduction to Computers," centered mainly around the teacher's knowledge in the area. That knowledge flowed in one direction, from teacher to student. Little opportunity was given for input from the students, male or female.

A similar situation was found in two other classes. The "Physics" class was taught by a male professor, and "Introduction to New Testament" class was taught by a female

professor. The teacher in the "Physics" class did attempt to ask questions in the beginning minutes of the class. However, the students were unable to answer most of them, so he stopped asking questions and began lecturing. Few opportunities were given during the larger part of the class period in the "Introduction to New Testament" class for students, both male and female, to articulate or expand the knowledge they possessed. They simply sat quietly and took notes for the lecture portion of the class period.

Teaching Style

Though teaching styles were found to be different, they were not gender specific.

Personal Manner. Particular teachers, both male and female, seemed to evoke a special atmosphere, one of excitement about the subject under discussion. Their personal manners involved a vibrant and contagious enthusiasm.

A limited number of teachers had more serious personal manners. One male teacher, discussed earlier, teaching the "Introduction to Computers" class, interjected very little humor, smiled rarely, and had a speaking voice that was somewhat monotone. He was totally involved in teaching the

material, and made few attempts to engage the students. Little student interaction resulted in this class.

Challenge. The majority of the teachers, both male and female, seemed to inspire students to express their own thoughts and ideas. Most of the teachers showed an optimism about the potential that lay within the students. They confidently challenged both the men and women in the class to learn, by asking penetrating questions and expecting thoughtful answers.

The majority of the teachers, both male and female, repeatedly probed for responses and elaboration from each of the students, especially the less verbal students. Many walked the aisles as they taught, stopping at the desks of students who were not interacting, and making eye contact with them, in an attempt to draw them out. Often, their attempts were successful and the students, male and female, began to interject their own thoughts and ideas about the particular subjects under discussion.

Proximity to Students. The teachers, generally, stood in front of the students and moved back and forth between the students and the chalkboard as they taught. One male teacher sat in a circle of chairs with the students. One

female teacher sat on her desk for the first part of the class period and then joined the students in a circle of chairs for the remainder of the period.

The teacher's proximity to students was seen to increase the students' involvement. Students in a closer proximity to the teachers had a tendency to interact more frequently. Walking in a particular students direction, simply turning toward a student, or just leaning in their direction, while making eye contact with that student brought about more involvement.

Availability. The early arrival of the teacher and ensuing conversation brought about more interaction on the part of students. Heavy interaction during class was noted in those classes where the teachers, both male and female, arrived early and spent that time conversing with the students.

Some of the teachers were present 10 to 15 minutes before class began and were able to be involved in formal and informal conversation with the students. These conversations generally consisted of questions about the class (e.g. assignments, upcoming exams) or informal chit chat (e.g. one another's well being, the weather).

The majority of the teachers, both male and female, made themselves available for questions at the end of class, and encouraged the students to come by their offices for additional help. Many expressed the desire that the students succeed in the course they were currently taking and, overall, in their college careers. In all cases, the teachers were the last to leave the classroom.

Humor. The greatest amount of interaction during class was noted in those classes where the teachers, both male and female, spent time in humorous conversation with the students before class began. Frequently, during this time, the teachers told stories or made amusing comments to particular students. This interaction was beneficial in fostering a more relaxed atmosphere and helped to pull other arriving students into the interaction process. The interaction during this time generally continued after class convened.

Respect. Many of the teachers, male and female, conveyed a sense of respect for students' ideas. They regularly permitted the students to challenge teachers' beliefs or question particular statements made by the teachers in class. They gave students ample opportunities

to clarify their own positions on particular points or subjects under discussion.

Support. The majority of the teachers were very careful to support and encourage the students in their attempts to answer questions and make comments in class. They sought to lead male and female students in the right direction when they were indecisive about an answer, helping them to respond on their own.

Once the students arrived at an appropriate answer, the teachers would encourage the students by discussing the correctness and appropriateness of their answers. Teachers would often emphasize not being afraid to do more of this in the future.

Class Format

The formats for the classes consisted of discussion, lecture, and lecture-discussion. The majority of the teachers, both male and female, employed a lecture-discussion format.

Only one teacher, a male, used a strictly-lecture format. The course involved an "Introduction to Computers." Four teachers, one female and three male, employed a rigorous discussion format. The female teacher taught a

course in "Human Growth and Development." The male teachers taught courses in "Stress Management," "Art Appreciation," and "Foundations of Education." Slightly less interaction, however, was noted in the "Foundations of Education" class during the fall semester observation than in the summer school observation.

Level of Activity

The noise and activity level was very high in two of the four female-taught classes, "Human Growth and Development" and "Introduction to New Testament." The students, men and women alike, were very loud and boisterous. The teachers, in both instances had to ask for the students' attention before beginning the classes. This situation did not occur in any of the classes with male teachers. In a third female-taught class, "Developmental Math," one male student was particularly disruptive. He appeared quite aggressive when verbally challenging the teacher.

Student Behavior

The study revealed an equal amount of male and female student interaction in 12 of the 16 classes observed in summer school. Two classes were made up, solely, of female

students, and two other classes, "Human Growth and Development," and "New Testament," under the male teacher, had predominantly female interaction. An equal amount of interaction was noted in five of the six classes observed during the fall semester. Few interjections were made by female students in the "Criminal Justice" class.

Gender

Overall, there was no significant difference by gender in (a) asking questions or making follow up comments, (b) the number of interactions, (c) who volunteered information, (d) who was first to respond to teachers' general questions, (e) who responded to teachers' direct questions, (f) who responded to other students, or (g) who interacted with the teachers just before or after class.

Women were not observed to use speech which contained (a) hesitation and false starts, (b) a questioning intonation, (c) a high pitch, (d) inappropriate smiling, (e) tag questions or an excessive use of qualifiers, (f) excessively polite speech, or (g) averting eyes. (See Appendix B for a complete list of behaviors.)

Two classes had predominantly female interaction; the "Human Growth and Development" class was taught by a woman and the "Introduction to New Testament" class was taught by

a man. Attempts by the female teacher in the "Human Growth and Development" class to get the male students involved did result in interaction by one male student.

A "cross-sex" effect may have been observed in the "Introduction to New Testament" class which was taught by a husband and wife on alternate days. The male teacher received much input from a group of four or five women sitting at desks located in the left front corner of the classroom. They answered most of the questions he asked, made comments, and asked questions of him. On the previous day, under the female teacher's instruction, they rarely spoke.

A difference in teaching styles may have accounted for the difference, however. The male teacher walked back and forth across the front of the classroom when teaching, and frequently stopped in front of the group of female students, speaking almost directly to them.

The female teacher, on the previous day, walked back and forth across the front of the classroom, however, she did not stop in front of the women. She also moved back the aisles, and received two or three responses from one particular female student sitting at the back of the middle aisle. This teacher, however, received little response from the class as a whole.

More interaction on the part of male students was noted in one female-taught, "Criminal Justice" class in the fall semester. The women in the class were extremely quiet for the entire class period, while the men answered questions, made follow up comments, and asked questions frequently.

Patterns of Interaction by Male and Female Students

A majority of the students, both male and female, interacted in the various classes. Some volunteered information freely, and others did so with the encouragement of the teacher.

Occasionally, students seemed almost eager to interject their thoughts and ideas, sometimes yelling out answers, two or three at a time, without waiting to be recognized by the teacher. They were also attentive to expressions of new ideas by their fellow students, turning their chairs toward those nearby who were attempting to express their thoughts and ideas about a particular subject.

The less verbal male and female students would often, answer questions reluctantly or make comments with noticeable questioning intonations. They would, sometimes, look down at their books and answer questions slowly and hesitantly, making little eye contact with the teacher. As the class periods progressed, however, most students,

generally, began to speak more frequently and appeared to be gaining a certain amount of confidence in their abilities to express ideas also.

When involved in informal conversation before and after class, female students generally interacted with other female students. Male students, during this time, usually interacted with other male students.

Class Size

Intense and enthusiastic interaction between teachers and students and students and students occurred during the summer school observations in classes made up of 3-26 students. An equally good amount of interaction was noted during the fall semester observation when classes were somewhat larger, 13-37 students.

Academic Disciplines

Low, moderate, and high amounts of interaction were noted in the various academic disciplines.

Low Interaction

The lowest student participation rates existed in two classes in the Division of Science and one class in the Division of Humanities.

Division of Science. One Division of Science class, "Introduction to Computers," revealed low participation rates by male and female students during both the summer school and fall semester observations. A second science class, "Physics," also showed low rates of participation during the summer school observation, even after attempts by the teacher to involve students in the discussion of difficult material.

Division of Humanities. One class in the Division of Humanities, "Introduction to New Testament," a team-taught class on alternate days revealed low participation rates for a major portion of the class time. This occurred under the female professor during the summer school observation.

High Interaction

The highest student participation rates were found in one class in the Division of Fine Arts, one class in the Division of Health, Physical Education, and Recreation, and two classes in the Division of Education.

Division of Fine Arts. The class in the Division of Fine Arts, "Art Appreciation," revealed heavy interaction. Both male and female students were involved.

Division of Health, Physical Education, and Recreation.

The class in the Division of Health, Physical Education, and Recreation, "Stress Management," also revealed heavy interaction. Both male and female students were involved here also.

Division of Education. The class in the Division of Education, "Human Growth and Development," revealed heavy interaction. Instigations to interaction came largely from the female students in this class. The "Foundations of Education" class in this division revealed heavy interaction also. Slightly less interaction, however, was noted during the fall semester observation than during the summer school observation. Teachers in these four classes seemed to take a more active role in instigating and responding to student discussion.

Moderate Interaction

Moderate amounts of student interaction were noted in four classes in the Division of Science, two classes in the Division of Humanities, two classes in the Division of Social Sciences, and one class in the Division of Business.

Division of Science. A third class in the Division of Science, "Physical Science", revealed a moderate amount of interaction as did the "Biology" class. One math class in this division, "Statistics," had moderate amounts of discussion also. The other math class in this division, "Developmental Math," revealed moderate amounts of interaction when observed during both the summer school and fall semester.

Division of Humanities. The "World Literature" class in the Division of Humanities revealed a moderate amount of interaction. An approximate amount of interaction was noted in the "Old Testament" class in this division during both the summer school and fall semester observations.

Division of Social Sciences. The Division of Social Sciences, "Criminal Justice" class, revealed a moderate amount of interaction in both the summer school and fall semester observations. However, discussion in the observation during the fall semester came predominantly from the male students. The "Introduction to Psychology" class in this same division revealed slightly less interaction, in both the summer and fall observations, than the other classes with moderate amounts of interaction.

Division of Business. The one Division of Business class was "Principles of Accounting". A moderate amount of interaction was noted here also.

Institutional Culture

Manifestations of the culture of this institution were noted during the observations. These include: (a) the equal treatment of men and women students by men and women teachers, (b) similar interaction patterns by men and women students, and (c) androgynous teaching styles. Fairness and impartiality were observed in the classrooms.

Summary

Overall, this particular study disclosed a group of male and female teachers who deal fairly, honestly, and equally with their male and female students. The study showed a group of teachers who are very student-centered, cordial, and reassuring in their teaching approach.

Results of the study indicated that male and female teachers are very effective at originating the type of classroom situations where student questions and discussions are prized regardless of the gender of the student. Data showed conscientious teachers, both male and female, eliciting excitement from the students concerning their

fields of study. Results of the data divulged students, male and female, who appeared zealous to interject their thoughts and ideas about particular fields of study, sometimes calling out answers without waiting to be acknowledged by the teacher. Results revealed students who are intent on giving heed to opinions expressed by their fellow students.

The results of the study showed no apparent differential treatment of men and women students. The results also demonstrated essentially no differences between men and women students in the numbers and types of interactions in which they engage. Teaching methods, though different, were not found to be gender specific.

Many other aspects of the college environment, however, were shown to influence interaction in the college classroom. Teaching style, class format, class size, academic discipline, and institutional culture all proved to affect exchange.

CHAPTER FIVE: CONCLUSIONS

Introduction

On-site observations were conducted at a small, private, liberal arts college in the southwestern region of Virginia. The researcher conducted observations in 16 classes in all seven academic divisions: Business, Education, Fine Arts, Health, Humanities, Science, and Social Sciences to obtain qualitative data regarding teacher and student interaction in the college classroom.

The observations were done during the fourth and fifth weeks of the two five-week summer sessions at the institution studied. To determine whether or not similar interaction patterns occurred during the regular semester, six additional observations were done during the fourth week of the fall semester in four of the seven academic divisions.

All classes offered during the summer school sessions were observed except for the physical education activity classes and the drama classes. These classes were omitted because it was felt that the course design and the physical facilities would mitigate interaction.

The 16 classes consisted of 151 students (102 women and 49 men) enrolled in the 100, 200, 300 and 400 level courses for the two summer school sessions. The 17 teachers involved in the summer school observations included 4 females and 13 males. The 6 classes consisted of 123 students (62 females and 61 males), enrolled in the 100, 200, 300, and 400 level courses in the fall semester. The six teachers in these classes included two females and four males. The study, overall, involved an unequal number of men and women teachers due to the small number of women teaching during the two summer school sessions.

The purpose of the study was to examine, based on gender (a) differential treatment of students by faculty, (b) differential behaviors of students, and (c) differential teaching methods. The underlying research question for the study was the following: Do differences exist, by gender, in the type and quality of interactions between (a) teachers and students, and between (b) students and students in the classroom at a small, private, liberal arts, institution?

Overview of the Results

Contrary to the researcher's expectations, observations analyzing student-teacher interaction for 16 college classes in summer school and 6 classes during the fall semester revealed little evidence of differential behavior on the part of men and women students. As anticipated, behaviors that might represent subtle discrimination by men and women teachers also were not observed. Neither were teaching approaches found to be gender specific.

Differential Behavior

The observational data support the findings of Boersma et al. (1981) and Heller et al. (1985) who reported essentially no difference between men and women students in the numbers and types of interactions in which they engage, in classes taught by both men and women professors. Evidence of male students dominating classroom discussion was found in only one class, a "Criminal Justice" course, taught by a woman during the fall semester. The same teacher taught the class during summer school, with two female and two male students. Evidence of male domination was not noted in the summer; however, the teacher did make numerous efforts, without success, to get one female student to enter into the discussion.

The teacher was not observed making attempts to involve the female students who were not interacting during the class in the fall semester. The 8 female students, at that time, rarely spoke throughout the entire class period.

The 13 male students discussed "Should marijuana be legalized?" and "What constitutes obscenity?" This was the only instance noted which lends support to Krupnick's (1985) findings that male students tend to dominate classroom discussion, or to a 1987 Carnegie Foundation study that men are expected to dominate classroom communication (Burdenski, 1989).

The noise and activity level was found to be very high in two of the four female-taught classes. The students, men and women alike, were very loud and boisterous. The teachers, in both instances, also tended to speak loudly to and move very quickly around the room.

In a third female-taught class, one male student was particularly disruptive. He appeared quite aggressive when verbally challenging the teacher. This was the only instance during the observations which lends any support to Hagen and Kahn's (1975) finding that males who have to interact with women in equivalent or higher capacities undergo a reduction in self-esteem and respond by trying to reassert dominance over the same or higher status woman.

Differential Treatment

The observational data revealed only one incident which lends any support to Hall and Sandler's (1982) assertion that female students interact less because some faculty members differentially treat men and women students. The incident occurred in a "Stress Management" class. A male teacher admitted to finding it difficult to ask questions of a particular female student because tears filled her eyes when she did not know the answer to the question he was asking.

Differential Teaching Methods

Certain research efforts have found that as far as university teaching is concerned, men and women teachers use approaches that are different in many ways (Statham et al., 1991). Though teaching methods were found to be different in this study, they were not gender specific. The difference observed within the male and female gender was noted to exceed the difference between the male and female gender. Androgynous teaching styles on the part of both male and female teachers were observed, with the majority of male and female teachers being very student-centered, supportive, and responsive to student needs.

Fewer Interactions in Male-Taught Classes. The conclusion of earlier studies that participation rates are related to student or teacher gender were not generally supported in this setting. Unlike Constantinople, Cornelius and Gray (1988), Crawford and MacLeod (1990), Kajander (1976), and Sternglanz & Lyberger-Ficek (1977), significantly fewer interactions by female students in classes taught by male teachers were not found. Fewer interactions by both male and female students, however, were found in one male-taught "Introduction to Computers" class. Fewer interactions by both male and female students also were found in a male-taught, "Physics" class, although it appeared this lack of interaction could be attributed to the difficulty of the material being discussed or the lack of preparation on the part of male and female students.

Fewer Interactions in Female-Taught Classes. Unlike Brooks (1982), fewer interactions by female students in classes taught by female faculty members were not generally found. Less interaction was observed on one occasion by female students in a female-taught "Criminal Justice" class. A majority of male students made up the class. Less exchange by both male and female students was noted in a female-taught "Introduction to New Testament" class.

Teaching Style

Though teaching styles were found to be different, they were not gender specific. Personal manner, challenge, proximity to students, availability, humor, respect, and support were observed to increase interaction.

Class Format

The formats for the classes consisted of discussion, lecture, and lecture-discussion. Use of the discussion format provided the greatest amount of freedom for interjection of thoughts and ideas by the students. Employment of the lecture format permitted only minimal amounts of student input.

Class Size

The greatest amount of interaction, during both the summer school and fall semester observations, occurred in those classes with fewer than 15 students. The small student-teacher ratio enabled teachers to provide a greater degree of individual attention for all students.

Academic Discipline

The study found higher levels of interaction in the Division of (a) Fine Arts, (b) Education, and (c) Health,

Physical Education, and Recreation. Teachers, in these classes, seemed to take a more active role in initiating and responding to student discussion.

Institutional Culture

Manifestations of the culture of this institution noted during the fall semester and summer school observations were (a) the equal treatment of men and women students by men and women teachers, (b) similar interaction patterns of men and women students, and (c) androgynous teaching styles. Fair and equitable treatment and behavior were observed in the classroom.

Alternative Hypothesis

Though the study was initially designed to examine gender as the primary variable to affect interaction in the college classroom, some additional findings were discovered. As a result of the researchers observations and analysis of observations, other variables were found to influence the teacher and student interaction process at this institution.

Data from the study lead the researcher to state the following alternative hypothesis: Various aspects of the college classroom situation influence interaction by male and female students. These aspects include: (a) teaching

style, involving personal manner, challenge, proximity to students, availability, humor, respect, and support, (b) class format, involving lecture, lecture-discussion, and discussion, (c) class size, (d) academic discipline, and (e) institutional culture.

Implications of Results

Students and teachers alike can benefit from examination of the classroom interaction process, faculty teaching methods, and the impact of gender. Men and women students in our colleges and universities are at different stages in their development. The classroom environment needs to be one that takes into consideration Chickering's (1969) prerequisites or conditions for developmental change when doing educational planning and program development: (a) clarity of objectives and internal consistency, (b) institutional size (c) curriculum, (d) teaching, and (e) evaluation.

The small size of this institution and small class size allow for extended exposure of male and female students to competent male and female teachers. Students are provided with much individual attention from teachers, the majority of whom are involved in teaching 12-15 hours per week, along with private consultation with students, and other connected

responsibilities. Students' evaluations of teachers provide feedback each semester to both teachers and administrators.

White (1981) stresses that graduate candidates should be encouraged to develop skill and interest in teaching. Assisting in courses, he emphasizes, should have status as an important part of the graduate program, to which senior professors give time and thought.

This is an honorable beginning. Ideally, it is a beginning which would be followed up with regular faculty development workshops at the institution under study. Such workshops would be helpful in dealing with those few class occurrences which were inconsistent with the overall findings of the study.

Included in these workshops would be discussions of faculty teaching methods which encourage verbal exchanges of ideas by all students. This emphasis on teaching methods would be beneficial to the one male teacher in this study who taught the "Computer Science" class using, strictly, a lecture format. It would also be beneficial to the one male teacher in the "Stress Management" class who admitted to having difficulty asking questions of one particular female student because tears filled her eyes when she did not know the answer to his question. The workshops could include information concerning the teacher's failure to challenge

and confront students in the classroom, and the detrimental effect of this on the student's learning and development.

Emphasis on teaching methods might also be beneficial to the two female teachers in summer school who had difficulty getting the attention of the "Human Growth and Development" class and the Introduction to New Testament" class during the beginning few minutes of the class time. The younger and more inexperienced teachers might be helped by these workshops also, such as the female teacher in the "Introduction to New Testament" class who used the lecture format for the major portion of the class time.

Also, hopefully, emphasized in the workshops would be the importance of (a) making eye contact with students, (b) calling them by name, (c) maintaining a close proximity to students, especially to those who are not interacting, (d) use of humor, and (e) early arrival to the classroom, as well as late departure. Discussions on these areas would be beneficial to the four male teachers who did not call students by name, to those few who did not always arrive early, and to the two or three who did not always encourage those not interacting to become involved.

Discussions of the importance of positive personal manners, and using humor to engage the students would be valuable lessons for the one male teacher in the "Computer

Science" class who displayed a serious personal manner and received little interaction from his students. The workshops would serve as a renewal time for all faculty members, male and female, the skilled and less skilled.

Additionally, students, both male and female, would be made aware, through freshman seminars and residence hall meetings, of the part they play in fostering their own development through involvement in classroom interaction. This would be useful in helping those few male and female students who did not take part in the verbal interaction of the classroom to begin interacting for their own benefit, including the one young woman whose eyes filled with tears when she did not know the answer to the teacher's questions. Finally, fellow students would be made aware, through these seminars and meetings, of their responsibility for challenging and supporting their more timid classmates.

It is hoped that this study will be beneficial in enabling teachers to provide an environment which facilitates and maximizes student learning. Creating an environment similar to the one in this study might be accomplished, even at a larger school, by dividing large classes into smaller discussion groups.

The smaller classes involved in this study appear to have created a community of scholars, not gender based,

which gave increased opportunities for student interaction. Carrying out future studies, similar to this one, which examine, understand, verify, and support the faculty and student interaction process and the impact of gender on this process will, hopefully, serve to better the higher education process in the years to come.

Bibliography

- Astin, A. W. (1977). Four critical years: Effects of college on beliefs, attitudes, and knowledge. San Francisco: Jossey-Bass.
- Belenky, M. F., Clinchy, B. M., Goldberger, N. R., & Tarule, J. M. (1986). Women's ways of knowing: The development of self, voice, and mind. New York: Basic Books.
- Blum, D. E. (1991, October 9). Environment still hostile to women in academe, new evidence indicates. Chronicle of Higher Education, pp. 1, 20.
- Boersma, P. D., Gay, D., Jones, R. A., Morrison, L., & Remick, H. (1981). Sex differences in college student-teacher interactions: Fact or fantasy? Sex Roles, 7(8), 775-784.
- Boyer, E. L. (1987). College: The undergraduate experience in America. New York: Harper & Row.
- Brooks, V. R. (1982). Sex differences in student dominance behavior in female and male professors' classrooms. Sex Roles, 8(7), 683-690.
- Brophy, J. (1985). Interaction of male and female students with male and female teachers. In L. C. Wilkinson, & C. B. Marrett (Eds.), Gender influences in classroom interaction (pp. 115-142). New York: Academic Press.
- Burdenski, H. M. (1989). Women's Colleges. In D. Greive

- (Ed.), Teaching in college (pp. 44-47). Cleveland, OH: INFO-TEC.
- Campbell, K. K. (1985). The communication classroom: A chilly climate for women? Association for Communication Administration Bulletin, 51, 68-72.
- Chickering, A. W. (1969). Education and identity. San Francisco: Jossey-Bass.
- Chickering, A. W. & Havighurst, R. J. (1981). The life cycle. In A. W. Chickering (Ed.), The modern American college (pp. 16-50). San Francisco: Jossey-Bass.
- Constantinople, A., Cornelius, R., & Gray, J. (1988). The chilly climate: Fact or artifact? Journal of Higher Education, 59(5), 527-550.
- Crawford, M., & MacLeod, M. (1990). Gender in the college classroom: an assessment of the "chilly climate" for women. Sex Roles, 23(3/4), pp. 101-122.
- Hagen, R. L., & Kahn, A. (1975). Discrimination against competent women. Journal of Applied Social Psychology, 5, 362-376.
- Hall, R. M. (1985). Classroom climate for women: The tip of the iceberg. Association for Communication Administration Bulletin, 51, 64-67.
- Hall, R. M., & Sandler, B. R. (1982). The classroom climate: A chilly one for women? Project on the Status

and Education of Women. Washington, DC: Association of American Colleges.

Heller, J. F., Puff, C. R., & Mills, C. J. (1985).

Assessment of the chilly college climate for women.

Journal of Higher Education, 56(4), 446-461.

Johnson, L. (1984). Selected activities using "the classroom climate: A chilly one for women?" Project on the Status and Education of Women. Washington, DC: Association of American Colleges.

Kajander, C. A. (1976). The effects of instructor and student sex on verbal behaviors in the college classroom (Doctoral dissertation, University of Texas, 1976).

Dissertation Abstracts International, 37(5-A), 2743-2744.

Karp, D., & Yoels, W. (1976). The college classroom: Some observations on the meanings of student participation.

Sociology and Social Research, 60(4), 421-439.

Katz, J. (1988). Does teaching help students learn? In B. A. Kimball (Ed.), Teaching undergraduates (pp. 173-184). Buffalo: Prometheus Books.

Krupnick, C. C. (1985). Women and men in the classroom: Inequality and its remedies. On Teaching and Learning, 1, 18-25.

Perry, W. G., Jr. (1972). Cognitive and ethical growth: The making of meaning. In A. W. Chickering (Ed.), The

modern American college (pp. 76-116). San Francisco:
Jossey-Bass.

Rodgers, R. F. (1980). Theories Underlying Student
Development. In D. Creamer (Ed.), Student development
in higher education (pp. 1-95). Cincinnati, OH:
American College Personnel Association.

Roe, M. A. (1989). Understanding student motivation: A tool
in the teaching/learning process. In D. Greive (Ed.),
Teaching in college (pp. 83-97). Cleveland, OH: INFO-
TEC.

Sandler, B. (1988, July). The chilly climate for women on
campus. USA Today, pp. 50-53.

Statham, A., Richardson, L., & Cook, J. (1991). Gender and
university teaching. Albany: State University of New
York Press.

Sternglanz, S. H., & Lyberger-Ficek, S. (1977). Sex
differences in student teacher interaction in the college
classroom. Sex Roles, 3(4), 345-351.

Stimpson, Catharine R. (1987). New consciousness, old
institutions, and the need for reconciliation. In
Carol Lasser (Ed.), Educating men and women together:
Coeducation in a changing world (pp. 155-163). Chicago:
University of Illinois Press.

Thorner, P. M. (1989). Toward equity: Starting to thaw the

chilly campus climate for women. Initiatives, 52(2), 1-7.

Weathersby, R. P. (1981). Ego development. In A. W. Chickering and Associates (Ed.), The modern American college, (pp. 51-75). San Francisco: Jossey-Bass.

White, R. W. (1981). Humanitarian Concern. In A. W. Chickering and Associates (Ed.), The modern American college, (pp. 158-171). San Francisco: Jossey-Bass.

Widick, C. & Simpson, D. (1978). Developmental concepts in college instruction. In C. A. Parker (Ed.), Encouraging development in college students, (pp. 27-73). Minneapolis: University of Minnesota.

Appendix A: Letter to Teachers

June 8, 1992

Dr. Craig Flowers
Bluefield College
Bluefield, VA 24605

Dear Dr. Flowers:

I am currently completing the EDSP master's program at Virginia Tech. My primary thesis research includes observations of classes during the fourth and fifth weeks of each of the two summer school sessions at Bluefield College, beginning Monday, June 22 and again on Monday, July 27.

May I observe your summer class on one occasion? I can assure you of complete confidentiality where individual data is concerned. Please respond by completing the form below and returning it to me by Monday, June 15.

Protecting the quality of the research demands that I keep a very low profile during the class period. It will be important that nothing be said during the class concerning my presence.

Thank you so much for your cooperation.

Sincerely,

Mary Lou Cole

_____ Yes, you may observe my class

I prefer you visit my class on _____
during the week of June 22, July 27. (M-F)

Time: _____ Room: _____

_____ No, I prefer not to participate.

(Signature)

Appendix B: Observation Protocol

Student Behaviors

Asks question
Responds to instructor's
 general question
Responds to another student
Hand up
(Constantinople et al. 1988)

Volunteers information
Responds to instructor's
 direct question
Makes follow-up comment

Hesitation and false starts
Questioning intonation
High pitch
Inappropriate smiling
(Hall et al. 1982)

"Tag" questions
Excessive use of qualifiers
Excessively polite speech
Averting eyes

Teacher Behaviors

Asks question (general)
Calls on student-hand up
Acknowledges student comment
Asks further question
Responds to student's question
(Constantinople et al. 1988)

Asks question of individual
Calls on student-hand not up
Expands on student comment
Responds to own question
Uses student's name

Making eye contact
women
Assuming attentive posture
intellectually)
Modulating voice tone
Proximity to students
Nodding or gesturing-response
(Hall et al. 1982)

Comments that disparage

(generally,

Using sexist humor
Manner of instruction giving
Number of questions

Probes for elaborations
Challenges both w/m
Allows same response time for m/w
Notes physical appearance
Questions career goals
questions
Number of questions, w/m

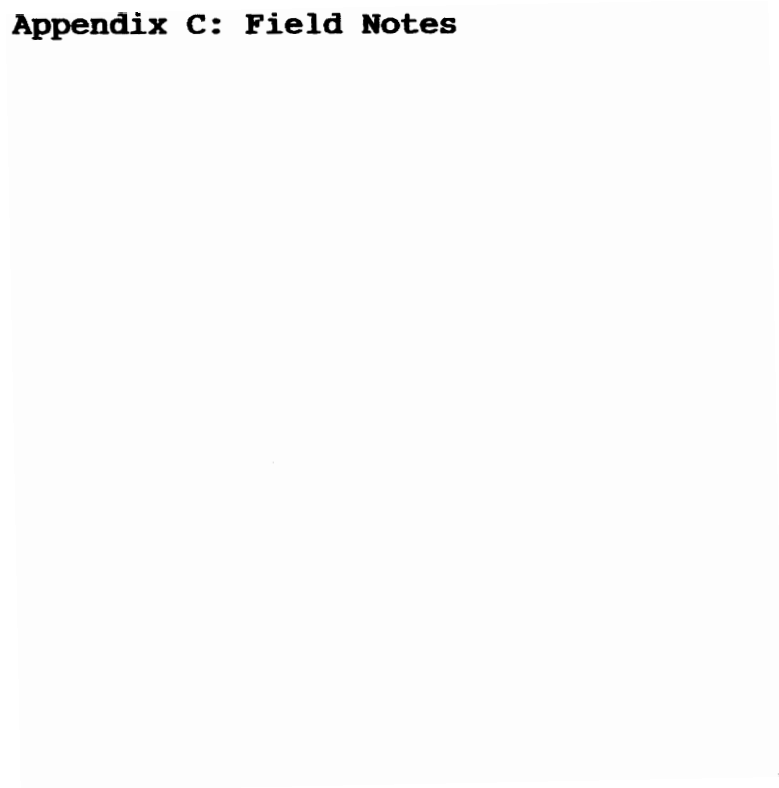
Interacts same with m/w
Interrupts w/m
Uses generic terms
Questions academic ability
Factual or analytic

Other Aspects

Gender of faculty
Gender of student
Division of the curriculum
Size of the class
Class Time Room Number

Noise level
Level of activity
Involvement of few or many
Did students know each other
Formal or informal discussion

Appendix C: Field Notes



Introduction to Computers/CIS1513

James Graham, Professor

Students - 3 women

Monday, June 22, ADM, Room 103, 8:00 a.m.

The classroom was bright from the sunlight outside. The windows remained closed as there was some noise to be heard from the building construction close by. The temperature of the room was comfortable.

The desks (approximately 30) in this small classroom were arranged in six straight rows, and were so tightly pushed together that turning them in either direction would have been difficult. The three female students chose desks positioned in the right front corner of the classroom near the door.

The teacher arrived five minutes before it was time for the class to begin. He cheerfully greeted the students with "Hello, and how is everyone doing today?" The three students responded softly, after which one of the students, somewhat hesitantly, asked "Could you tell us something of what to expect on our upcoming exam?" He answered "Surely", and with that the other two students began to ask factual questions of him. He answered the questions carefully, telling them in detail what he would expect them to be able

to do on the exam. The students nodded in agreement, appearing to understand his expectations.

The teacher immediately began his lecture, giving little opportunity for further questions or comments by the students, and asking no questions of the students at any time during the discourse. He maintained good eye contact and a close proximity to the students, while in a standing position for the entire class period. He walked to the chalkboard on occasion and wrote key words or points he wished to emphasize from his lecture on "computer programming" and, then, returned to stand directly in front of the three students.

The teacher's presence fostered a somewhat tense atmosphere in the classroom as he moved from one student to another with a steady and maintained eye contact, seeming to demand their strict attention. His voice was rather loud for the size of the classroom, and his demeanor when speaking was slightly intimidating as he, frequently, tipped his chin downward and looked at the students over the top of his glasses. He did appear to elicit a sense of respect from them as well, though, as he, periodically, made attempts at breaking the intensity of the class with light-hearted remarks, followed by chuckles on his part. The

students responded with smiles or suppressed laughter in return.

The three students made brief comments to each other during the second half of the class when the teacher dismissed himself for a few minutes to get an overhead projector. They appeared hesitant to converse, making only limited comments about the upcoming exam, and keeping their eyes on the door as they awaited the teacher's return.

No verbal interaction took place during the second half of the class period. The students sat almost motionless in their chairs, moving only as the extensive note taking demanded it. They raised their eyes, often, to look at him as he spoke.

At the end of the class the teacher began a somewhat light-hearted, informal conversation with the students concerning "the beautiful weather" and their "performance on the upcoming exam". The students made only very narrow responses to his attempts at conversation, sighing when he spoke of the exam and appearing to be preoccupied with concern about it. The teacher was the last to leave the classroom.

Introduction to Computers/CIS1513

James Graham, Professor

Students - 7 women, 9 men

Wednesday, Sept. 30, Sci. Build., Room 101, 1:00 p.m.

After finding little verbal interaction during the first observation, I decided to visit this class once again during the fourth week of the fall semester to see whether or not the limited interaction would occur again.

The class had moved to the new science building. The classroom provided optimal environmental conditions for interaction, with the provision of the most current furniture and equipment available.

The teacher arrived 15 minutes before class began. He prepared the overhead, erased the chalkboard, and went through his notes; however, there was little conversation with the students. There was little student to student interaction during this time as well.

As time drew near for class to convene he began to discuss the upcoming exam on Friday, told them he would "be out of town," and that his lab monitor would "proctor the exam." He then smiled and said "Please don't harass him, he will not know most of the answers anyway." The students broke into laughter; however, the laughter quickly subsided as he immediately began to lecture on the day's assignment.

The teacher lectured on "systems analysis," "systems design," and "systems development," and paused, occasionally, to ask if anyone had any questions. As the end of the class period drew near, he laughed, and said "I'll think about you on Friday at 1:00 p.m. while you're in Bluefield taking my test and I'm in Cincinnati having a good time." The students responded with groans, while one male student laughed, and replied, "Believe me, we'll think of you also!" One male student remained after class to ask a question. The teacher responded respectfully to the student, He attempted to answered the question to the student's satisfaction, giving a lengthy answer while watching for nods of understanding from the student.

Developmental Math/MAT0100

Sandra Elswick, Professor

Students - Only one female student was present during the first observation; two students, one male and one female, were present during the second observation.

Tuesday, June 23, ADM, Room 103, 8:00 a.m.

The room temperature in the classroom was comfortable, as the sunshine beamed through the closed windows. The desks (approximately 30) in this small classroom were positioned in six straight rows.

Although only one student, a female, was present for this class, it was an excellent opportunity to observe the style of the teacher. Her personal manner, one of quietness and gentleness, seemed to foster a very relaxed atmosphere. She spoke in a soft voice as she maintained eye contact with the student. The opening conversation between teacher and student consisted of light-hearted, informal chit-chat concerning "the beautiful weather" and one another's well-being.

As the class began, the teacher expressed her concern for the student's success in the class by stating, "Kristi, I want you to get the help you need and I want your questions on this material to be answered to your

satisfaction." During the first half of the class period, the teacher simply worked, on the chalkboard, all of the problems which were too difficult for the student to solve alone. The student repeatedly asked, "Which step comes first?", "Why is this step necessary?", and "What do I do when I get to this point in the problem?" The teacher was very accepting of the student's questions and showed no indication of impatience, even though the material was very basic and far below the capability of the teacher.

The teacher moved back and forth between the board and the student. She stood in front of the student or to the side of the student, when they were looking at the board. She leaned over to the student when discussing a specific problem in the book and called the student by her first name, repeatedly. At the end of the class period, the teacher and the student left the classroom together and continued the light-hearted conversation that had started just before class began.

Developmental Math/MAT0100

Sandra Elswick, Professor

Students - one man and one woman

Wednesday, July 1, ADM, Room 103, 8:00 a.m.

I returned to this class at a later date when a male student was present because I wanted to see if there was a difference in the way this particular teacher interacted with a male student as opposed to a female student. The same female student was present, as before, and both students sat in the middle front of the classroom, directly in front of the teacher who moved back and forth between the chalkboard and the students.

The two students asked questions in equal numbers. They both interacted with the teacher, however, not with each other. The teacher answered the questions equally and expanded on the answers in most instances. She called both students by name, but gave slightly more eye contact to the woman student.

I sensed a slight degree of impatience in the young man, a shortness in his manner of speaking to the teacher throughout most of the class period. He moved his left knee back and forth, bounced the heel of his shoe on the floor, turned pages in his tablet loudly, and slammed the tablet on the desk on two occasions. He also appeared not to have a

book of his own as he leaned over frequently see the book of the woman student sitting on his left.

At one point, the teacher was listing different combinations of numbers on the board in an attempt to explain a particular problem. The young man said "You don't have to do that." The teacher continued. The young man said once again in a louder voice, "You don't have to do that." The teacher responded, "Doug's ahead of me again. You're right, Doug. We don't have to do this with such a simple problem, however, we may need to do it at some point in the future with a more difficult problem." Doug turned around, looked directly at me, smiled, and tipped his chin upward.

At one point, the young man asked another question, "What do we do at this point?" The teacher moved to his side, leaned over slightly, and pointed to the problem on his paper which he had attempted to solve. She explained the problem, speaking gently and softly as she had on an earlier occasion when explaining a problem to the woman student. She, at no time, showed any irritation with Doug, and continually spoke at a low level and in a calm and comforting manner, especially during the times when he appeared to become irritated with her.

As the class period came to an end, the teacher asked for more questions in preparation for an upcoming exam. No concerns were expressed by either student. No sound was heard except for the noise of Doug's knuckles banging loudly on his desk. As the teacher dismissed the class, Doug grabbed up his notebook, scooted the desk on the uncarpeted floor, and clamored out of the classroom. The woman student left the room quietly, without conversation, just ahead of the teacher.

Developmental Math/MAT0100

Sandra Elswick, Professor

Students - 14 women, 23 men

Wednesday, Sept. 30, Sci. Build., Room 100, 11:00 a.m.

I returned to observe this class a third time, during the fourth week of the fall semester, because I was extremely interested in examining the reaction of the male students in the class to the female math teacher. The class was made up of 37 students, 14 female and 23 male.

I saw no evidence during this observation of any male student appearing threatened and retaliating as in the earlier observation with Doug. All of the students were courteous and respectful in their interaction with the teacher, and she with them.

Although the male students made up nearly two-thirds of the class, I saw no evidence of domination of the class by male students. An equal number of male and female students asked questions, answered questions and made comments during the class period.

The teacher returned their exams, asked the students to "rework the problems" they missed. She invited them to come to her office if additional help was needed. One female student remained after class and accompanied the teacher to her office for some further instruction.

Principles of Accounting/BUS2534-June 23

Will Gordon, Professor

Students - 2 men, 2 women

Tuesday, June 23, ADM, Room 310, 9:30 a.m.

The seating capacity of this classroom was approximately 50. The desks were positioned in seven rows. Two male students sat in the middle front of the class, with two women students sitting directly behind them. The teacher arrived ten minutes before class convened, and became involved in informal conversation, laughing and joking, with all four students.

The teacher moved easily into a discussion of the assigned material. He stood in front of the students and moved back and forth between them and the chalkboard as he taught. He employed a lecture-discussion format, while maintaining good eye contact, an attentive posture, and close proximity to the students. He called on the students often, using their first names, and showed a positive response to all of their questions, nodding in agreement, and expanding on their comments.

Class members involved themselves in a time of verbal interaction, both formal and informal. Three students, two men and one woman, in particular, answered the majority of the teacher's questions and volunteered information without

prompting. One male student, Jeff moved his chair, freely, to positions more favorable to interaction with the female student, Sandy. Kevin also turned in his seat to face Jeff and Sandy when involved in conversation.

The teacher challenged both the men and women in the class, repeatedly probing for responses and elaboration from the less verbal female student, Sabrina. The student usually answered questions, hesitantly, beginning with "I think ...", and "I was wondering ...", and made comments with a noticeable questioning intonation. She looked down at her book when answering, and made little eye contact with the teacher.

The teacher interjected a certain amount of humor into the material being discussed. He spoke of "giving in to his rebelliousness within and writing a check for 50 cents," as well as "the high cost of his wife's shoes, even when they are on sale."

The teacher's personal manner conveyed a sense of respect for the students' ideas as he allowed them to question a statement he made at one point in the lecture. He spoke to them in a moderate tone and a polite fashion throughout the class period. The students responded likewise. The teacher made himself available for questions at the end of class, however no one remained.

Art Appreciation/ART1413

Walter Shroyer, Professor

Students - 5 men, 7 women

Wednesday, June 24, RISH, 009, 8:00 a.m.

The building, outside of this classroom, was very quiet this particular morning. Inside this classroom, however, the noise and activity level was loud and boisterous, as the teacher and students laughed and shouted at each other in an attempt to be heard. All of the students, as they entered, became involved in the activity and informal conversation that was taking place.

The majority of students selected desks in the right three rows of this classroom, which seats approximately 30 students. Two students, one man and one woman, selected desks which were side by side, and located in the back left side of the classroom.

As time drew near for class to begin, the professor pulled the blinds to darken the room for showing slides. However, even the darker room did not seem to dampen the enthusiasm of the group.

The teacher spoke of various painters--"people," he said," who, most of the time, lived on the edge of society." The students, both male and female, began to volunteer information freely as they looked at slides of various

paintings and discussed each in detail. They reviewed "the broken relationships," and "mental illness" that so often existed in the lives of the early painters. Occasionally, they spoke two or three at one time as they answered the teacher's questions and made comments about particular works of art and the persons who created them.

This teacher evoked an atmosphere of excitement about the subject under discussion. The students, both male and female, appeared anxious to hear what the teacher had to say, as they sometimes leaned forward in their seats, and followed him with their eyes when he walked back and forth in the aisles.

Many of the men and women were also eager to interject their thoughts and ideas about particular paintings and painters, "Rousseau," "Van Gogh," and many others, sometimes yelling out answers. They were attentive to expressions of ideas by their fellow students, turning their chairs toward those nearby who were attempting to express their thoughts about a particular work of art or painter.

One young man seated in the middle of the classroom and the two students, one man and one woman, who were seated in the left rear section of the classroom, were very quiet for a large part of the class period. They were the only students who were not interjecting their ideas. The teacher

repeatedly walked the aisles as he spoke, and stopped at their desks to make eye contact with them. Eventually they began to discuss their thoughts also, though slowly and hesitantly at first.

As the class period progressed they began to speak more frequently and appeared to be gaining confidence in their ability to take part in the discussion. They seemed inspired to express their ideas as the teacher probed for more elaboration with statements like "and what else can you tell us about this painting?", and "what else can you tell us about this painter?" He regularly encouraged them by discussing the correctness and appropriateness of their answers with replies including "You're right," "Certainly," and "Good job."

Finally, as the discussion quieted, and it appeared that little on the day's material had been left unsaid, the teacher dismissed the class. Most of the students, somewhat slow to leave the room, became involved in informal chit-chat with fellow classmates. Several students, both male and female, spoke informally with the teacher.

New Testament Survey/REL1023

Maria Palmer, team teacher

Students - 10 women, 4 men

Wednesday, June 24, ADM, Room 201, 9:30 a.m.

As the students arrived, they became scattered in desks around this classroom which seats approximately 40 students. Three of the men chose seats in the middle of the classroom; one of the men found a place in the middle rear section of the classroom. The women students selected various desks around the room.

The women students were noticeably louder and more active than the men as they entered and found their places. They conversed with each other mainly, but occasionally included the men in their discussion. The three men sitting together in the middle of the classroom were fairly quiet, however, the one man sitting in the back of the room was louder and more active as he took part in informal conversations with various women seated around him. The students discussed one particular teacher and his "demands for perfection," assignments they "would never be able to complete on time," what they had done the night before, and fellow students.

The teacher arrived two or three minutes before class started, greeted the students, and immediately began to

return a quiz that the students had taken during the previous class period. The teacher is from Peru, and as she spoke, I realized I had to listen very carefully, in an attempt to understand her. I wondered if the students were having the same difficulty as I. They rarely asked her to repeat a statement, however, and so it appeared they understood what she was saying.

The students, men and women alike, were somewhat inattentive as she returned the papers. The noise and activity level remained high as they talked and laughed with their neighbors, forcing a loud request on her part, "May I please have your attention!"

She began the class by asking certain direct factual questions of both the men and women students concerning the material on the quiz she had just returned. She called on students using their first names in most instances. Both men and women responded, and she acknowledged their answers with positive nods and gestures, and encouraged them in their responses with "very good," and "excellent", as well as smiles of approval. More than 50% of the class, 7 of 13 students, both men and women took part in answering her questions. The teacher did not explicitly encourage those students not taking part to become involved.

The teacher lectured for a major portion of the class period. Little opportunity was given for interjection of ideas by the students during this time. Her personal manner was vibrant and enthusiastic, as she bouncily moved back and forth across the front of the classroom when lecturing. She occasionally moved a short distance down the aisles to also make eye contact with those students seated in the back of the classroom. She would then bound back up the aisle quickly to write some key word on the chalkboard concerning the "church at Thessalonica" or to point out one of Paul's journeys on the map in the front of the classroom.

One particular student, a woman, interjected ideas occasionally. Surprisingly, she sat in the back of the classroom rather than in the front.

During the last 15 minutes of the class period, the teacher announced she was giving another quiz. The students initially responded with sighs and murmuring, however, they quickly began answering the questions and left the classroom one by one as they finished.

New Testament Survey/REL1023

Michael Palmer, Professor

Students - 10 women, 4 men

Thursday, June 25, ADM, Room 201, 9:30 a.m.

On the following day, I returned to observe the male teacher. When I arrived, approximately six students were already present. They were scattered at desks around the classroom. They were excited, jabbering to each other, calling each other by name, and busily opening windows in the classroom. They discussed the quiz situation and comforted each other with, "Oh, don't worry so, only half of them count. The lowest grades will be dropped anyway." As other students arrived, they became involved in the conversation also.

Finally, the teacher rushed in, and apologized for being two minutes late. He grabbed the portable lectern, positioned it quickly on the desk, closed the door and began to pass out the quiz that the students had taken on the previous day, amid sighs and groans.

Each question on the quiz was carefully discussed, through direct and indirect questions, by the teacher. The greatest percentage of the teacher's indirect questions were answered by a group of women students sitting on the

teacher's right, and another woman sitting in the middle front of the classroom.

The teacher's personal manner was one of excitedness and hyperactivity. When lecturing, he moved back and forth across the front of the classroom as had the teacher on the previous day. He stopped frequently in front of the group of four or five female students sitting at desks in the left front corner of the classroom. He did not, however, move back the aisles, and stayed close the chalkboard and maps, using them frequently.

He carefully made eye contact with each student as he spoke. He called students by their first names, "Anthony," "Julie," and "Mike," as he used them for examples in his discussion of "scribes" and "Hellenistic letter form."

The teacher mainly used a lecture-discussion format for his teaching, with large numbers of direct and indirect questions interspersed throughout the lecture. The indirect questions, both factual and analytical, were answered largely by the group of four or five women students. The small group of women and the teacher entered into a lengthy discussion on "eschatology", and "the image of Christ as liberator."

Overall, approximately 50% of the students interacted at one time or another during the class period as they had

in the female teacher's class on the preceding day. However, under the male team teacher, the majority of the interjections were offered by the female students.

The teacher closed out the lecture as the class period ended. The students left the room, individually and in small groups, more quiet than when they entered at the beginning of class. Three females were slower to leave, becoming involved in informal conversation with the teacher and each other.

General Physics/PHY2014

Eugene Chaffin, Professor

Students - 3 women, 1 man

Friday, June 26, ADM, Room 111, 9:30 a.m.

The teacher arrived a few minutes before the class was scheduled to begin. The students had been sitting quietly as they waited, with little verbal interaction, formal or informal, between them. They all chose desks positioned in the middle front section of the classroom.

The teacher immediately began to ask direct questions of the students on the material assigned for that day. The first question he asked of "Karen," who hesitated but finally answered. The second question he asked of "Brian," who had to be helped to arrive at the correct answer. The third question he asked of "Renee," who answered, also with his help.

The teacher began to discuss the difficulty of this material, and gradually moved away from the direct questioning. He expressed his concern "that the students might become discouraged in their learning because of the complexity of the material." The students responded with soft sighs of relief and nods of agreement. The teacher's overall teaching style leaned strongly in the direction of lecture-only for the remainder of the class period.

His personal manner was one of seriousness. He interjected very little humor, smiled rarely, and his speaking voice was somewhat monotone. He was totally involved in teaching the material, and understood it fully. He maintained good eye contact with the students, while standing close to the chalkboard, and using it extensively.

The teacher continued to ask many indirect questions, but answered most of them himself. One woman student responded to a general question posed by the teacher, only after he called her by name, "Tina," and encouraged her to do so. He supported her by saying "Yes, that's correct. Please continue. Well done, very well done."

The teacher showed a short film clip in the latter portion of the class. He asked for questions from the students; however, none were expressed. There was little verbal interaction between the students as they left the classroom and none with the teacher.

Human Growth and Development/PSY2043

Nancy Bryan, Professor

Students - 8 women, 6 men

Friday, June 26, ADM, Room 111, 11:00 a.m.

The students, mainly women, began moving the desks, previously arranged in rows, into a circle as they arrived. They were involved in loud, informal conversation with each other. The teacher arrived ten minutes before the class was scheduled to begin, became involved in the conversation also, and began opening windows.

As class time approached, the teacher attempted to begin the class, however, the students, men and women alike at this point, were still conversing. She finally told them there was "entirely too much conversation going on" and that they needed to "get quiet." The students responded accordingly and the class began with discussion of an upcoming exam.

The teacher assumed a relaxed sitting position on her desk, as men and women students alike asked questions. She listened carefully to their questions, and responded positively as she maintained eye contact with them.

A female student volunteered information on "strong-willed children" in response to a question by the teacher. The teacher acknowledged her comment, called her by name,

expanded on her comment, and asked a further question. The majority of the women students sat with their hands raised, waiting for their opportunity to answer the teacher's questions, to express both their ideas, and their own personal experiences with young children. The men in the class, though attentive, were not as involved in the discussion of "childish irresponsibility versus willful defiance", as were the women.

The teacher started a video and took her place with the students in the circle. She periodically stopped the video at particular points of interest and probed for discussion by the students. The women volunteered information freely on their "experiences with young children," however, still little was heard from the men in the class.

At one point, the teacher asked a direct question of one of the men and received an answer from him. She encouraged him in his response with positive nods, supported him in his attempts at answering with "Yes", and "absolutely", and then further expanded on what he had said.

The teacher appeared to be very student-centered. She maintained a close proximity to the students throughout the class period, and assumed an attentive posture by leaning in their direction when she spoke with them, individually. When answering their questions concerning the upcoming exam,

she was very careful to answer completely, and to their satisfaction. After giving them her answer, she would often say, "Do you understand what I am saying? How can I make it clearer for you?"

There was definitely much less interaction on the part of the male students in this class. Overall, approximately 65% of the students, mainly women, took part in the give-and-take of ideas.

As the teacher dismissed the class, the loud discussions resumed as students gathered their books and walked out the door. Two or three students, all female, remained to talk informally with the teacher. She once again assumed a sitting position on her desk, as she patiently gave of her time to each of the waiting students.

Biology/BIO1024

Bob Randall, Professor

Students - 14 women, 12 men

Friday, June 26, ADM, Room 309, 8:00 a.m.

A few students arrived before the teacher. They entered, both male and female, already involved in informal student to student interaction. They called each other by name, talked about what they had done the previous evening, and how their classes were progressing.

The teacher arrived directly behind them with his cup of coffee. He also became involved in the informal conversation, joking and laughing, with two women students sitting up front. He looked toward the back of the room at a male student and said, "It must be Gordon's day to take notes again. Somehow that ratio doesn't seem fair--3-1? They should pay you more!" The student smiled and nodded in agreement, at which the teacher chuckled. He then discussed the number of absentees and said "At least some of you have developed an immunity to the effects of early morning classes."

The desks in the classroom, approximately 30 of them, were arranged in rows. Overall, the students chose seats equally distributed throughout the classroom.

The teacher began the class with an indirect question. There was a general response from both men and women students in the class. He moved to the chalkboard to write key words and phrases as he spoke, and then faced the students, making eye contact with many of them, both men and women.

The teacher's voice tone and volume was pleasant, and appropriate for the size of the room. His enunciation was very clear. He, basically, used a lecture format, however, there were numerous direct and indirect questions strewn throughout. The students were heavily involved in note taking.

At one point, the teacher asked an indirect question. A woman student in the front of the classroom mumbled an answer, marked by a strong questioning intonation. A young man in the back of the room answered also, without the questioning intonation. The same man asked a follow-up question, which the teacher acknowledged and answered. Overall, approximately 10-12 of the 19 students present were involved in verbal interaction with the teacher at some time during the class period.

The teacher attempted to keep the difficult material from becoming overwhelming by interjecting humor throughout the lecture. He joked about "blaming our bad days on body

chemicals", and also about "those ultimate crumb snatchers" that move through our bodies constantly. The students responded with laughter.

The teacher made himself available for questions at the end of class, though few students remained. The students left the classroom rather quickly and quietly, involved in only minimal conversation with fellow students. The two women students and one young man sitting in the middle front section of the classroom remained for a short time, involved in friendly conversation with the teacher and each other.

Stress Management/HEA4503

Scott Bryan, Professor

Students - 10 women, 3 men

Monday, June 29, GYM, 100, 9:30 a.m.

Approximately 15 desks were arranged in a circle for this class. The classroom windows were open, and the temperature was very comfortable. As the teacher and students arrived, they immediately became heavily involved in informal conversation, talking loudly, laughing, and teasing each other.

As the time approached for class to begin, the teacher took his place behind a lectern, close to the chalkboard, which he used occasionally throughout the class period. He began asking direct questions of the students. The pattern was always the same. Each time he would make eye contact with a student, walk to that student, call them by their first name, and ask them a direct question. He would then encourage the student to elaborate, and subsequently expand on their answer himself. When posing indirect questions, he began by addressing the students as "ladies and gentlemen".

The teacher's spirited teaching style created an atmosphere of excitement and anticipation. The students eagerly participated, expressing their own ideas, as well as their personal experiences. Many of the students were so

delighted with the topic under discussion, "stress management", and the vibrancy and enthusiasm of the teacher, that they had a tendency to interrupt each other and speak without being recognized. Before the class ended, each student had spoken several times.

The teacher talked about stress in the lives of persons living today, "that over which we have no control and that which we bring on ourselves". He jokingly discussed "an uncle who decided to see a horror movie." The teacher stated that "Though my uncle has survived many difficult periods in his life, including World War II, seeing the horror in this movie caused him so much discontent that he slept with the light on in his room for the next three months." The students responded with laughter, nods of agreement, and soft conversation with their fellow students.

The teacher, at one point, stressed that we see life as we are. He walked over to a male student, called him by name, and using him as an example, smacked him softly on the cheek. He, then, leaned down, looked the student in the face, and yelled at him. Afterwards, he went around the circle of students asking each student what they had seen. "You chewed him out," said one student. "You yelled loudly at him and hit him," said another. "You insulted and embarrassed him," said a third student. Other responses

included "fussed at him", "slapped him", and "gave him a love tap". When he asked the student whom he was using as an example for his interpretation, the student replied, "You verbally and physically abused me." The class broke into wild laughter. The teacher smiled and responded by saying "We see things as we are."

Much more discussion followed on stress management. The students shared particular shortcomings in their makeup that increased the level of stress in their lives. One older student, a local elementary school teacher, related that she was "unable to convey to students' parents the inconvenience caused by late arrival to pick up their children." One of the young men said he postpones "studying for exams until the last minute, causing needless stress." On and on went the interaction.

Finally, as the end of the class period approached, the teacher expressed concern for the students' futures by telling them to "Aim for success, not perfection." The students were very slow to leave the classroom, and many continued the classroom discussion with fellow students as they left. Others remained at their desks to talk with the students next to them. Several students, both male and female, waited to speak with the teacher.

The teacher patiently spent time with each of the waiting students. He answered their questions and encouraged each of them to "stop allowing circumstances and other people to control your lives and start doing it yourselves."

Introduction to Psychology/PSY1013

Charles Poe, Professor

Students - 4 women

Tuesday, June 30, ADM, Room 111, 2:00 p.m.

The teacher arrived a few minutes before time for class to begin. The four students were already present in this classroom which seats approximately 25. Three of the students sat at desks positioned in the front of the classroom. A fourth student sat directly behind them.

The teacher and one student became involved in an informal conversation concerning the appearance of the teacher on the previous evening's local news broadcast. All four students entered into a discussion on the subject of the broadcast.

The teacher opened the windows in the classroom, closed the door, and began to return the students' exams. He asked for questions concerning the exam, however only a few were voiced.

The teacher began to talk about the final exam and expressed his desire to set up a special study time with the students outside of the regular classroom hours. Next, he scheduled each of their final exam times to suit their individual needs.

The teacher stood behind a lectern for most of the class period, and maintained eye contact with the students as he spoke. He used overheads that contained pertinent information on the assigned material, including key words, phrases and definitions. He proceeded very slowly and deliberately, giving the students ample time to complete their note taking.

The teacher asked both direct factual and analytical questions of the four students, calling each by their first name. He asked "Karen" a factual question. She answered and he expanded on her answer. He then asked "Christie" an analytical question, which she answered. This was followed by another question, which she also answered and on which he expanded. He regularly encouraged the students to "give more details," and then further enlarged on the answers himself. When students were unable to respond, as in Linda's case, concerning a definition of "attribution theory", the teacher led them in their responses, helping them to succeed in their efforts.

He made light-hearted remarks about "snicklers," which, he said, were "funny definitions for words not found in the dictionary and somehow tied in to the material being discussed." The students smiled, seeming to appreciate the temporary escape from the notes on the overhead.

The teacher employed a lecture format for most of the class period, with many direct and indirect questions being included in his discussion of the assigned material. His personal manner was one of quietness, and reservation. He spoke slowly, deliberately, and in a moderately soft voice, which was somewhat monotone. The noise and activity level in the classroom was very low.

The teacher made himself available for questions at the end of class. However, the students left quietly with little interaction of any kind.

Introduction to Psychology/PSY1013

Charles Poe, Professor

Students - 9 women, 11 men

Thursday, October 1, ADM, Room 111, 2:00 p.m.

I returned to observe this class during the fourth week of the fall semester. I found slightly less interaction by the students than in the summer class. Questions, mainly factual, were asked, largely, by female students. Questions, mainly factual, were answered, largely, by male students; however, no evidence of domination by male students was noted. Comments were made, equally, by male and female students.

Once again, the teacher used overheads that contained pertinent information on the assigned material, including key words, phrases, and definitions, making his lecture very easy to follow. He discussed "the 8 primary emotions" and the various theories that pertain to them. He spoke of "facial cues" and stated that "women seem more able to read such cues." "What about it, Linda?" "You're absolutely right," Linda replied. The class laughed softly.

He regularly asked if the students needed clarification on any of the material he was giving them. The teacher, once again, made himself available for questions at the end of class. Six students, 4 males and 2 females, remained.

Introduction to Criminal Justice/CRJ2013

Kimberly Cyrus, Professor

Students - two men, two women

Monday, July 27, RISH, 109, 9:30 a.m.

The classroom was warm and stuffy upon my arrival. The teacher and four students arrived shortly before it was time for class to begin. The teacher immediately opened a door leading to the outside, which allowed a breeze to flow through, cooling the classroom quickly.

Three students, two women and one man, sat directly in front of the teacher in the front row of desks, in this classroom which seats approximately 30 students. One male student sat in the second row, also in front of the teacher. The teacher taught while standing behind a lectern for most of the class period. She occasionally moved to the chalkboard when writing a key word or phrase or to the front of one or more of the students when personally addressing them.

The teacher began the class with an indirect question which she answered herself. This was followed by another indirect question, which she also answered. She joked with one of the male students about "the modest amount of crime the local police force has to deal with in our small

community," and with the other students when discussing "The Fruit of the Poisonous Tree Doctrine."

Her personal manner was soft and gentle at certain times, yet louder and more commanding at other times. She spoke politely and thoughtfully to the students, when phrasing direct questions to them; however, she spoke louder and more authoritatively when lecturing.

The teacher maintained good eye contact, and called the students by name. She followed an outline, and moved slowly through the more difficult legal cases. She spelled names and gave details, as the students carefully took notes. She repeatedly asked, "Am I moving too fast?" Occasionally, an "uh-huh" would be heard from one male student.

One female student sitting to the teacher's right gave her little eye contact throughout the lecture. The teacher often leaned, faintly, in her direction as she spoke from the lectern, and walked toward her on several occasions as she spoke directly to her. No noticeable change in the student's behavior took place, however.

The remaining three students asked questions of the teacher throughout the lecture and made comments periodically. She always responded courteously to their questions and expanded on their comments. She encouraged the students toward further interaction with comments such

as "You're coming along now, James. Let's hear more from you." On several occasions, she helped the students to arrive at the correct answer to one of her questions.

The teacher dismissed the class 5 minutes early because she was at a good breaking point in her notes. She gave the students the assignment for the following day, and asked if there were any further questions. One student remained to discuss a makeup exam with her. She told him she would "administer it at his convenience."

Introduction to Criminal Justice/CRJ2013

Kimberly Cyrus, Professor

Students - 13 women, 8 men

Wednesday, Sept. 30, ADM, 101, 9:00 a.m.

I returned to observe this class once again during the fourth week of the fall semester. This time the class was made up of a male majority, with 13 male and 8 female students.

I was amazed at the different pattern of interaction I noted during this observation. The 8 female students rarely spoke throughout the entire class period. The teacher began by asking a series of indirect questions that were answered by the class as a whole. I found it difficult to determine whether or not the women were speaking at this time. I mainly heard men's voices answering the questions. This was followed by another indirect question and answered by a male student seated in the middle rear section of the classroom. The next indirect question was answered by a male student seated in the middle front section of the classroom.

The teacher asked them to help her write a legal brief to legalize marijuana. "Is there a positive aspect of marijuana use?" she asked. "It is effective when used for nerve disorders" one male student offers. "Good one" she

replies, "however, that's only one. Are there others?" "Cigarettes have chemicals that negatively affect the body, and smoking is legal, so why shouldn't marijuana use be legal?" states another male student. "Another good one!" emphasizes the teacher. "Cigarettes have nicotine, and are addictive, but still legal" she adds. "Could we use an economic argument" asks another male student. "Surely,-- what is your argument?" she asks. "If 5,000,00 people use it at least once a week, just think of the money the government could make if they taxed it like cigarettes" emphasizes the male student. "That's a good argument," says the teacher. She proceeds to elaborate on the statement just made.

On and on went the interaction, with discussions following on the negative aspects of marijuana use. The majority of the interjections, during this observation, however, were made by male students. One male student remained after class to speak with her.

World Literature/ENG2063

Wayne Massey, Professor

Students - 3 women, 1 man

Monday, July 27, RISH, 101, 11:00 a.m.

Two students, one male and one female, arrived for the class a few minutes early. They became involved in informal conversation concerning "the hectic pace necessary to keep up in summer school", and "the concentrated effort demanded by teachers in summer school classes." The teacher's office was next door to the classroom being used, so he had been able to prepare the classroom for the student's arrival, opening the windows and an outside door.

The teacher came into the classroom immediately when he heard the students talking and began arranging the desks in a circle. He became involved in informal conversation with the students also. The one male student asked his opinion on the "opening of a nightclub for teens." They became involved in a discussion on the pros and cons of the business world.

The remaining two female students arrived and class convened. The teacher announced that "Katie" would be "doing her presentation on Alexander Pope, and his works, An Essay on Man, and the Dunciad" which he "published anonymously." He asked numerous questions of Katie

throughout the presentation, and carefully expanded on her answers. At one point, when Katie answered one question so softly she could barely be heard, he encouraged her with "That's correct. Say the answer louder, Katie." He, at one point, asked an indirect question which was answered by the male student.

The teacher, then, began to discuss an upcoming exam and how he would expect Pope's works to be handled. This discussion was followed by a lecture with many direct and indirect questions posed by the teacher, both factual and analytical. One female student, Terri, was very quiet for the beginning few minutes of the class period; however, with the teacher's encouragement and support, she began interacting also. "What is man's chief error, Terri?" he asked. "Pride," answered Terri. "When is weakness good?" he asked. "When it forces reliance on God" responded Terri.

The teacher gave them a few minutes to get a drink at the water fountain and then asked "Denise" to begin her "presentation on Emily Dickenson." The teacher and other students were very attentive to her, as they had been with Katie, during her presentation. The students listened carefully, asked questions, and expressed their own ideas freely as Denise spoke of Emily's concern that "her mother was a failure." Toward the end of the class period the

teacher and students became involved in an extensive group discussion on the "independence of Emily Dickenson" and "her refusal to allow any man, whether it was her father or Jesus, to be her protector."

The teacher quickly dismissed the class as the time was exhausted. Denise remained to speak with the teacher.

Statistics/MAT2023

Alden Starnes, Professor

Students - 12 women, 4 men

Tuesday, July 28, ADM, 101, 11:00 a.m.

The teacher arrived several minutes before class was scheduled to begin. He opened a window and began an informal conversation with the half dozen students who were already present. The desks in the classroom, approximately 30 of them, were arranged in rows. The students chose seats in various sections of the classroom.

As class convened, the teacher spoke of two students who had come to his office seeking help. He encouraged others to come by also. The teacher placed his math book on the lectern and began a lecture on sampling error. He called one student, "Mr. Poe," by name and asked him a question, which the student answered correctly. He then walked to the front of the students, almost into the aisle, and began asking questions of other students, addressing them by their last names, preceded by "Miss" or "Mr." The students answered some of his questions, however, generally, they remained quiet, appearing somewhat confused and unsure about the material being discussed.

The teacher began discussing another section of the assigned material, and stated that the section included good

potential test questions. He handed back the homework and began to work a problem on the chalkboard that the students had difficulty solving. He asked them to work along with him. At the completion of each step, he addressed students by their last names, preceded by "Miss" or "Mr.," once again, and asked if their answers agreed with his. Approximately one-third of the class had begun interacting at this point in the class period.

The teacher asked them to work a problem on their own. A female student, sitting on the teacher's left in the right front section of the classroom began helping the male student sitting behind her. After ample time had expired, the teacher called one female student by her first name, "Tommie," asking if she had "completed the problem." She answered "No". "Has anyone finished?" asked the teacher. "Patience!" responded Mr. Poe. The teacher and the other students laughed.

Later in the class period the teacher discussed the "normal curve" and "standard normal curve." He asked them to work one more problem. After some time had passed, the most vocal student, a female, sitting on the teacher's left the front corner of the classroom expressed "difficulty in completing the problem." He moved to a position directly in front of her, leaned over, and explained more fully, while

pointing to the paper on her desk. He encouraged her, saying "You're correct so far. Continue with the next step."

A few minutes later, the teacher wrote the next step on the board. After a few minutes he began asking students if they had completed the problem, calling each by name, once again, "Miss Richey," "Miss Prater," and "Miss Harris". Approximately 8-10 of the 16 students present spoke at one time or another during the class period.

The teacher and the students continued working more problems together. He showed great concern for the students' success in the course, asking repeatedly "Is this beneficial. Does it help you understand how to complete these problems."

At the end of the class time, he asked for further questions, and encouraged them to drop by his office. He opened the door for them and said good-bye to each student, addressing each as "Mr.," and "Miss," as they left the classroom.

Physical Science/PHS1064

Craig Flowers, Professor

Students - 5 women, 2 men

Thursday, July 30, ADM, Room 201, 8:00 a.m.

Although the class was scheduled to begin at 8:00 a.m. the teacher did not arrive until 8:05. Three students were present at that time. He gave an exam copy to the only male student present, which the student took across the hall to complete.

As the students continued to arrive, they sat at desks which were grouped in seven rows. They chose desks in various sections of the classroom. The majority of them sat in the middle front section, directly in front of the teacher. There was very little student to student interaction, except for a quiet conversation between two women students. The teacher and the male student sitting in the middle front section of the classroom became involved in an informal conversation about "the date of the dedication of the new science building."

The teacher returned the student's exams, wrote grade averages on the board, and stated that he was happy with what they had accomplished. He called each student by name as he returned their papers, and thoroughly reviewed the exam by asking indirect questions of the students. All six

students present at that time responded, at one time or another, to the teacher's indirect questioning.

The teacher maintained good eye contact with the students as he stood behind the lectern, occasionally moving to the board to draw a diagram or write an important word or phrase. The male student who had been taking the makeup exam returned to the classroom and began answering questions also. The question and answering session on "stars and weather patterns" continued until all exam questions were covered.

The teacher asked if the students had any more questions. None were voiced and he proceeded to the new material assigned, the focus of which was "rocks and minerals." The teacher asked numerous indirect factual questions throughout the remainder of the class period; however, he answered most of them himself.

The teacher interjected very little humor into his teaching. He spoke somewhat quickly, with a moderately loud volume at certain times, and then more slowly, with a softer volume at other times.

The students sat at their desks in a relaxed manner and carefully took notes in an unhurried fashion. The gentle manner of the teacher supported this type of classroom atmosphere.

As class time was exhausted, the professor dismissed the students quickly and quietly. The students left the room involved in little interaction with the teacher or each other.

Old Testament Survey/REL1013

Tim Crawford, Professor

Students - 8 women, 1 man

Thursday, July 30, ADM, Room 201, 11:00 a.m.

The teacher arrived promptly at 11:00 a.m. The students, male and female, had been conversing quietly with classmates seated close by. They had chosen desks in equally distributed positions around the room.

The teacher stood behind the lectern temporarily as he skimmed his notes, then moved to stand directly in front of three of the women students sitting in the left front corner of the classroom. He immediately began talking about Gideon, a judge in Israel. He joked and said that "Gideon held this position before he started delivering Bibles to hotel rooms." Some students smiled while others chuckled.

The teacher maintained good eye contact with each of the students, even the two women sitting in the back of the classroom. He actively moved as he raised his make-believe shovel into the air, demonstrating how "Gideon separated the chaff from the grain while standing in a pit, instead of on a hilltop, because of his fear of the Midianites."

The male student arrived 15 minutes late, and apologized, saying he had just finished an exam in another class. The teacher replied, "Fine--no problem." and resumed

the story he was telling. Several students, all female, interrupted him and asked questions during this time. He happily halted the story, answered the questions fully, and then resumed the account. The teacher used maps a great deal of the time and pointed out particular cities where the events took place, and the routes that were used as journeys were made from one city to another.

The teacher's overall manner included smiles and positive gestures. His speech was eloquent as he expounded on the scriptures.

At the end of the first hour of class, the teacher gave the students an opportunity to get a drink of water. As they returned, one or two at a time, they became involved in a time of sharing notes, and informal conversation with fellow students until the teacher recommenced the class. The male student spoke quietly with the female student sitting beside him.

When the class resumed, the teacher discussed Samson and his "poor choice of words in referring to his wife as a heifer." The class laughed. He also spoke of Hannah and her level of intelligence, "far above that of her husband, Elkanah," he said. Quiet whispers could be heard from around the classroom. He later discussed Delilah's dealings with Samson saying "Samson must have had the brain of a

gnat." Naturally, the women in the class broke into laughter once again.

The teacher told the students he would be available after class for questions. However, as the class period ended the students left quickly and quietly with little interaction.

Old Testament Survey/REL1013

Tim Crawford, Professor

Students - 10 women, 7 men

Monday, September 30, ADM, Room 201, 12:00 a.m.

I returned to observe this class again during the fourth week of the fall semester. Once again, the teacher arrived promptly at 11:00 a.m. The students had been conversing quietly with classmates seated close by. The teacher assumed a position to the right of the lectern, and moved to the left and right of the lectern throughout the class period, occasionally stepping to the chalkboard to write a Hebrew term or some other important word or phrase.

"Does Genesis 1 say God created the sun and the moon?" he asked. There was no response. Finally a female student sitting in the left front corner of the classroom, directly in front of the teacher responded "Yes". "Tara is willing to risk it" replied the teacher. "That's correct, Tara" he said. "The Bible says nothing about the creation of a lunar deity, does it?" Many respond, "No". "The moon alone did God create," he emphasized. This began an extended period of discussion of "God's observation that his creation was good or very good."

This was followed by a an exchange of ideas on the three ways "Adam" is used in Genesis, "as (a) a personal

name, (b) a man, and (c) mankind." Male and female students alike interjected their thoughts and discussed their positions on the matter at length. As the class drew to a close, the teacher discussed "God's creation of man and woman", and "the relationship that he desired to exist between them, one of a partnership" he said. He further suggested to the students that they, as Christians, "denounce the master/servant stance so prevalent in many religions and cultures today and return to the partnership position for man and woman that God intended."

He returned their tests, told them their grades were higher than he had anticipated, and asked those having questions to remain after class. One male and one female student remained for a very short period of time. The teacher was the last to leave the room.

Foundations of Education/EDU3013

Gerald Clay, Professor

Students - 9 women, 1 man

Friday, July 31, 11:00 a.m., Library, Curriculum Lab

The day was warm, however, the temperature of the classroom/lab was comfortable due to the open windows, as well as the two fans that had been set up. The overall classroom environment provided a pleasant atmosphere for learning. Large plants were positioned near the open windows, and an array of educational pictures and posters were displayed on the walls.

The room contained three tables at which six students could sit comfortably. These were placed close together in front of the lectern at which the teacher stood for most of the class time. Two were positioned vertically and the third horizontally. The classroom/lab held the most current materials and equipment available, including shelves of books, and a number of computers and printers.

The professor and four female students became involved in an informal conversation, mainly concerning the teacher's trip to Richmond, as they awaited the arrival of the other students. A discussion evolved from his statement that "they as future teachers in Virginia would no longer be certified to teach, but licensed to teach."

Two more female students arrived and entered into the discussion. Comments were made on "the high rate of absenteeism that day." The teacher decided to begin the class, hoping that others would arrive soon. He stated that attendance, up to this point, had been exceptional and that he had expected at least one day like this. One male student arrived a few minutes later.

The teacher employed a lecture-discussion format and immediately began to challenge the students by asking indirect questions, factual and analytical, one after another. The students responded to his questions, individually and collectively. They, in turn, asked him many questions and made comments without hesitation.

The teacher in all cases made eye contact, assumed an attentive posture, and frequently left the lectern to walk toward the students when answering their particular questions. He acknowledged all comments made by students and expanded on them fully. However, he rarely called the students by name.

The teacher had a pleasant voice, with clear enunciation and a volume appropriate for the size of the classroom. His manner of instruction giving was thorough, precise, and detailed. He, seemingly, believed in making his contribution to the classroom learning experience,

relating his knowledge and his experiences. However, he also expected the students to do the same, and challenged them, repeatedly, to continue the interaction and to then to elaborate more fully on the comments they offered.

The teacher discussed the situation in the 1700s and 1800s as far as women were concerned. He stated that "the common thinking was that women should be teachers because they (a) had no other vocations to choose from, (b) had that maternal instinct, so necessary in teaching, and (c) were not fit to be leaders--politicians, ministers, etc." One female student stated emphatically, "I'd like to show them what we're doing today". The class, professor and students alike, concurred with her statement, nodding in agreement and making private comments to others around them.

The teacher asked a question of the only male student present. He had been quieter than the women, however, he answered the question and, later, began interjecting more of his personal ideas into the discussion.

At the end of class, the teacher told them to "think about your own philosophy of education." He stated that it one of the final exam questions would involve writing this.

At the end of class, the male student left the room quickly, however, all of the women remained, asking questions, and making comments about their philosophies.

Foundations of Education/EDU3013

Gerald Clay, Professor

Students - 9 women, 4 men

Monday, Sept. 30, 9:00 a.m., Library, Curriculum Lab

I returned to observe this class during the fourth week of the fall semester, and found a similar situation to be occurring, with only a slightly lessened amount of interaction. The students, 9 female and 4 male, were involved in a moderate amount of informal interaction before class began. The students conversed mainly with fellow students at their own tables, however, the only female at one table conversed with the two females at another table.

The teacher arrived just as it was time for class to begin. He seemed rushed this time and hurriedly began setting up a cam corder for one of the students who needed a tape of the class. He quickly began returning tests taken earlier by the students. Once again, though he did not call students by name as he returned their papers or at any other time during the class period.

The teacher employed a lecture-discussion format and immediately began to challenge the students by asking indirect questions, factual and analytical, one after another. The students were very quiet during the beginning

minutes of this period of observation, with few responses being made to his questions.

The teacher would occasionally make humorous statements concerning the limited amount of classroom interaction occurring including "Hello", "Anybody out there?", and "Boy, you can tell this is a Monday morning." At one point in the discussion, he opened a window and asked "Does that help?"

Slowly, the students, male and female, began answering questions and interjecting their ideas. They discussed "three roles of our schools: reproduction, readjustment, and reconstruction." They talked about "Brown versus the Board of Education (1954)," "the Civil Rights Act of 1965," "and Public Law 94142." "What does society expect from their schools?" asked the teacher. "Better teachers" replied one male student. "Improved facilities" answered a female student. "To whom do you listen?" the teacher inquired. Many students responded, "the PTA", said one female student, "the Board of Supervisors" replied a male student. "John" he said, "You're the school superintendent. How will you decide which requests to fulfill first?" "I'd satisfy the PTA." "Why?" asks the teacher. "Because it has direct local impact on me" says John. "But what about the legal authorities. When would you meet their demands?" Many students enter into the discussion, all at one time,

conversing with the teacher and fellow students sitting nearby.

On and on went the discussion until all of the class time was consumed. The teacher gave them the assignment for the following day, telling them to "make a list of values at the national level, a list of values at the local level, and to be ready to discuss how they were alike on Wednesday." The students left quite hurriedly, and the teacher was the last to leave the classroom.

VITA

Name: Mary Lou Cole

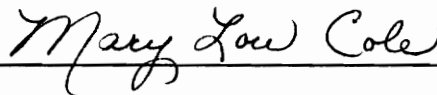
Permanent Address: 49 College Drive, Bluefield, Virginia

Major: Counseling and Student Personnel

Degree: Master of Arts

Date to be Conferred: December, 1992

Educational Institutions Attended	Degree
University of Cincinnati Cincinnati, Ohio	
Southern Baptist Theological Seminary Louisville, Kentucky	
Bluefield College Bluefield, Virginia	B.S. Behavioral Science
Virginia Polytechnic Institute and State University Blacksburg, Virginia	M.A.Ed. Counseling and Student Development



(Signature)