

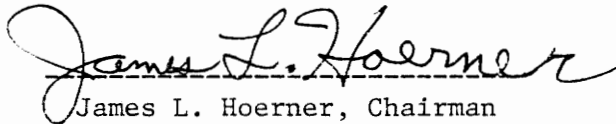
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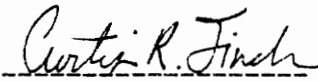
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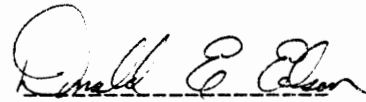
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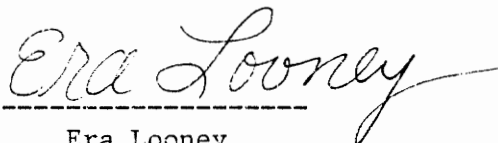
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in partial fulfillment of the requirements for the degree of  
DOCTOR OF EDUCATION  
in  
Vocational and Technical Education

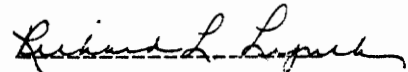
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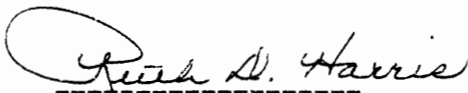
  
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## ACKNOWLEDGEMENTS

The researcher wishes to express her sincere appreciation to the many individuals whose cooperation and interest made this study possible. Although it would be impossible to recognize the contributions of each individual, the efforts of some do deserve special recognition.

To Dr. James L. Hoerner, the researcher's major advisor and graduate committee chairman, special gratitude is expressed for his guidance, encouragement, and constructive review throughout the conduct of this study. The researcher appreciates his counsel and support regarding this study.

To each of the members of the researcher's doctoral committee, Dr. Curtis R. Finch, Dr. Era Looney, Dr. Donald E. Elson, Dr. Richard L. Lynch, and Dr. Ruth D. Harris, appreciation is expressed for their advice and support.

To Dr. Robert B. Frary, appreciation is extended for his advice and assistance in developing the statistical design of the study.

To the panel of experts, appreciation is expressed for their participation in phases of the study.

Finally, the researcher wishes to express deep love and appreciation to her family, for their love, prayers, understanding, encouragement, and confidence in her which made possible the completion of this dissertation. The researcher will always remember their many sacrifices.

## TABLE OF CONTENTS

	Page
ACKNOWLEDGEMENTS . . . . .	ii
LIST OF TABLES . . . . .	vi
Chapter	
1. INTRODUCTION . . . . .	1
BACKGROUND OF THE PROBLEM . . . . .	1
STATEMENT OF THE PROBLEM . . . . .	6
RESEARCH QUESTIONS . . . . .	6
ASSUMPTIONS OF THE STUDY . . . . .	7
LIMITATIONS OF THE STUDY . . . . .	7
DEFINITION OF TERMS . . . . .	7
SUMMARY . . . . .	10
2. REVIEW OF LITERATURE . . . . .	12
SEX-NEUTRAL SCHOOL: FACT OR FICTION . . . . .	12
The Impact of Schools on Males . . . . .	14
The Impact of Schools on Females . . . . .	17
Curricular Materials, Guidance Materials and Sex Bias . . . . .	21
Learning and Sex Bias . . . . .	23
SEX STEREOTYPING IN VOCATIONAL EDUCATION . . . . .	25
SEX AND OCCUPATIONAL CHOICE . . . . .	29
LEGISLATIVE INITIATIVES TO ALLEVIATE SEX STEREOTYPING . . . . .	41
SUMMARY . . . . .	44

Chapter	Page
3. RESEARCH METHODOLOGY . . . . .	48
RESEARCH QUESTIONS . . . . .	48
RESEARCH PROCEDURES . . . . .	49
Selection of the Sample . . . . .	49
Instrument Development . . . . .	51
Literature Review . . . . .	52
Development of Potential Basic Sex Bias Belief Statements . . . . .	53
Development of Sex Bias Scales . . . . .	53
Panel of Experts . . . . .	54
Pilot Test of Sex Bias Scale . . . . .	57
Reliability of Sex Bias Scale . . . . .	59
Final Format of Sex Bias Scale . . . . .	61
Data Collection . . . . .	61
DATA ANALYSIS . . . . .	62
SUMMARY . . . . .	64
4. RESULTS . . . . .	66
INTRODUCTION . . . . .	66
RESPONDENTS . . . . .	67
RELIABILITY COEFFICIENTS OF SEX BIAS SCALE . . . . .	77
FINDINGS FOR RESEARCH QUESTIONS . . . . .	77
SUMMARY . . . . .	90

Chapter	Page
5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS . . . . .	93
SUMMARY . . . . .	93
Statement of the Problem . . . . .	94
Research Procedures . . . . .	95
Analysis of the Data . . . . .	99
Results . . . . .	100
Description of Respondent Characteristics . . . . .	100
Reliability Coefficients of Sex Bias Scale . . . . .	101
Findings for Research Questions . . . . .	102
CONCLUSIONS . . . . .	108
RECOMMENDATIONS . . . . .	112
Recommendations Resulting from the Study . . . . .	112
Recommendations for Further Study . . . . .	114
BIBLIOGRAPHY . . . . .	116
APPENDICES	
A. FACT SHEET: WOMEN AND WORK . . . . .	125
B. SOME DAMAGING EFFECTS OF SEX STEREOTYPING ON GIRLS AND WOMEN . . . . .	131
C. SOME DAMAGING EFFECTS OF SEX STEREOTYPING ON BOYS AND MEN . . . . .	136
D. VOCATIONAL-OCCUPATIONAL EDUCATION PROGRAMS ON THE POSTSECONDARY LEVEL . . . . .	143
E. PANEL OF EXPERTS: GROUPS A AND B . . . . .	147
F. EVALUATION FORM OF SEX BIAS SCALE: GROUP A . . . . .	149

Chapter	Page
G. EVALUATION FORM OF SEX BIAS SCALE: GROUP B . . . .	157
H. COVER LETTER TO PILOT STUDY PARTICIPANTS . . . . .	166
I. COVER LETTER TO SAMPLE . . . . .	168
J. SEX BIAS SCALE: FORM A . . . . .	170
K. SEX BIAS SCALE: FORM B . . . . .	177
L. FOLLOW-UP LETTER TO SAMPLE . . . . .	184
VITA . . . . .	186
ABSTRACT	

LIST OF TABLES

Table	Page
1. Percentage Distribution of Enrollment in Vocational Education Areas by Sex 1977-Projected . . . . .	26
2. Women in the Labor Force, Selected Years, 1900-75 . . . . .	31
3. Occupational Distribution of Workers by Sex, 1973 . . . . .	32
4. Median Earnings of Year-Round Full-Time Workers, By Sex, 1970-74 (Persons 14 Years of Age and Over) . . . . .	35
5. Occupational Distribution of Employed Persons by Education, Sex, and Income, 1970 . . . . .	36
6. Number of Persons and Percent Women Employed in Selected Occupations 1976, Male-Intensive Occupations . . . . .	37
7. Number of Persons and Percent Women Employed in Selected Occupations 1976, Female-Intensive Occupations . . . . .	38
8. K-R 20 Coefficients for Reliability of Sex Bias Scale . . . . .	60
9. Male and Female Response Rates . . . . .	68
10. Age Representation of Respondents . . . . .	70
11. Total Years Teaching Experience of Respondents . . . . .	71
12. Total Years Occupational Experience of Respondents . . . . .	73
13. Representation of Respondents in Programs of Varying Sex Orientation . . . . .	74



Table	Page
14. Highest Degree Earned by Respondents . . . . .	75
15. Representation of Respondents in Campuses of Varying Size . . . . .	76
16. K-R 20 Coefficients for Reliability of Sex Bias Scale . . . . .	78
17. Basic Sex Bias Beliefs of Postsecondary Occupational Educators . . . . .	80
18. Means and Standard Deviations of Sex Bias Scores for Male and Female Respondents . . . . .	82
19. Means and Standard Deviations of Sex Bias Scores for Educators in Sex-Oriented Programs . . . . .	83
20. Means and Standard Deviations of Sex Bias Scores for Educators in Campuses of Varying Size . . . . .	85
21. Correlation Coefficients and Probability For Sex, Age, Years of Teaching Experience, Years of Occupational Experience and Highest Degree Completed With Sex Bias Scores . . . . .	86
22. Multivariate Analysis of Variance for Mean Scores of Same Sex Bias, Opposite Sex Bias, and General Sex Bias Among Educators in Sex-Oriented Occupational Programs . . . . .	89
23. Multivariate Analysis of Variance for Mean Scores of Same Sex Bias, Opposite Sex Bias, and General Sex Bias Among Educators in Different Campus Size . . . . .	91

## Chapter 1

### INTRODUCTION

If we defined all roles as human roles, we would not be asking men to display their masculinity or women to display their femininity. Rather, we would be asking humans to display their humanity (Warren Farrell, author, The Liberated Man).

Unfortunately men and women do not always see each other as equally capable in the work force. Our educational system, for many years, has perpetuated the notion that men and women are not equal in occupational capabilities. This notion of occupational inequality has resulted in sex stereotyping in many fields. The printed material, television media, and human behavior give credence to sex stereotyping in occupational education (Deckard, 1975; and Roby, 1975).

This chapter is concerned with the problem of the study. Specifically, the chapter contains six discussion areas:

- (1) Background of the Problem, (2) Statement of the Problem,
- (3) Research Questions, (4) Assumptions of the Study, (5) Limitations of the Study, and (6) Definition of Terms.

### BACKGROUND OF THE PROBLEM

One of the mechanisms whereby individuals order their lives is categorizing people according to characteristics shared

by all persons in that category. The potential problem arises after categorizations when these grouped individuals are also thought to have common behaviors, abilities, or traits. These latter beliefs or judgments are called stereotypes (Rice and Etheridge, 1977).

All too often stereotypes are oversimplified and tend to be false descriptions of the people in that category. Behavior is influenced by stereotypes in several ways. Stereotypes influence the way individuals behave toward those about whom the stereotype is held and influence the behavior of those individuals who have been stereotyped. Discrimination occurs when individuals are treated differently because they belong to a category of people about whom a stereotype is held. When discrimination restricts or denies the rights, privileges, and choices of individuals, it becomes a basis for legal recourse.

Sex bias is a more inclusive term. It includes not only acts of sex discrimination, but also the entire range of behaviors of males and females directed toward either sex. Sex bias is also based on the assumption that either sex is superior to the other.

The effects of sex stereotyping and sex bias are many. They limit the awareness, potential, options, and activities of males and females. Such limitations restrict individual decisions and impede individual advancement in a variety of life-choice determinations, particularly work-related life choices such as

career options, training, hiring practices, earnings, and occupational expectations (Rice and Etheridge, 1977).

Related literature giving recognition of the effects and past repeated occurrences of sex stereotypic, sex biased and sex discriminatory practices in work-related education, together with new legal requirements to address these issues (Chapter 2), established the need to conduct this study to determine selected occupational educators' basic beliefs regarding sex bias. Research demonstrates that teacher expectations operate as a self-fulfilling prophecy to each student: the students learn what teachers expect them to learn. Since educators play a major role in the educational experiences of students, and because studies show that teacher expectations influence student motivation and achievement (see Chapter 2), the beliefs held by educators in regard to appropriate male and female roles and abilities need to be investigated. More specifically, this study is concerned with the basic sex bias beliefs of postsecondary occupational educators in Region Three (as defined by the U.S. Office of Education).

"Sexism in education and work exists and must be eliminated" (Bailey and Stadt, 1973, 147). Men and women must be provided with equal educational and occupational opportunities. Although nonsexist programs and materials to enlarge the career possibilities and raise the aspirations of males and females should be given

high priority in our educational programs, the removal of sex bias extends further than a simple revision of textbooks and materials. It demands new modes of thinking concerning the needs of individuals and restructuring in thinking regarding the capacities of both males and females (Hacker, 1974; and Gough, 1976). Educators, counselors and practitioners are key individuals in the various occupational fields who may be able to bring about the needed behavioral change in eliminating sex stereotyping. Sex differences do exist and will continue to exist, but these differences do not make one sex superior to the other. Both men and women have worthwhile contributions to make to each other, to society, and to all occupations.

Through the enactment of Title IX of the Education Amendments of 1972 and the Education Amendments of 1976, attention has been called to the practice of sex stereotyping in educational programs. As a result, the need to identify sex biased attitudes and practices among occupational educators and the need to develop strategies to eliminate sex stereotyping in occupational areas have advanced upward in priority.

Title IX provides that:

No person in the United States shall, on the basis of sex, be excluded from participation in, be denied benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance (Lewis and Kaltreider, 1976, 29).

In relation to occupational education, Title IX regulations prohibit sex discrimination in recruitment and admissions policies,

including "The separate ranking of applicants, application of sex-based quotas, administration of sex biased tests or selection criteria, and granting of preference to applicants based on their attendance at particular institutions, if the preference results in sex discrimination" (Lewis and Kaltreider, 1976, 31).

Through Title II of the Education Amendments of 1976, all states are required to submit detailed plans for eliminating sex stereotyping followed by annual assessments of the states' success in achievement of state goals. These reports are designed to provide local, state, and federal officials with information about the extent of sex stereotyping and the relative success of various strategies used to eliminate it.

If persons involved with occupational education programs are to be able to comply with the intent of Title IX and the elimination of sex stereotyping as described in the 1976 Education Amendments, it will become necessary to: (1) determine the extent of sex bias of occupational educators, counselors, and practitioners; (2) identify measures presently being employed to eliminate sex stereotyping; and (3) encourage occupational educators, counselors, and practitioners to identify needed strategies to further eliminate sex stereotyping.

Once basic sex bias beliefs have been determined and strategies identified, then these strategies should be integrated into the work and instructional settings of occupational

programs. Occupations would be free of sex bias; and students, educators, and practitioners could then identify with the dignity of the occupation and not be inhibited by sex stereotyping.

#### STATEMENT OF THE PROBLEM

The central problem of this study was to identify and compare the basic sex bias beliefs of (1) male and female postsecondary occupational educators; (2) postsecondary occupational educators teaching in male-oriented, nonsex-oriented, and female-oriented programs; and (3) postsecondary occupational educators teaching in small, medium, and large campuses. A secondary problem was to determine (1) if there was a relationship between the biographical variables (sex, age, educational level [highest degree earned], years of teaching experience, years of occupational experience) and the identified basic sex bias beliefs of postsecondary occupational educators; and (2) if there were differences in the identified basic sex bias beliefs of postsecondary occupational educators who teach in programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented) and who teach in campuses of varying sizes (small, medium, and large).

#### RESEARCH QUESTIONS

This study sought to answer the following research questions:

1. What are the basic sex bias beliefs of postsecondary occupational educators?
2. Is there a relationship between age and basic sex bias beliefs of postsecondary occupational educators?
3. Is there a relationship between male and female postsecondary occupational educators and their basic sex bias beliefs?
4. Is there a relationship between years of teaching experience and basic sex bias beliefs of postsecondary occupational educators?
5. Is there a relationship between years of occupational experience and basic sex bias beliefs of postsecondary occupational educators?
6. Is there a relationship between educational level (highest degree completed) and basic sex bias beliefs of postsecondary occupational educators?
7. Is there a difference in basic sex bias beliefs of postsecondary occupational educators who teach in occupational programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented)?
8. Is there a difference in basic sex bias beliefs expressed by postsecondary occupational educators teaching in campuses of varying sizes (small, medium, and large)?



## ASSUMPTIONS OF THE STUDY

This study is based on the following assumptions:

1. Sex stereotyping exists in occupational education.
2. There are postsecondary occupational programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented).
3. The statements included on the Sex Bias Scale are representative of occupational educators' basic beliefs regarding sex bias.

## LIMITATIONS OF THE STUDY

The following limitations are applicable to this study:

1. This study was limited to occupational educators on the postsecondary level.
2. This study was limited to Region Three (as defined by the U. S. Office of Education).
3. The sex orientation of the occupational programs was based upon student enrollments within USOE Region Three postsecondary institutions.

## DEFINITION OF TERMS

In order to clarify the meaning of terms associated with this study, the following definitions are provided:

Basic Belief. A statement about an object (in this study, sex bias) with which an individual or group agrees or accepts (believes) (Edwards, 1957, 10).

Sex-Role Stereotyping. The unconscious or conscious values and assumptions which stereotype the sexes and channel females and males into those attitudes, interests, activities, and goals considered "appropriate" for their particular sex (Lewis and Kaltreider, 1976).

Sex Discrimination. Process whereby individuals are treated differently because they belong to a category of people about which a stereotype is held (Rice and Etheridge, 1977).

Sex Bias. The entire range of behaviors of males and females directed toward females or males and based on the assumption that either sex is superior to the other (Rice and Etheridge, 1977).

Vocational-Occupational Education Programs. Those programs on the postsecondary level that are listed under the following six major vocational subject areas: (1) Business and Commerce Technologies; (2) Data Processing Technologies; (3) Health Services and Paramedical Technologies; (4) Mechanical and Engineering Technologies; (5) Natural Science Technologies; and (6) Public Service Related Technologies. These are programs which lead to associate degree and/or certificate/diploma (Directory of Virginia's Postsecondary Education and Training Opportunities, 1976-77).

Region Three. An area designated by the U. S. Office of Education to include the states of Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia.

Sexism. Any attitude, action or institutional structure which systematically subordinates a person or group on the basis of gender (Lewis and Kaltreider, 1976).

General Sex Bias. The range of behaviors of males and females based upon general sex bias beliefs normally accepted and perpetuated in the educational system.

Same Sex Bias. The range of behaviors of males and females based upon sex stereotypic beliefs held against one's own sex. These beliefs tend to hold the opposite sex as superior.

Opposite Sex Bias. The range of behaviors of males and females based upon sex stereotypic beliefs held against the opposite sex. These beliefs tend to hold one's own sex as superior.

Sex Bias Scale. An instrument designed to measure general sex bias, same sex bias, and opposite sex bias of postsecondary occupational educators.

Female-Oriented Occupation/Program. One that has a group membership composed predominately (60 percent) of females (Lewis and Kaltreider, 1976).

Male-Oriented Occupation/Program. One that has a group membership composed predominately (60 percent) of males (Lewis and Kaltreider, 1976).

Nonsex-Oriented Occupation/Program. One that has a group membership composed of males and females in approximately equal proportions (45 percent to 55 percent) (Lewis and Kaltreider, 1976).

Large Campus. Postsecondary institution with a student enrollment over 10,000 (Directory of Virginia's Postsecondary

Education and Training Opportunities, 1976-77).

Medium Campus. Postsecondary institution with a student enrollment of 1500 to 10,000 (Directory of Virginia's Postsecondary Education and Training Opportunities, 1976-77).

Small Campus. Postsecondary institution with a student enrollment under 1500 (Directory of Virginia's Postsecondary Education and Training Opportunities, 1976-77).

#### SUMMARY

Sex stereotyping in occupations and sex bias among occupational educators, together with new legal requirements to address these issues, established the need to conduct this study. The problems effected by sex stereotyping and sex bias were discussed. The purpose of this study was identified and specific research questions were outlined. Assumptions and limitations were considered, and terminology used in this study was defined.

## Chapter 2

### REVIEW OF LITERATURE

A review of the literature was undertaken to establish a need for the study and to identify basic sex bias beliefs of post-secondary occupational educators. The search included a review of several studies dealing with sex stereotyping and sex bias in the educational and work settings. Studies were reviewed when considered relevant to the purposes of this study.

This chapter consists of four discussion areas. The first area presents information relevant to sex stereotyping in the schools. The second area discusses sex stereotyping in vocational education while area three delves into the effects of the sex-labeling of occupations. Legislative measures to alleviate sex stereotyping are described in the fourth area.

#### THE SEX-NEUTRAL SCHOOL: FACT OR FICTION

The stated purpose of schools is to educate and equalize opportunity for all citizens. However, there are indications that student success is primarily dependent upon race, socioeconomic class, and sex (Kaufman and Lewis, 1972).

One of the most interesting phenomena about sexism in public education is the openness with which it is practiced (Martinez, 1974). Teachers' interactions with male and female

students continue to be biased in many cases, even though Title IX of the 1972 Education Amendments mandates that sex discrimination be eliminated in federally assisted education programs.

Teachers' basic sex bias beliefs and their sex-stereotypic behaviors is reported by Levy as follows:

For girls, the schools' expectations and traditional sex roles are congruent and provide a strong double-barreled message reinforcing girls' obedience, docility, and dependence. For boys, the schools' expectations, resulting in a confusing double message: Be aggressive, active, achieving, and independent (be masculine), but also be passive, quiet, and conforming (be a good pupil) (Levy, 1972, 27-29).

Educators provide the role models for students during their school experience. Unfortunately, educators tend to perpetuate the value systems that they have been taught and have used to organize their lives. But now with the changing roles for men and women, educators must reorganize their beliefs and examine their attitudes and values (Saxenmeyer, 1973). Rosenthal and Jacobson (1968) have shown that teacher expectation is one of the most important determinants of student achievement. Their research demonstrated that teacher expectations operate as a self-fulfilling prophecy to each student: the students learn what teachers expect them to learn. In another study, Strom (1965) has found that it is the teacher's attitude that affects classroom rapport and behavior and is instrumental in the transfer of teacher motivation to the students. Still further, a number of studies support the notion that the teacher's attitude toward

students is important to his/her effectiveness (Anderson and Brown, 1946; Davidson and Lang, 1960; Goldberg, 1964; and Kearney and Rocchio, 1955).

Several studies indicate that high degrees of sex-appropriate behaviors do not necessarily enhance and may even retard psychological and social adjustment of males and females. Also, in terms of intellectual performance, males and females who are less sex typed have been found to have higher overall intelligence, spatial ability, and creativity (Gough, 1976).

#### The Impact of School on Males

Although there is reason to believe that males are as capable of achievement in school as are females (Parsley and Powell, 1962), there is evidence that teachers do not expect males to do as well. This may well create the "self-fulfilling prophecy effect" reported by Rosenthal and Jacobson (1968). Efforts to manipulate teacher expectancy have shown the depth of teacher sex bias. When males were described to a group of teachers as being superior learners, the teachers rejected this information and instead operated "on the basis of developed attitudes and knowledge about children and tests" (Fleming and Anttonen, 1971). Another study found that teachers expecting males to read well did in fact call forth better performance from males than did teachers who felt that females would be more successful (Palardy, 1969). Thus it seems that teacher expectations do influence

student performance. Reading is regarded as a feminine activity, and Dwyer (1973) has found that this sex stereotypic classification has the effect of lessening males' motivation to excel in reading.

The school provides academic pursuits that are clearly identified as more appropriate for males than females. Thus, more males than females are "tracked" in science and mathematical courses, and the teachers expect the males to excel. Once again, teacher expectations influence student achievement (Winkler, 1966; and Lavin, 1965).

The American pattern of female superiority in verbal skills and male superiority in mathematical and science skills do not hold true elsewhere. In Germany, for example, females had superior mathematical and science skills and males had higher reading skills. Thus the situation among German students is contrary to the American situation. These data cast doubt on any assertion regarding the innate quality of differences in performance (Preston, 1957). The differences between American and German students suggest that the way school and culture respond to sex differences between males and females contributes to differences in reading, mathematical and science performance.

The above-mentioned studies provided potential basic sex bias beliefs. Specifically, the following statements were recorded:

- Male students are better on the average in basic academic skills than female students.



- Male students are generally more capable of being high achievers in science and mathematics than female students.
- Female students generally have greater verbal ability than male students.

Studies have found that teachers consistently give females higher grades than males (McCandless et al., 1972). The bias against males in grading has been documented for over 60 years (Grambs and Waetjen, 1975). One result of such bias is that secondary school females on honor rolls outnumber males by at least three to one. In schools the students are tracked in ability groups, primarily on the basis of teacher grades and teacher recommendations. Thus, as a result of the biased grading system, males are more frequently found in the lower tracks, and more females than males are in the upper or honors tracks (Arvest and Mittall, 1971; and Schafer and Oleya, 1971). As a result of these studies, the following statement was recorded as a potential basic sex bias belief:

- Female students are generally more conscientious and more interested in getting good grades than male students.

Students have shown that teachers expect males to cause more behavioral problems than females. Teachers give males more attention than females, but the attention tends to be punitive. Teachers react to the physiological differences and cultural expectations that make males more active by punishing them. Thus, punishment is distributed on a sex related basis (Anthony, 1970;

Sears and Feldman, 1966; Fox, 1968; and Coleman, 1961). Teachers expect males to be aggressive, active, and immature whereas females are expected to be dependent, obedient, attentive, mature and eager learners (Grambs and Waetjen, 1975). In regard to these studies, these potential basic sex bias beliefs were recorded:

- Female students generally take constructive criticism better than male students.
- Female students are generally more attentive in class than male students.
- Female students are generally more attentive to detail in listening to and carrying out directions than male students.
- Female students generally present fewer discipline problems than male students.
- Female students are on the average more mature than male students.
- Female students generally have a greater desire to learn than male students.

#### The Impact of School on Females

Sex role stereotyping determines in which subjects female students are permitted to excel. Courses are sex labeled. Although most schools do not say that business-typing and other business courses are for females, very few males enroll for such courses. The males that do enroll in typing classes feel less able, clumsy, and out of place (Mead, 1971). There is research regarding the role of school counselors in channeling males and females into

sex-appropriate courses in high school, and the enrollment figures for these courses reflect accepted policy. Traditionally, female students have been excluded from such courses as auto mechanics and electronic shop, just as male students have been excluded from home economics and nursing (Eyde, 1970; and Trecker, 1973).

School authorities are slowly beginning to recognize that such sex-segregation in courses is outmoded as well as illegal. One sign of the changing times is the policy adopted by the Pennsylvania Department of Education eliminating all sex-segregated and sex-stereotyped classes that had not received departmental approval. The policy states that there shall be "affirmative actions . . . taken immediately to achieve equal opportunities for boys and girls in all aspects of the educational program" (Bard, 1972, 10). Both sexes will receive equal sports equipment and facilities, females may enter team sports, male and female teams will be integrated if feasible, and students of both sexes will be recruited for previously sex-stereotyped or segregated activities.

Coeducational classes are not well received by all educators, as noted in the studies by Lewis and Kaltreider (1976). Some occupational educators indicated their sex bias by stating that safety hazards would increase in shop areas if classes were coeducational, and the shop areas did not have adequate facilities for both sexes.

Research conducted by New Pioneers Project (Smith, 1977) indicated that opening classes to both sexes is not enough; sex stereotyping should be discussed in all classes. These researchers found that students need a chance to talk directly about stereotypes, to understand the conflicting messages they are getting, in order to make conscious choices. Creating an unbiased environment would not be enough, even if it were possible.

Encouragement to go to college is consistently provided to able males of whatever social class, and particularly to those in the middle and upper socioeconomic strata. Able females are not discouraged, but neither are they actively encouraged toward higher education. Females at the lower socioeconomic level are less likely to go to college than males, no matter how smart the females may be (Sewell and Shaw, 1967; and Werts, 1966). At the lowest socioeconomic levels, males have a 26 percent advantage over females in getting to college, an 86 percent greater chance of completing college, and a drastic 250 percent greater chance of attending graduate or professional schools. At the highest socioeconomic levels, males have a 20 percent greater chance of attending college, a 28 percent greater chance of finishing, and a 129 percent better chance of obtaining post-college education (Dunkle and Sandler, 1974). The influence of intelligence does not counteract the contribution made by economic status and sex in determining who will get to college, remain there, and advance into professional work.

These studies led to the recording of the following potential basic sex bias belief statements:

- It is of equal importance for both male and female students to achieve grades high enough to enter college.
- Classes in the occupational education areas should be coeducational because such classes generally present a more realistic picture of the working world by letting students know they will compete for jobs with the opposite sex.
- "Safety hazards" generally increase in laboratory sessions or in shop areas when classes are coeducational.
- Female students have less psychomotor abilities (motor skills) than male students.
- Competition should not be encouraged any more or less between female and male students than students of the same sex.
- All classes must be open to both sexes.
- Shop or lab designs should provide adequate facilities for both sexes - restrooms, lockers, sizes of equipment, etc.
- It is generally more important for male students to receive scholarships than it is for female students.
- Problems associated with sex roles and sex stereotyping should be discussed in class.
- Male students should be encouraged to enroll in such courses as home economics, nursing, and secretarial science.
- Female students should be encouraged to enroll in such courses as automotive, electronics, and drafting technologies.

Curricular Materials, Guidance Materials and Sex Bias

Studies provide evidence that schools perpetuate the damaging effects of sex role stereotypes in their use of biased textbooks and curriculum materials. These materials give primacy to male activities, use the words "man" and "men" to represent human achievement, portray the image of females as secondary to males in our society, and reinforce the sex stereotyping of occupations as male and female (Saxenmeyer, 1973).

Female students are more disadvantaged than male students by sex stereotyped classroom and counseling materials. Educational materials reinforce the negative aspects of sex role stereotypes and guidance materials depict blatantly stereotyped sex roles in careers. Female characters in classroom materials are more likely to be portrayed as passive, incompetent, fearful, emotional, and likely to retreat to the home for support in demanding situations. Females are also presented as capitalizing on their appearance rather than on their intelligence. Most females in educational materials are presented as housewives or professionals, roles which do not reflect the range of roles of all modern females, and which are not varied enough to serve as positive models for the future. In contrast, male characters are adventurous, brave, resourceful, industrious, and generally in charge of themselves and situations. The males show neither weakness nor emotion, nor do they care about their appearance (Stacy et al., 1974).

Studies have found that females tend to express preferences for occupations depicted by female models in audiovisual presentations, when the substantive content of the occupations themselves is not a factor. Data indicate that females will tend to aspire to careers only from within the narrow range of the sex stereotyped courses depicted by female models in the media, or in the domestic roles for which career models are plentiful in the media and in life. These studies support the contention that the predominant use of male career models in textbooks and other instructional and counseling media can and have operated to limit the range of vocational choices and aspirations of females (Plost and Rosen, 1974).

Studies have examined the degree of sex bias in career guidance materials. These materials reinforce existing sex role stereotypes in the world of work by categorizing jobs as male or female, using one-sex illustrations, and presenting sex-based norms (Vetter, 1975).

Studies relating to the use of sex biased curriculum and guidance and instructional materials resulted in the recording of the following basic sex bias beliefs:

- Classroom materials should present women in roles which go beyond child-care, cooking, cleaning, nursing, and teaching.
- Classroom materials should present men in a variety of roles, including child-care, cooking, secretaries, elementary school teachers, telephone operators, and clerks.

- Textbooks and other instructional materials should be examined prior to purchase and use to insure that they are not biased toward either the male or female sex.
- Compassion, consideration, and tenderness should be emphasized more for females than males.
- Assertiveness, risk-taking, and strength should be emphasized more for males than females.

### Learning and Sex Bias

Males and females have been studied and researched, and yet no convincing evidence has been produced to demonstrate that one sex is brighter or more creative than the other, or that there are innate differences in cognitive functioning. Teachers respond to students in terms of sex role stereotypes, and both male and female teachers consistently uphold sex bias (Grambs and Waetjen, 1975).

The cultural view of intellectual differences was strongly supported by Kagan and Moss at the conclusion of their longitudinal studies:

Each individual has a cognitive picture of the person he would like to be and the goal states he would like to command . . . It would appear that the desire to be an ideal male or ideal female as defined by the individual, comprises an essential component of every man's model. Thus the position of a response on a cognitive dimension ranging from highly masculine to highly feminine is a primary determinant of its acceptability and, therefore, of its probability of occurrence (Kagan and Moss, 1962, 9).

Maccoby and Jacklin (1974) report the following differences between males and females to be unfounded:



1. Females are more 'social' than males.
2. Females are more 'suggestible' than males.
3. Females are better at rote learning and simple repetitive tasks, males at tasks that require high level cognitive processing and the inhibition of previously learned responses.
4. Males are more 'analytic.'
5. Females are affected by heredity, males by environment.
6. Females lack achievement motivation.
7. Females are auditory, males visual (349-352).

So far the researchers have provided only inconclusive evidence about the causes of any intellectual or cognitive differences that may exist between the sexes, but they have learned much about the way schools stereotype some modes of thinking as masculine and others as feminine (Maccoby, 1966). Grambs and Waetjen (1975) contend, in view of their studies, that schools must do a better job of supporting intellectual ability in males and in females, so that both may explore the world of ideas freely. So far, intellectual ability and curiosity seem to be male prerogatives.

As a result of these studies, the following statements were recorded as potential basic sex bias beliefs:

- Female students are generally less capable in thought processes than male students.
- Male students generally have greater visual-spatial ability than female students.
- Female students are generally more capable than male students at rote learning and simple repetitive tasks.
- Female students are generally less capable than male students at tasks that require high level cognitive thinking.

- Female students are generally less "analytic" than male students.

#### SEX STEREOTYPING IN VOCATIONAL EDUCATION

Vocational education programs are prone to reflect rigid basic beliefs of appropriate masculine and feminine occupations. Thus, females constitute an overwhelming majority in homemaking, health occupations, and office programs whereas males predominate to an equally striking degree in agriculture, the skilled trades, and the industrial and technical fields (Table 1). Traditional stereotypes about "women's work" and overt economic discrimination have greatly diminished the aspirations and restricted the opportunities of secondary school female students (Trecker, 1973). More specifically, in 1975 females constituted slightly over half of all vocational education students. Of the total number of females in vocational education programs, 42 percent were enrolled in homemaking and consumer education courses, and 26 percent were enrolled in office-work related courses (mostly secretarial and clerical). In the field of health occupations, 92 percent of the students enrolled in health and paramedical technology (including dental hygiene and nursing) were females. However, females constituted only 14 percent of those students in mechanical and engineering technologies (Harrison, 1978).

"Vocational education has a unique opportunity to contribute to the goal of career selection on the basis of interest and aptitude rather than on sex-based possibilities" (Lewis and Kaltreider, 1976, 39). This can be accomplished by offering equal access to

Table 1  
 Percentage Distribution of Enrollment in Vocational  
 Education Areas by Sex 1977 - Projected\*

Program	1972	1977	1972	1977
	MALE		FEMALE	
Agriculture	94.6	92.0	5.4	8.0
Distributive	54.7	54.0	45.3	46.0
Health	15.3	17.0	84.7	83.0
Home Economics:	8.4	10.0	91.6	90.0
Office	23.6	25.0	76.4	75.0
Technical	90.2	91.0	9.8	9.0
Trade and Industrial	88.3	87.0	11.7	13.0

\*Includes unduplicated enrollments, enrollments below grade 9, and postsecondary enrollments.

Source: Division of Vocational and Technical Education, Trends in Vocational Education Fiscal Year 1972, Washington: Office of Education, and Welfare, June, 1973, p. 7.

all vocational programs to both males and females. Unfortunately, the data presently available indicate that many current practices in vocational education still reflect the prevalent sex stereotypes.

Kaufman, after conducting a comparative study of vocational education in 1967, concluded:

. . . vocational education . . . is being restricted by the prevailing stereotypes as to the proper occupations for women. These are the same stereotypes that restrict the vocational self-concepts of young girls . . . It has been established for some time that there are no basic differences in intelligence between the sexes. When given the opportunity, women have proven they can handle almost any job that a man can. With the increasing demand for highly skilled individuals, society cannot long afford the waste of human resources caused by the prevailing limitations on the utilization of female abilities (Roby, 1975, 1).

Sex discrimination in vocational education has indeed aroused considerable concern. Hearings before the Subcommittee on Elementary, Secondary and Vocational Education of the Committee on Education and Labor of the U. S. House of Representatives in 1975 documented the need for change and recommended some strategies to effect change, many of which were included in Title II of the 1976 Education Amendments (Lewis and Kaltreider, 1976).

Although opportunities for women to enter nontraditional occupations have increased as a result of the enforcement of laws mandating equal opportunity in employment and the heightened awareness among employers of women's capabilities, women must develop appropriate marketable skills if they are to take advantage

of such opportunities. Vocational education is in an excellent position to equip women with marketable skills, but the vocational programs are not adequately meeting this challenge. Simpson (1970), a past president of the American Vocational Association, has urged vocational educators to take the lead in finding and defining a new day in women's rights and responsibilities.

The preponderance of female teachers in traditionally female vocational courses deprives male students of sex-specific role models. Most traditionally male vocational courses are taught by male teachers, which deprives female students of sex-specific role models. Also, more of the teacher's active attention is given to male students than to females. This attention takes expression as more: (1) one-to-one instruction; (2) comments of approval and disapproval; and (3) active listening on the part of the teacher (Spaulding, 1963).

Still, there are young women who are satisfied with current programs. Trecker (1974) suggests three factors relating to this satisfaction: (1) outright exclusion of females from many vocational opportunities open to males; (2) cultural pressures and assumptions; and (3) circumstance and policy in counseling and administration. This must be remedied if vocational education is to live up to the challenges of the future. Or, in the words of Verheyden-Hilliard, "the glass slipper of sex stereotyped education is far too fragile for tomorrow's world" (1975, 37).

Even though sex bias places constraints upon vocational educators, they are in key positions to serve as potential influences. Being one of the major institutions at the juncture of home and work, secondary and postsecondary schools should be able to develop vocational programs that not only compensate for, but also transcend, the myriad influences that result in the selection of careers on sex-based probabilities.

These studies resulted in the recording of the following statements as potential basic sex bias beliefs:

- Female role models should be provided in such occupational education areas as trade, industry, and technology.
- Male role models should be provided in such occupational education areas as nursing, home economics, and secretarial science.

#### SEX AND OCCUPATIONAL CHOICE

The sex-labeling of occupations is a matter of tradition and history. The jobs males do are not intrinsically "masculine." However, the claim that many jobs require more strength than women possess has rarely been challenged. There is no evidence to suggest that most jobs cannot be done by one sex as competently as by the other. Because we live in a technological society, fewer jobs need to be tied to physiological differences. If cultural attitudes would permit, either sex could be employed in most occupations (Grambs and Waetjen, 1975).

The increasing involvement of women in the paid work force has been one of the most consistent changes in the population of the U. S. (McCune, 1974). In 1900, women comprised about 20 percent of the work force, and by 1975 the percentage of women increased to nearly 40 percent (Table 2 and Table 3). There are more than 36 million women in the work force today. There are increasingly more mothers of school-aged children in the world of work than there are at home on a full-time basis. Approximately one-third of all mothers with children under six years of age are working. Thirteen percent of the families in the U. S. are headed by women. Two-fifths of all adult women are either single, widowed, divorced, or separated, and the Department of Labor predicts upward trends in these areas (Appendix A).

Although these figures indicate increased participation of women in the work force, two distinct occupational systems still persist: (1) an occupational system which determines the jobs and roles that are allocated to men; and (2) an occupational system which determines the jobs and roles that are allocated to women (Lerner et al., 1976, 1-2). Economist Stevenson states that unequal pay for equal work, although important, is just a small part of the reason why women workers receive low wages. After an extensive study of census data, Stevenson concluded that sex segregation in the work force was the real reason for women's low wages (Roby, 1976).

Table 2  
 Women in the Labor Force,  
 Selected Years, 1900-75

Year	Women in labor force (Thousands)	Women in labor force as percent of	
		Total labor force	All women of working age
1900	5,114	18	20
1910	7,889	21	25
1920	8,430	20	23
1930	10,679	22	24
1940	12,845	24	25
1945	19,270	30	36
1950	18,412	29	34
1955	20,584	30	36
1960	23,272	32	38
1965	26,232	34	39
1970	31,560	37	43
1972	33,320	37	44
1975*	36,000	40	46

\*U. S. Department of Labor, Bureau of Labor Statistics, Monthly Labor Review (November 1975), p. 2.

Source: "The Economic Role of Women," reprinted from Economic Report of the President, 1973. Washington: Women's Bureau, Employment Standards Administration, Department of Labor, 1973, p. 91.



Table 3  
Occupational Distribution of Workers  
by Sex, 1973

Occupation	Percent Women	Percent Men
Managers and Administrators	5	13
Private household workers	5	-
Sales workers	7	-
Professional and Technical workers	14	14
Operatives	13	19
Service workers outside the home	17	-
Clerical workers	35	7
Nonfarm laborers	-	8
Craft workers	-	21
Other	4	18

Source: "Women Workers Today," Washington: Women's Bureau,  
Employment Standards Administration, Department of Labor, 1973,  
p. 5.

Willers (1973) believes that one of the roots of this dual occupational system can be traced to the educational system. He stated that "The educational establishment has itself for 2,500 years or more engaged preeminently in subjugating their intellectual and economic roles to supposed male superiorities" (274).

Since 1963, attempts to eliminate sex discrimination of our dual occupational system have been taken through the enactment of numerous legislative and policy measures. However, these measures cannot by themselves successfully eliminate sex discrimination, because they do not take into account the early socialization of males and females in our society. Studies have clearly demonstrated that sex role stereotyping is incorporated into individual attitudes and expectations at a very early age and that schools continue to prepare males and females for adult work roles in a dual occupational system. A difference exists between the reality of women's actual experience in the work force and the misconceptions of that reality, as pointed out by the HEW Advisory Committee on the Rights and Responsibilities of Women (Lerner, 1976).

The women's movement has supported women who decide to pursue nontraditional life styles, but it has not yet had widespread effect in changing patterns of employment opportunity, particularly in traditionally male-dominated fields. Even within the same job

categories, women earn less than men (Table 4). Sixty-eight percent of one sex would have to change jobs to equalize the distribution of the sexes in occupations. This is the major reason for the wage differentials between males and females. Women hold the majority of the low status, low-paying jobs. Vocations such as secretaries, clerical workers, household workers, telephone operators, stenographers, practical nurses, and typists are filled 90 percent or more by women (Lewis and Kaltreider, 1976).

Lewis and Kaltreider's contentions are confirmed by statistics from the U. S. Department of Labor with figures indicating that female college graduates will probably earn less money than male high school graduates, and female high school graduates will not earn as much as males with less than eight years of school, despite the passage of equal opportunity legislation. This differential in earnings is largely due to the different types of occupations men and women tend to hold (Economic Problems of Women, 1973, 102) (Table 5).

Oppenheimer (1970) found stereotypes to be self-perpetuating because women continue to prepare themselves for "feminine" occupations. When Gross (1968) constructed an index to measure occupational sexual segregation, he found that between 1900 and 1960 there was very little change. The tendency for sex-linked occupations to remain segregated still remains (Table 6 and Table 7).

Table 4

Median Earnings of Year-Round Full-Time  
Workers, By Sex, 1970-74  
(Persons 14 years of age and over)

Year	Median Earnings		Women's Median Earnings as Percent of Men's
	Women	Men	
1974	\$6,972	\$11,835	57
1973	6,335	11,186	57
1972	5,903	10,202	58
1971	5,593	9,399	59
1970	5,323	8,966	59

Source: "A Statistical Portrait of Women in the U.S.," U. S. Department of Commerce, Bureau of the Census. (Current Population Reports: Special Studies: Series P-23, No. 58, Washington, D. C., 1976), p. 48.

Table 5

## Occupational Distribution of Employed Persons by Education, Sex, and Income, 1970

	High School		College Graduates		Median Income of Year-Round Full-Time Workers		Women's Earnings as Percent of Men's		
	1-3 Years		4 Years		Percent Men	Percent Women		Men	Women
	Percent Men	Percent Women	Percent Men	Percent Women					
Professional, Technical & kindred workers	2.8	3.6	7.6	7.1	58.9	77.4	\$11,806	\$7,878	66.7
Managers & proprietors	6.9	2.9	11.4	3.8	20.1	4.8	12,117	6,834	56.4
Salesworkers	5.6	10.2	7.5	8.1	8.6	2.3	9,750	4,188	42.8
Clerical & kindred workers	6.8	25.3	10.0	50.4	4.9	12.1	8,617	5,551	64.4
Craftsmen	25.6	2.4	26.4	1.8	3.3	.4	9,254	5,089	55.0
Operatives	27.3	22.5	20.6	11.4	1.4	.6	7,623	4,510	59.2
Nonfarm laborers	9.9	1.6	5.3	.8	.5	.1	6,563	4,291	65.4
Farm laborers & Foremen	1.9	.6	.9	.3	.2	.1	3,519	-----	
Farmers & Farm Managers	2.2	.2	2.9	.2	.8	.1	1,260	-----	
Service workers excluding private household	10.8	25.4	7.5	14.5	1.4	1.9	6,955	3,953	56.8
Private household service workers	.2	5.2	(1)	1.7	(1)	.3	-----	2,101	

Source: Economic Problems of Women, Hearings before the Joint Economic Committee, Congress of the United States, Ninety-third Congress, First Session, Part I, July 10, 11, and 12, 1973, Washington: U. S. Government Printing Office, 1973, p. 102.

Table 6  
 Number of Persons and Percent Women Employed  
 in Selected Occupations, 1976  
 Male-Intensive Occupations

Office of Education Classification	Occupational Title	Total Men & Women (thousands)	Percent Women
Carpentry	Carpenters	1,021	.7
Masonry	Brickmasons & Stonemasons	177	.6
Electricity	Electricians	572	.3
Heavy Equipment (Construction)	Excavation, Grading & Machinery Operators	418	.5
Painting, Decorating, Plastering	Painters, Construction & Maintenance	413	2.9
Plumbing & Pipefitting	Plumbers & Pipefitters	400	.8
Machine Shop Metalworking	Machinists & Job Setters Metal Craft Workers, excluding Mechanics, Machinists & Job Setters	570	2.5
Sheetmetal	Sheetmetal Workers & Tinsmiths	629	3.2
Tool & Die Making	Tool & Die Makers	145	2.1
Auto Mechanics	Mechanics, Automobiles	188	2.1
Air Conditioning	Mechanics, Automobiles	1,124	.6
Aircraft Mechanic	Air Conditioning, Heating, & Refrigeration Mechanics Aircraft Mechanics	178	.6
Appliance Repair	Household Appliances & Accessory Installers & Mechanics	110	.9
Business Machine Maintenance	Office & Machine Repairers	144	2.1
Radio/Television	Radio & Television Repairers	58	1.7
Graphic Arts	Printing Craft Workers	114	3.5
Composition, Makeup & Typesetting	Compositers & Typesetters	380	19.2
Printing Press Occupations	Printing Press Operators	152	24.3
Millwork and Cabinetmaking	Printing Press Operators Cabinetmakers	149	9.4
Stationary Energy Lineman	Stationary Engineers Electric Power Line & Cable Installers & Repairers	78	2.6
Communications	Telephone Installers & Repairers Telephone Line Installers & Repairers	194	.5
		110	.9
		282	5.0
		65	1.5

Source: U. S. Department of Labor, Employment and Earnings, January, 1977.

Table 7  
 Number of Persons and Percent Women Employed  
 in Selected Occupations, 1976  
 Female-Intensive Occupations

Office of Education Classification	Occupational Title	Total Men & Women (thousands)	Percent Women
Tellers	Bank Tellers	371	91.1
Bookkeepers	Bookkeepers	1,688	90.0
Bookkeepers	Billing Clerk	139	87.1
Cashiers	Cashiers	1,256	87.7
File Clerks	File Clerks	269	85.5
Keypunch & Coding Equipment Operators	Keypunch Operators	276	93.5
Receptionists & Information Clerks	Receptionists	502	96.2
Secretaries	Secretaries	3,385	99.0
Stenographers	Stenographers	100	89.0
--	Teacher Aides	320	90.9
Communications Systems Clerks & Operators	Telephone Operators	339	94.4
Typists	Typists	983	96.7
--	Prekindergarten & Kindergarten Teachers	228	98.2
--	Elementary School Teachers	1,383	84.8
--	Secondary School Teachers	1,138	50.5
Nursing	Registered Nurses	999	96.6
--	Health Service Workers	1,745	86.2
Dental Assisting Practical (Vocational)	Dental Assistants	122	98.4
Nursing	Practical Nurses	381	97.4
Nursing Assistance	Nursing Aides, Orderlies, etc.	1,002	86.8
Nursing Assistance	Health Aides & Trainees	240	84.2
--	Private Household Workers	1,125	97.3
--	Childcare Workers	429	98.1
--	Cleaners & Servants	553	97.1
--	Housekeepers	109	96.3
--	Waiters/Waitresses	471	90.7
--	Sewers & Stitchers	812	95.9

Source: U. S. Department of Labor, Employment and Earnings, January, 1977.

Lewis (1968) contends that most traditional job distinctions result from historical accidents and not from real sex differences. These job distinctions act as barriers to prevent females from entering fields commensurate with their capabilities. Women will meet with little opposition if they restrict their career plans to those "feminine" fields such as practical nursing. If major changes are to occur in this traditional pattern of job distinctions, Lewis believes that they must occur on a two-way street: men must be encouraged to enter occupations traditionally limited to women, and women must be encouraged to enter occupations traditionally limited to men.

To reduce occupational segregation, Stevenson (1975) also suggests that women must enter formerly male occupations, and men must enter formerly female occupations. To induce men to enter female occupations, these occupations will have to equal in attractiveness to the occupations now being chosen by men. When occupational segregation is reduced, men and women will have opportunity to: (1) develop to their fullest potential in their professional roles; (2) correlate more effectively their professional roles with their sex roles; and (3) achieve greater fulfillment in life (195).

Social, personal, economic, and educational factors are changing in ways which encourage outside employment. The stigma once attached to working mothers has dissolved, and levels of



education of women are rising. Concurrently, females tend to be enrolled in vocational education programs which either do not prepare them for gainful employment or which prepare them only for low paying, dead end jobs (Steiger and Cooper, 1975).

Some progress in the elimination of occupational stereotyping is occurring, but changes are gradual. Although laws and regulations have helped to curb overt discrimination, subtler forms persist. The schools are in the position to help remedy this situation. In a recent (1975) study of sex stereotyping, Guttentag reports that less sexist definitions of male and female family socioemotional roles could have an ameliorative effect on the stresses which many women now experience. He states that schools are one socializing instrument which could serve in the primary prevention of sexism.

The following statements were recorded as potential basic sex bias beliefs:

- Qualified women should have opportunities to hold and be promoted in jobs traditionally held by males.
- Qualified men should have opportunities to hold and be promoted in jobs traditionally held by females.
- Men and women should be paid equally for equivalent work performed.
- In most jobs, a woman can do everything that a man can do.
- I would consider doing a job that isn't traditional for my sex.

## LEGISLATIVE INITIATIVES TO ALLEVIATE SEX STEREOTYPING

Congress has recognized the extent of sex stereotyping in educational programs and has outlawed many discriminatory practices through various legislative measures. These measures have increased opportunities for males and females to enter the nontraditional occupations (Lerner et al., 1976).

Recent court decisions and new and amended legislation have created new methods to eliminate sex discrimination in education. Although the impact of the new and changed legislation has not been fully felt in education, it is expected to bring about significant changes, from kindergarten through graduate school (Hallam, 1973).

The Vocational Education Act of 1963, amended in 1968, extends vocational education to wider segments of the population. It is designed to: (1) authorize grants for innovative programs to states, nonprofit agencies, or other institutions; (2) provide stipends for training of vocational personnel; and (3) support training for new kinds of occupations and improved vocational counseling and guidance for young people (Lewis and Kaltreider, 1976, 27).

Recognizing the crucial role that schools play in the socialization of young people, including the formation of their ideas about options open to them in the world of work and preparation for their chosen careers, Congress enacted Title IX of the 1972

Education Amendments. Title IX states that, "No person . . . shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity receiving federal financial assistance" (Hallam, 1973, 129). This particular piece of legislation outlaws numerous practices that result in the dualism currently existing in most vocational programs (Government Printing Office, 1975, 43). Pre-school, elementary and secondary schools, institutions of vocational education, professional education, and undergraduate and graduate education are covered in Title IX.

Weinberger, then Secretary of HEW, urged all educational institutions to use Title IX requirements as an opportunity to end sex discrimination in education. "Much of the discrimination against women in education today exists unconsciously and through practices long enshrined in tradition," commented Weinberger (Virginia Vocational Education News, 1975, 8).

The Education Amendments of 1976, emphasizing the elimination of discrimination based on sex, incorporates incentive and accountability provisions aimed at eliminating sex stereotyping in vocational education. This bill provides: (1) at least \$50,000 per year to each state that establishes (within the state board of education or any appropriate agency) an office for the elimination of sex stereotyping in educational programs; (2) funds for special project grants to assist in overcoming sex bias; and

(3) additional funds that may be used to train counselors in the "changing work patterns of women and ways of overcoming sex stereotyping" (Lewis and Kaltreider, 1976, 33).

Title II of the Education Amendments of 1976 focused on the elimination of sex stereotyping in vocational education as a national objective. States are required to submit plans for eliminating sex stereotyping and annual assessments of success in achieving goals. This feedback from the states provides local, state and federal officials concerning the extent of sex stereotyping and the relative success of various suggestions to state and local officials about how programs can be improved.

Legislation that requires accountability at state and local levels can provide only an external impetus, it cannot guarantee the elimination of sex stereotyping. The key to successful elimination of sex stereotyping rests in locally effective programs (Lewis and Kaltreider, 1976).

To provide guidance on the local and state levels, the National Advisory Council on Vocational Education (NACVE) funded the project, S.A.V.E. (Strategies to Achieve Vocational Equality) Your Schools which reviewed and analyzed successful strategies to eliminate sex bias in vocational education. From the review of relevant projects, five basic approaches to alleviation of sex bias were identified. These approaches were: (1) increasing career awareness; (2) recruitment to nontraditional

training; (3) conferences to increase commitment, concern, and activities; (4) materials development; and (5) materials review and revision.

There seems to be a long time lag between enactment of legislation barring sex bias and the emergence of meaningful and widespread social change, because societal attitudes are slow in adjusting to unaccustomed basic beliefs and practices promoting sexual equality. As Lyle and Ross (1973) have stated, the most important changes which will bring about equal employment opportunities are changes in social attitudes about men and women and work. We must reevaluate the way in which we educate young people and the occupations we encourage them to enter.

#### SUMMARY

The indictment against the educational system as a perpetuator of sex bias is a serious matter (Saxenmeyer, 1973). To effect change toward a nonsex biased educational system, educators must understand the nature of sex bias, which is the unconscious underlying network of assumptions that says men and women are and should be different, not only physically, but also in their personalities, abilities, and occupations. An understanding of bias leads to an understanding of how educators unconsciously shape themselves and their students. Educators would be able to analyze how they influence others to meet their own preconceptions;

and also learn how they develop positive traits such as independence in males and nurturance in females, so that these traits can be extended to everyone. Understanding sex bias

- addresses causes
- addresses everyone
- reduces defensiveness, can intrigue, excite, even fascinate
- encourages positive investigation which is consistent with teachers' own goals as educators
- opens opportunities
- appeals to everyone's sense of self-development
- benefits men and women equally (Smith, 1977).

Research studies indicate that sex bias among individuals are affected by several factors. The following are examples of studies that have identified such influencing factors. New Pioneers, a project to eliminate sex bias in occupational education, stated in its findings that sex bias extends in two directions: bias toward the same sex and bias toward the opposite sex. Psychological studies by Maccoby (1966) and Horner (1970) show that modern females hold a very poor self image, thereby supporting the directional nature of sex bias. Howe (1971) documents studies that indicate biases in both directions. Findings from New Pioneers also indicate that sex bias is affected by age: younger adults tend to be more sex biased than other adults (Smith, 1977). Studies have shown that occupational niche and years of

membership within serve as factors in perpetuating the sex biased beliefs of its members (Grambs and Waetjen, 1975; and Keiffer and Cullen, 1974). Still other studies have shown that campus size affects sex bias: individuals within large campuses of post-secondary institutions are less sex biased than individuals within smaller campuses (Miller, 1974).

Damaging effects of sex bias on males and females have been well documented. Frazier and Sadker (1973) list documented examples of these damaging effects on females according to the categories (1) Loss of academic potential, (2) Loss of self esteem, and (3) Loss of occupational potential (Appendix B). For males, damaging effects of sex bias are categorized according to (1) Loss of personality and work options, (2) Loss of academic potential, and (3) Loss of nurturant and social-emotional qualities (Appendix C).

Since educators play a key role in the educational experience of students, and because research studies have shown that teacher expectations are determiners of student motivation and achievement, the beliefs held among educators in regard to appropriate male and female roles and abilities need to be investigated. Many studies have been conducted regarding sex stereotyping in vocational education on the secondary school level but few on the postsecondary level. By investigating the basic beliefs regarding sex bias among postsecondary occupational educators, the researcher hopes to add to the understanding of sex bias and provide evidence of factors which may influence sex bias such as

sex, age, sex-oriented nature of the occupational area of teaching, and years of occupational and teaching experience. The researcher anticipates that this study and others will soon enable educators to understand sex bias and, by doing so, will be able to look at each of their students first as a human being and secondly as a male or female, and help each student develop his/her potential as a human being. Hopefully, educators will be able to recognize the values of individuality, self fulfillment and interpersonal equality among their students rather than be governed in their actions and attitudes toward students by sex-biased beliefs.



## Chapter 3

### RESEARCH METHODOLOGY

This chapter is concerned with the research methodology which was used to answer the research questions relating to the basic sex bias beliefs of postsecondary occupational educators in USOE Region Three. Specifically, the chapter contains three discussion areas: (1) Research Questions; (2) Research Procedures; and (3) Analysis of Data.

### RESEARCH QUESTIONS

Eight research questions delineated the problem and provided more specific direction for this study. Research questions central to the study are:

1. What are the basic sex bias beliefs of postsecondary occupational educators?
2. Is there a relationship between age and basic sex bias beliefs of postsecondary occupational educators?
3. Is there a relationship between male and female postsecondary occupational educators and their basic sex bias beliefs?
4. Is there a relationship between years of teaching experience and basic sex bias beliefs of postsecondary occupational educators?

5. Is there a relationship between years of occupational experience and basic sex bias beliefs of postsecondary occupational educators?

6. Is there a relationship between educational level (highest degree earned) and basic sex bias beliefs of postsecondary occupational educators?

7. Is there a difference in basic sex bias beliefs of postsecondary occupational educators who teach in programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented)?

8. Is there a difference in basic sex bias beliefs expressed by postsecondary occupational educators teaching in campuses of varying sizes (small, medium, and large)? •

#### RESEARCH PROCEDURES

The research procedures which were used in conducting this study are outlined in three areas: Selection of the Sample, Development of the Instrument, and Collection of the Data.

##### Selection of the Sample

Region Three, as defined by the U.S. Office of Education (DHEW Publication No. (OS) 75-126, 1975), is the population from which the sample for this study was drawn. Specifically, the sample included occupational educators randomly drawn from postsecondary institutions in the states of Delaware, Maryland,

Pennsylvania, Virginia, West Virginia, and the District of Columbia. These occupational educators teach in vocational-occupational education programs in areas of Business and Commerce Technologies, Data Processing Technologies, Health Services and Paramedical Technologies, Mechanical and Engineering Technologies, Natural Science Technologies, and Public Service Related Technologies (Appendix D).

The postsecondary institutions were separated into three groups, according to student enrollment: (1) small (under 1500, (2) medium (1500 up to 10,000), and (3) large (over 10,000). Based upon these enrollment figures, there were seven large, 43 medium and 37 small campuses, giving a total of 87 institutions within Region Three. Student enrollment figures were taken from the 1978 Directory of Community, Junior, and Technical Colleges, and the campus size ranges were taken from the 1976-77 Directory of Virginia's Postsecondary Education and Training Opportunities. Since the 1978 directory listed total faculty enrollments, six postsecondary institutions were randomly selected from each of the three groups (small, medium, and large) and telephone calls were placed to the presidents of these institutions. The presidents were asked the percentage of their faculty that are occupational educators. These averaged percentages (52 percent for small, 54 percent for medium, and 28 percent for large) were subsequently used to determine the number

of occupational educators employed in each of the postsecondary institutions. From the total number of postsecondary occupational educators (3202), the NEA Research Division formula (NEA, 1970) was applied to determine the appropriate sample size (250). The formula for this procedure is:

$$n = \frac{[X^2 N \pi (1-\pi)]}{[d^2 (N-1) + X^2 (1-\pi)]}$$

where  $n$  = the required sample size

$X^2$  = the table value of chi square for one degree of freedom and desired confidence level (2.706)

$N$  = the population size ( $N=3203$ )

$\pi$  = the population proportion which it is desired to estimate (.50)

$d$  = the degree of accuracy expressed as a proportion (.05)

It was calculated that 417 postsecondary occupational educators would need to be randomly drawn to maximize the desired 60 percent rate of return and thus, the appropriate sample size of 250. Two large, three medium, and 11 small postsecondary campuses were randomly drawn for inclusion in the study. Equal numbers of occupational educators (139) from each of these three campus size groups were randomly drawn to obtain the desired sample number (417).

### Instrument Development

The scale was chosen to be the appropriate data collection method for this study. By having the respondents indicate their

agreement or disagreement with each scale item, the researcher was able to convert these responses to sex bias scores. As a result of this procedure, the degree (general sex bias) and directional nature (same sex or opposite sex bias) of basic sex bias beliefs of postsecondary occupational educators could be determined.

Literature Review. The beginning step in the formulation of the Sex Bias Scale was a review of the literature concerning basic beliefs regarding sex bias. It was pointed out by Fox (1969) that the choice of selecting an available instrument or developing a new one is frequently made on the basis of the review of literature. Keller (1968) also stated:

The problem of identifying statements of belief . . . requires the selection of literature and research to be reviewed for possible statements of belief, and the development of an instrument which would elicit from a group of respondents a degree of agreement regarding each statement of belief (3).

The literature review indicated that several studies had been conducted concerning sex bias, sex stereotyping and sex bias practices in vocational education. Information obtained through this review of literature was used in determining statements that were subsequently developed into potential basic sex bias belief statements on the scale. Sources for potential basic sex bias belief statements came from literature and research studies investigating: (1) the effects of sex stereotyping and sex bias upon male and female students, (2) sex stereotyping in

curricular and guidance materials, (3) the influence of sex biased beliefs of educators upon student learning, and (4) the sex-labeling of occupations and its effect upon men and women.

#### Development of Potential Basic Sex Bias Belief

Statements. The statements on the Sex Bias Scale represent potential basic beliefs about sex bias. There were no simple rules or criteria for identifying statements of beliefs. Flanagan (1954) considered the problem as using subjective rather than objective reasoning. Research on sex bias and sex stereotyping extended into the sociological, psychological, and educational areas of study. The researcher chose to limit the sources of basic sex bias belief statements to the educational area because the study was concerned with basic sex bias beliefs of post-secondary occupational educators.

The task of developing the Sex Bias Scale involved a process of recording potential statements on cards and developing a potential belief statement from related statements. Each time an item from literature or research addressed sex bias, sex stereotyping, and sex biased practices in the educational and work settings, the statement was recorded on a 3" by 5" card. A total of 84 statements were recorded as potential basic sex bias beliefs. Through refinement and bringing together related statements, the number was narrowed down to 39.

Development of Sex Bias Scales. Research substantiates not only the overall sex bias of educators but also the directional

nature of these biases, i.e., toward the same sex or toward the opposite sex (see Chapter 2). Thus, the 39 statements were written in such a manner that 16 of these statements measure general sex bias and the remaining 23 statements measure same sex/opposite sex bias. Therefore, the instrument yields three-scale scores: General Sex Bias Score, Same Sex Bias Score, and Opposite Sex Bias Score. There are two forms of the instrument: Form A for females and Form B for males. Although in two forms, the Sex Bias Scale is considered to be one instrument because the items are the same on both forms; the difference being that the word "female" on certain items in Form A is substituted for the word "male" on Form B.

Panel of Experts. The content validity of the Sex Bias Scale was determined by submitting it to a panel of experts. Tull and Albaum state that the content of a measurement instrument concerns the "substance, matter, and topics included as they related to the characteristic that is being measured" (1973, 91). Since any measuring instrument represents a sample of the positive items that could have been included, content validation is concerned with "how representative the scale or instrument is of the universe of the content of the property or characteristic being measured" (Tull and Albaum, 1973, 92).

The panel members were contacted by telephone to explain the purpose of this phase of the study and to solicit their assistance.

Individually typed letters explaining the nature of the problem and the need for assistance, the instrument, and a postage-paid, return envelope were then mailed to each person. The panel of experts was composed of two groups. Group A consisted of seven post-secondary occupational educators, each teaching in a different occupational area. The composition of Group B included three Virginia Polytechnic Institute and State University professors; two have expertise in the development of instruments and appropriate scoring procedures and one is knowledgeable in the area of sex stereotyping, sex discrimination, and sex bias (Appendix E).

Group A experts were asked to assess the face validity of the instrument. The criteria which were summarized by Edwards (1957) for the editing of statements to be used in the construction of attitude scales were applied in this phase of the validation process. Specifically, panel members indicated with a checkmark by each statement if they felt:

- (1) The statement would be interpreted in only one way;
- (2) The statement was clear, simple, and direct;
- (3) The statement included only one complete thought;
- (4) The statement was relevant to the study (i.e., sex bias); and
- (5) The statement was easily understood (Appendix F).

In addition, panel members were requested to include any written comments which would improve the clarity of the directions and the



section designed to collect biographic information. When the evaluation forms were completed, a composite of results was compiled on a master evaluation form. If two or more panel members failed to check a criterion for a statement, the item was examined and revised to satisfy the criterion. Also, the written comments were reviewed to help in making the necessary revisions on directions and the biographic data section.

Group B experts were requested to appraise the content validity of the instrument, i.e., how representative the scale or instrument is of the characteristic being measured (sex bias) (Tull and Albaum, 1973), as well as the appropriateness of the scoring procedures. Specifically, panel members were asked if they felt:

- (1) Choice 2 of statements 3, 4, 6-21, 23-25, 30-31 indicate bias toward the same sex (same sex bias).
- (2) Choice 3 of statements 3, 4, 6-21, 23-25, 30-31 indicate bias toward the opposite sex (opposite sex bias).
- (3) Choice 1 of statements 1-39 indicate nonsex-bias.
- (4) Choice 2 of statements 1, 2, 5, 22, 26-29, 32-39 indicate sex bias.
- (5) The three scores (General Sex Bias, Same Sex Bias, Opposite Sex Bias) can range in value from 0 to 1, with the value of 0 indicating nonsex bias and 1 indicating sex bias.
- (6) Statements 1, 2, 5, 22, 26-29, 32-39 can be scored to give a "general sex bias" measure (General Sex Bias Score).

- (7) Statements 3, 4, 6-21, 23-25, 30-31 can be scored to give a "same sex bias" measure (Same Sex Bias Score).
- (8) Statements 3, 4, 6-21, 23-25, 30-31 can be scored to give an "opposite sex bias" measure (Opposite Sex Bias Score) (Appendix G).

All necessary revisions suggested by panel members, including the complete elimination of one item, were made to satisfy the above eight criteria.

The panel of experts, Groups A and B, were contacted in person to explain the purpose of this phase of the study and to solicit their assistance. Although the panel members were given both forms of the instrument (Form A and Form B), they were asked to evaluate Form A only because the statements are the same on both forms with one difference: the word "female" in certain items on Form A is substituted for the word "male" on Form B. After a two-day period, the researcher personally discussed the evaluations and recommendations with each panel member. Letters of appreciation were sent to panel members in regard to their assistance in this phase of the study.

Pilot Test of Sex Bias Scale. A pilot test was conducted by submitting the revised Sex Bias Scale to 150 postsecondary occupational educators to assure the successful administration of the instrument of the study. The purpose of the pilot test was to establish an average time for the completion of the instrument so that this information could be communicated to participants in the main study, to determine the reliability of the instrument, and to test the procedures used in organizing and conducting the mail

instrument as well as the directions the participants would follow. According to Van Dalen (1966):

Before the final form is prepared and distributed to the respondents, tryout or pretesting of the questionnaire is essential for the purpose of validation in terms of practical use. This tryout will lead to revision of certain questions and addition of other items (303).

Five postsecondary institutions were included in the pilot study, one randomly drawn from each of the states of South Carolina, North Carolina, Maryland, Virginia, and Florida. From a total of 259 occupational educators, 150 were randomly drawn for inclusion in the field test. The participants showed:

- (1) representation of occupational educators from large, medium, and small postsecondary campuses;
- (2) diversity of occupational areas of teaching;
- (3) degree and non-degree educators; and
- (4) representation of male and female respondents.

Instruments were mailed to each occupational educator's place of employment. The individual packets sent to each participant contained the Sex Bias Scale, as well as a cover letter and a postage paid return envelope. The cover letter explained the purpose of the study and gave the assurance that their names, postsecondary institutions, and responses would be kept confidential and would not be identified (Appendix H).

After a ten-day period, 90 instruments were returned (60 percent rate of return). After the cut-off date, 22 more instruments were returned, bringing the total to 112 or 75 percent

rate of return. The average time for completion of the Sex Bias Scale was 13 minutes.

Reliability of Sex Bias Scale. The Kuder-Richardson Formula (K-R 20) was used to determine the internal consistency reliability (the homogeneity of items) of the instrument. Since it is generally agreed that a 0.5 reliability is good for instruments that are to be used with groups (Kline, 1975), this was the criterion used for this Sex Bias Scale.

Based upon data from the 90 instruments received at cut-off date, the K-R 20 coefficients were calculated, using the computer center facilities at Virginia Polytechnic Institute and State University for all computational work. The resultant figures are shown in Table 8.

The K-R 20 coefficients showed that the reliability of the instrument was high. Factors contributing to this high reliability were: (1) good item-test correlations for items (ranging between .30 and .80); (2) good variance of items (.10 and above); and (3) items of equal difficulty (Guilford and Fruchter, 1973, 396-423).

An item receiving a mean response level below .10 on all three scales (general sex bias, same sex bias, and opposite sex bias) of the Sex Bias Scale was the criterion used for the elimination of that item from the instrument. Any item below .10 would not contribute to the total variance of the instrument. As a result of this item analysis, eight items were eliminated from the Sex Bias Scale.

Table 8  
K-R 20 Coefficients for Reliability  
of Sex Bias Scale

Type of Scale	Number of Respondents	Reliability
General Sex Bias	90	0.769
Same Sex Bias	90	0.729
Opposite Sex Bias	90	0.740

Thus, the final form of the Sex Bias Scale had a total of 30 items. Eleven of these items measured general sex bias and 19 measured same sex/opposite sex bias.

Final Format of Sex Bias Scale. The instrument contains two parts. The first section asks respondents for biographical data. Each respondent provides the following information: (1) sex, (2) age, (3) total years of teaching experience, (4) occupational area of teaching, (5) highest degree earned, and (6) total years of occupational experience. They are also asked to give the total number of students by sex they are presently teaching.

The second section of the instrument consists of the 30 basic sex bias belief statements. The occupational educators indicate their responses by checking their choices of agreement or disagreement to the statements. They are reminded that there are no right or wrong answers and are asked to select answers which are most appropriate for them (Appendices J and K).

#### Data Collection

The participants in the study included 417 postsecondary occupational educators within USOE Region Three. A random sample of 16 institutions (2 large, 3 medium, and 11 small campuses) was drawn from the 87 postsecondary institutions within USOE Region Three which consists of the states of Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia.

Equal numbers (139) of occupational educators from each of these three campus sizes were randomly drawn to provide balanced representation.

The respondents received individual packets containing a cover letter (Appendix I), the Sex Bias Scale, and a postage paid return envelope. These packets were mailed directly to the postsecondary institutions where they were employed. A numbering system was developed to code names of respondents with their returned instruments.

Two weeks were allowed for response (one week for participants to respond to the Sex Bias Scale and one week for mailing time) before follow-up procedures were initiated. The non-respondents received a follow-up letter (Appendix L), another Sex Bias Scale, and an addressed, stamped envelope to be returned to the researcher. After one week, a telephone call was then placed by the researcher to 20 percent of the postsecondary occupational educators who had not responded to the follow-up letter. The minimum level of return that was accepted in this study was 60 percent (Kerlinger, 1973, 414). This completed the data collection process.

#### DATA ANALYSIS

Descriptive biographical data describing the participants was provided. The basic sex bias beliefs were identified through a review of related literature. To compare these sex

bias beliefs, average group means of sex bias scores (general sex bias, same sex bias, and opposite sex bias) of postsecondary occupational educators were calculated. Occupational educator groupings were made according to: (1) sex, (2) programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented), and (3) postsecondary campuses of varying sizes (small, medium, and large). The average mean sex bias scores were compared on the basis of these groupings of occupational educators. This analysis was used to answer research question 1.

Bivariate correlation coefficients were computed to determine if significant relationships existed among the biographical variables (age, sex, years of teaching experience, years of occupational experience, and highest degree earned) and the sex bias scores which were identified.' These analyses were used to answer research questions 2, 3, 4, 5, and 6.

Statistical tests were conducted to answer the remaining research questions. Multivariate analysis of variance (MANOVA) was used to compare the subgroups of postsecondary occupational educators on each of the identified sex bias scores. In reference to the use of multivariate statistics, Harris stated:

Almost any situation in which multivariate techniques are applied could be analyzed through a series of univariate significance tests (for example, t-tests), one such univariate test for each possible outcome variable. However, since each of the univariate tests is designed to produce a significant result  $\bar{X}$  x 100% of the time (where  $\bar{X}$  is the "significance level" of the test) when the null hypothesis is correct, the probability of



having at least one of the tests produce a significant result when in fact nothing but chance variation is going on, increases rapidly as the number of tests increases. It is thus highly desirable to have a means of explicitly controlling for the experiment-wise error rate. Multivariate statistical techniques provide this control (1975, 6).

Thus, multivariate analysis of variance was used to test the difference between the linear combination of means for the postsecondary occupational educator subgroups (educators of male-oriented, nonsex-oriented, and female-oriented occupational programs) on the identified sex bias scores. This analysis was used to answer research question 7.

MANOVA was also used to test the difference between the linear combination of means for postsecondary occupational educators on the identified sex bias scores in each of the three campus sizes (small, medium, and large). This analysis was used to answer research question 8.

The Kuder-Richardson Formula (K-R 20) was conducted to further validate the reliability of the Sex Bias Scale. A 0.5 reliability was the criterion used for this instrument (Kline, 1975).

#### SUMMARY

Specific methods and procedures used in the study were outlined. The development of basic sex bias belief statements and the sex bias scales and subsequent development of the instrument were explained. Sampling procedures were outlined,

and methods for data collection and analysis were specified. The data generated from the responses and the statistical treatment served as a basis for results and conclusions provided in the following chapters.

## Chapter 4

### RESULTS

#### INTRODUCTION

The central problem of this study was to identify and compare the basic sex bias beliefs of (1) male and female postsecondary occupational educators (2) postsecondary occupational educators teaching in male-oriented, nonsex-oriented, and female-oriented programs; and (3) postsecondary occupational educators teaching in small, medium, and large campuses. A secondary problem was to determine (1) if there was a relationship between the biographical variables (sex, age, educational level [highest degree earned], years of teaching experience and years of occupational experience) and the identified basic sex bias beliefs of postsecondary occupational educators; and (2) if there were differences in the identified basic sex bias beliefs of postsecondary occupational educators who teach in programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented) and who teach in campuses of varying sizes (small, medium, and large). Descriptions and comparisons presented in the study were based upon responses provided by postsecondary occupational educators randomly drawn from postsecondary institutions in the

states of Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia.

The data analysis for each of the research questions is treated in this chapter. Therefore, this chapter is divided into three sections. The first section includes a description of the respondents. Section two reaffirms the reliability of the Sex Bias Scale while the third section reports findings relative to the eight research questions.

#### RESPONDENTS

Four hundred and seventeen randomly selected postsecondary occupational educators from 16 campuses in USOE Region Three constituted the sample for this study. A total of 271 instruments were completed and/or returned resulting in a return rate of 64.99 percent (Table 9). Seven of these were not usable for the following reasons:

- 1 respondent had died
- 1 respondent had moved out of the state
- 1 respondent did not want to participate
- 4 respondents were no longer teaching

Table 9 illustrates the representation of responses by sex and by campus size. The figures indicate that male and female educators were well represented as well as the small, medium, and large campuses.

Table 9  
Male and Female Responses

Respondents	<u>Instruments</u>		<u>Usable Responses</u>	
	No. Mailed	No. Returned	No.	Percent
<b>Sex</b>				
Males	255	146	139	52.65%
Females	<u>162</u>	<u>125</u>	<u>125</u>	<u>47.35%</u>
Total	<u>417</u>	<u>271</u>	<u>264</u>	<u>100.00%</u>
<b>Campus Size</b>				
Small	139	90	87	32.95%
Medium	139	87	85	32.20%
Large	<u>139</u>	<u>94</u>	<u>92</u>	<u>34.85%</u>
Total	<u>417</u>	<u>271</u>	<u>264</u>	<u>100.00%</u>

Of the 417 persons selected for use in this study, there were a variety of reasons for 146 noncompletions of the mail instrument. In a telephone follow-up conducted after the mail follow-up, thirty persons who refused to complete the instrument responded as follows:

- 3 held negative feelings toward the numbering system
- 7 were no longer teaching because of promotion to administrative positions
- 13 did not want to participate in the study
- 7 did not respond to the instrument after agreeing to do so.

Eighteen more instruments were returned after the cut-off date, thus bringing the total to 282 or 68 percent rate of return.

\*A profile of the 264 postsecondary occupational educators who participated in this study was developed utilizing data collected on Part I of the instrument. Table 10 presents a frequency distribution of ages of respondents. The majority of male educators were in the 32-38 age category (29.5 percent) and the over 51 age category (25.9 percent). The majority of female educators were in the 32-38 age category (24.8 percent) and the 39-45 age category (26.4 percent).

Table 11 summarizes the years of teaching experience reported by respondents. The majority of male educators had five or less years of teaching experience (31.0 percent) or six to ten years of experience (29.5 percent). Among the female educators, the majority had six to ten years of teaching experience

Table 10  
Age Representation of Respondents

<u>Age Groups</u> (Years)	<u>Total Group</u>		<u>Male Educators</u>		<u>Female Educators</u>	
	Number	Percent	Number	Percent	Number	Percent
31 and under	41	15.5	20	14.4	21	16.8
32-38	72	27.3	41	29.5	31	24.8
39-45	52	19.7	19	13.7	33	26.4
46-51	39	14.8	23	16.6	16	12.8
over 51	<u>60</u>	<u>22.7</u>	<u>36</u>	<u>25.9</u>	<u>24</u>	<u>19.2</u>
Total	264	100.0	139	100.0	125	100.0

Table 11  
Total Years Teaching Experience of Respondents

Years	<u>Total Group</u>		<u>Male Educators</u>		<u>Female Educators</u>	
	Number	Percent	Number	Percent	Number	Percent
5 and under	70	26.5	43	31.0	27	21.6
6-10	82	31.1	41	29.5	41	32.8
11-15	63	23.9	26	18.7	37	29.6
16-19	18	6.8	12	8.6	6	4.8
over 19	<u>31</u>	<u>11.7</u>	<u>17</u>	<u>12.2</u>	<u>14</u>	<u>11.2</u>
Total	264	100.0	139	100.0	125	100.0



(32.8 percent) or 11-15 years of experience (29.6 percent).

The total years of occupational experience indicated by respondents is summarized in Table 12. Twenty seven percent of the male educators reported five years or less occupational experience and 30.9 percent reported over 19 years. Of the female educators, 26.4 percent indicated five years or less occupational experience and 24.8 percent indicated over 19 years.

Table 13 summarizes the representation of male and female educators in programs of varying sex orientation. Male educators dominated the male-oriented programs by 95.4 percent while 83.5 percent of the female educators dominated the female-oriented programs. While the nonsex-oriented programs contained equal representation of students, they were dominated with male educators by 70.0 percent.

The educational levels of respondents are summarized in Table 14. Among the male educators, 10.8 percent earned less than Bachelors, 37.4 percent earned Master's plus credits, and 7.2 percent held doctorates. Of the female educators, five percent earned less than Bachelors, 40.8 percent earned Master's plus credits and six percent held doctorates.

Table 15 summarizes the representation of respondents in small, medium, and large postsecondary campuses. All three campus sizes are well represented. There was a greater number of female than male respondents from small campuses, while the majority of respondents from large and medium campuses were male.

Table 12

## Total Years Occupational Experience of Respondents

Years	<u>Total Group</u>		<u>Male Educators</u>		<u>Female Educators</u>	
	Number	Percent	Number	Percent	Number	Percent
5 and under	70	26.5	37	26.7	33	26.4
6-10	57	21.6	29	20.9	28	22.4
11-15	40	15.2	18	12.9	22	17.6
16-19	23	8.7	12	8.6	11	8.8
over 19	<u>74</u>	<u>28.0</u>	<u>43</u>	<u>30.9</u>	<u>31</u>	<u>24.8</u>
Total	264	100.0	139	100.0	125	100.0

Table 13  
Representation of Respondents in Programs of Varying Sex Orientation

Educators	Male-Oriented Programs		Nonsex-Oriented Programs		Female Oriented Programs	
	Number	Percent	Number	Percent	Number	Percent
Males	105	85.4	14	70.0	20	16.5
Females	<u>18</u>	<u>14.6</u>	<u>6</u>	<u>30.0</u>	<u>101</u>	<u>83.5</u>
Total	123	100.0	20	100.0	121	100.0

Table 14  
 Highest Degree Earned by Respondents  
 (Educational Level)

Degree	Total Group		Male Educators		Female Educators	
	Number	Percent	Number	Percent	Number	Percent
Less than Bachelor's	21	8.0	15	10.8	6	4.8
Bachelor's	15	5.7	7	5.1	8	6.4
Bachelor's plus credits	50	18.9	28	20.1	22	17.6
Master's	51	19.3	21	15.1	30	24.0
Master's plus credits	103	39.0	52	37.4	51	40.8
Specialist or CAGS	7	2.7	6	4.3	1	0.3
Doctorate	<u>17</u>	<u>6.4</u>	<u>10</u>	<u>7.2</u>	<u>7</u>	<u>5.6</u>
Total	264	100.0	139	100.0	125	100.0

Table 15

## Representation of Respondents in Campuses of Varying Size

Respondents	Campus Size					
	Small		Medium		Large	
	Number	Percent	Number	Percent	Number	Percent
Males	36	41.4	49	57.6	54	58.7
Females	<u>51</u>	<u>58.6</u>	<u>36</u>	<u>42.4</u>	<u>38</u>	<u>41.3</u>
Total	87	100.0	85	100.0	92	100.0

## RELIABILITY COEFFICIENTS OF SEX BIAS SCALE

Based upon data from the 264 instruments received at cut-off date, the K-R 20 coefficients were calculated. The resultant figures are shown in Table 16. The K-R 20 coefficients show that the reliability of the instrument is reasonably high (above 0.5).

## FINDINGS FOR RESEARCH QUESTIONS

Sex bias scores (same sex bias, opposite sex bias, and general sex bias) were used to answer the research questions. Eleven items were assigned to the general sex bias scale and 19 items were assigned to the same sex bias and opposite sex bias scales. The value of 0 was given to unbiased choices and the value of 1 was given to biased choices. Sex bias scores were determined by summing across the items assigned to a sex bias scale and computing a mean score for each educator group.

Research Question 1: What are the basic sex bias beliefs of postsecondary occupational educators?

This first research question in this study dealt with the identification and comparison of sex bias beliefs of postsecondary occupational educators. The basic sex bias beliefs were identified through a review of related literature. Research substantiated not only the overall sex bias of educators but also the directional nature of these biases (same sex bias and opposite sex bias)

Table 16

K-R 20 Coefficients for Reliability of Sex Bias Scale

Type of Scale	Number of Respondents	Reliability
General Sex Bias	264	.771
Same Sex Bias	264	.762
Opposite Sex Bias	264	.731

(Chapter 2). Thus, there were identified 11 general sex bias beliefs and 19 same sex/opposite sex bias beliefs (Table 17). To compare sex bias beliefs, sex bias mean scores and standard deviations were generated for male and female educators on same sex bias, opposite sex bias, and general sex bias (Tables 18, 19, and 20). In comparing sex bias mean scores of male and female educators (Table 18), the males tended to show more sex bias in all three sex bias areas than the females.

Sex bias scores of male and female educators were also compared according to sex orientation of occupational programs. Table 19 reports the means and standard deviations of sex bias scores of educators in the three sex-oriented programs. The means in Table 19 indicated the following: (1) males in male-oriented programs showed more same sex bias and general sex bias than females, while the females showed more opposite sex bias; (2) males in nonsex-oriented programs showed more same sex bias and opposite sex bias than females, while the females showed more general sex bias; (3) males in female-oriented programs showed more same sex bias, opposite sex bias, and general sex bias than females; (4) males in male-oriented and nonsex-oriented programs showed more same sex bias than males in female-oriented programs, while females in male-oriented programs showed more same sex bias than females in nonsex-oriented and female-oriented programs; (5) males in female-oriented programs showed more opposite sex bias than males in male-oriented and nonsex-



Table 17

## Basic Sex Bias Beliefs of Postsecondary Occupational Educators

Same Sex Bias/Opposite Sex Bias Belief Statement	General Sex Bias Belief Statement
In most jobs, a woman can do everything a man can do.	I would consider doing a job that isn't traditional for my sex.
Female students are on the average more mature than male students.	Female role models should be provided in such occupational education areas as trade, industry, and technology.
Female students are generally more conscientious and more interested in getting good grades than male students.	Male role models should be provided in such occupational education areas as nursing, home economics, and secretarial science.
Male students are better on the average in basic academic skills than female students.	All classes must be open to both sexes.
Female students generally have less psychomotor abilities (motor skills) than male students.	Problems associated with sex roles and sex stereotyping should be discussed in class.
Female students generally take constructive criticism better than male students.	Classroom materials should present men in a variety of roles, including child-care, cooking, secretaries, elementary school teachers, telephone operators and clerks.
Female students are generally more attentive in class than male students.	Male students should be encouraged to enroll in such courses as home economics, nursing and secretarial science.
Female students generally have a greater desire to learn than male students.	
Male students are generally more capable of being high achievers in science and mathematics than female students.	
Female students are generally more attentive to detail in listening to and carrying out directions than male students.	

Table 17 (continued)

Same Sex Bias/Opposite Sex Bias Belief Statement	General Sex Bias Belief Statement
Female students generally have greater verbal ability than male students.	Female students should be encouraged to enroll in such courses as automotive, electronics and drafting technologies.
Male students generally have greater visual-spatial ability (forming mental images of space) than female students.	Textbooks and other instructional materials should be examined prior to purchase and use to insure that they are not biased toward either the male or female sex.
Female students are generally more capable than male students at rote learning (memorization) and simple repetitive tasks.	Compassion, consideration and tenderness should be emphasized more for females than males.
Female students are generally less capable than male students at tasks that require high level cognitive thinking.	Assertiveness, risk-taking, and strength should be emphasized more for males than females.
Female students are generally less "analytic" than male students.	
"Safety hazards" generally increase in laboratory sessions or in shop areas when classes are coed.	
Female students generally present fewer discipline problems than male students.	
Males and females should be motivated equally toward leadership positions and job goals that lead to the highest levels of responsibility.	
It is generally more important for male students to receive scholarships than it is for female students.	

Table 18

Means and Standard Deviations of Sex Bias Scores  
for Male and Female Respondents

Respondent	Same Sex Bias	Opposite Sex Bias	General Sex Bias
Males			
Mean	2.82	2.17	2.21
Standard Deviation	2.791	2.457	2.334
Females			
Mean	1.10	1.95	1.01
Standard Deviation	1.704	2.339	1.656

Table 19

Means and Standard Deviations of Sex Bias Scores for Educators in Sex-Oriented Programs

Program	Same Sex Bias			Opposite Sex Bias			General Sex Bias		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
<b>Male-Oriented</b>									
Mean	2.91	1.72	2.74	2.10	2.67	2.18	2.17	1.61	2.09
Standard Deviation	2.893	1.841	2.790	2.195	3.326	2.385	2.356	2.355	2.354
<b>Nonsex-Oriented</b>									
Mean	3.21	.67	2.45	1.93	1.33	1.75	1.57	2.00	1.70
Standard Deviation	3.017	1.211	2.837	3.050	1.366	2.633	2.102	2.280	2.105
<b>Female-Oriented</b>									
Mean	2.05	1.01	1.18	2.70	1.86	2.00	2.35	.84	1.17
Standard Deviation	2.039	1.700	1.794	3.326	2.177	2.408	2.390	1.440	1.787

oriented programs, while females in male-oriented programs showed more opposite sex bias than females in nonsex-oriented and female-oriented programs; and (6) males in female-oriented programs showed more general sex bias than males in male-oriented and nonsex-oriented programs, while females in male-oriented and nonsex-oriented programs showed more general sex bias than females in female-oriented programs.

Table 20 reports the means and standard deviations of sex bias scores of educators from small, medium, and large campuses. In all three campus sizes, the sex bias mean scores of male educators tended to be higher on all three sex bias scales than the female sex bias mean scores.

Research Question 2: Is there a relationship between age and basic sex bias beliefs of postsecondary occupational educators?

Pearson product moment correlation coefficients were used to answer this research question which was concerned with the relationship of respondents' age with responses given on the three sex bias scales. There were no significant correlations at the .05 level (Table 21).

Research Question 3: Is there a relationship between male and female postsecondary occupational educators and their basic sex bias beliefs?

Pearson product moment correlation coefficients were used to answer this research question. As shown in Table 21, the relationship of sex to same sex bias and general sex bias were significant ( $p < .05$ ).

Table 20

Means and Standard Deviations of Sex Bias Scores for Educators in Campuses of Varying Size

Size	Sex Bias Scores								
	Same Sex Bias			Opposite Sex Bias			General Sex Bias		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Small									
Mean	3.53	.36	1.97	1.83	2.26	2.08	1.78	1.18	1.43
Standard Deviation	2.833	1.132	2.399	2.104	2.505	2.344	1.899	1.694	1.796
Medium									
Mean	2.43	.92	1.79	2.41	1.97	2.22	2.53	1.03	1.39
Standard Deviation	2.723	1.381	2.366	2.524	2.384	2.461	2.319	1.797	2.231
Large									
Mean	2.70	1.58	2.24	2.17	1.53	1.90	2.20	.76	1.61
Standard Deviation	2.813	2.434	2.707	2.648	2.076	2.436	2.609	1.526	2.320

Table 21

Correlation Coefficients and Probability For Sex, Age, Years of Teaching Experience, Years of Occupational Experience and Highest Degree Completed with Sex Bias Scores

Sex Bias Score	Sex	Age	Years of Teaching Experience	Years of Occupational Experience	Highest Degree Completed
Same Sex Bias	-.34529* (.0001)	.05873 (.3419)	-.04353 (.4813)	.02231 (.7183)	-.02468 (.6897)
Opposite Sex Bias	-.04433 (.4732)	.10343 (.0935)	.15740* (.0104)	-.04239 (.4929)	.00573 (.9262)
General Sex Bias	-.28179* (.0001)	.10939 (.0760)	.12717* (.0389)	.08108 (.1891)	-.06003 (.3312)

\*Significant ( $P < .05$ )

A possible explanation for the correlations being negative may be found through a comparison of male and female sex bias mean scores. Male educators indicated more same sex bias in male-oriented and nonsex-oriented programs than in programs that are female-oriented, while female educators indicated more same sex bias in male-oriented programs than in programs that are nonsex-oriented and female-oriented. Male educators showed more general sex bias in female-oriented programs than in programs that are male-oriented and nonsex-oriented, while female educators showed more general sex bias in male-oriented and nonsex-oriented programs than in programs that are female-oriented. The relationship of sex to opposite sex bias was not significant at the .05 level.

Research Question 4: Is there a relationship between years of teaching experience and basic sex bias beliefs of postsecondary occupational educators?

Pearson product moment correlation coefficients were used to answer this research question. The relationship of years of teaching to the same sex bias score was non-significant at the .05 level (Table 21). There were significant correlations with the other two sex bias scores; the correlations were identified as .15740 on the opposite sex bias score and .12717 on the general sex bias score and both were significant at the .05 level.

Research Question 5: Is there a relationship between years of occupational experience and basic sex bias beliefs of postsecondary occupational educators?

Calculations of Pearson product moment correlation coefficients



provided the answer to this research question. There were no significant correlations at the .05 level with any of the three sex bias scores (Table 21).

Research Question 6: Is there a relationship between educational level (highest degree earned) and basic sex bias beliefs of postsecondary occupational educators?

This research question was answered by computing Pearson product moment correlation coefficients. As indicated in Table 21, the relationship of educational level with each of the three sex bias scores was non-significant ( $p > .05$ ).

Research Question 7: Is there a difference in basic sex bias beliefs of postsecondary occupational educators who teach in programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented)?

Multivariate analysis of variance utilizing the Statistical Analysis System (SAS) subprogram was performed on the linear combination of mean scores on each of the three sex bias scales for male and female postsecondary educators. Table 22 summarizes the results of the MANOVA for research question 7. The MANOVA revealed that there were no significant differences among the means on the three sex bias scales when comparing educators in each of the three sex-oriented programs ( $p > .05$ ). It was noted that a significant difference occurred when the educators were compared on the basis of sex ( $p < .05$ ). No significant interaction of program orientation and sex was revealed.

Table 22

Multivariate Analysis of Variance for Mean Scores of Same Sex Bias,  
 Opposite Sex Bias, and General Sex Bias Among Educators in Sex-  
 Oriented Occupational Programs

Source	F-Value	Degrees of Freedom	Probability	Wilks' Criterion
Sex	4.53	3 & 256	.0042*	.949548
Orientation	0.82	6 & 512	.5523	.980983
Orientation and Sex	1.79	6 & 512	.0985	.959264

\*Significant at .05 Level

Research Question 8: Is there a difference in basic sex bias beliefs expressed by post-secondary occupational educators teaching in campuses of varying sizes (small, medium, and large)?

MANOVA was also performed on the linear combination of mean scores on each of the three sex bias scales for educators in the three campus sizes. The F ratios produced were also tested at the .05 level of confidence. Table 23 summarizes the results of the MANOVA for research question 8. The MANOVA revealed that there were no significant differences among the means on the three sex bias scales when comparing educators in each of the three campus sizes ( $p > .05$ ). Once again, it was noted that a significant difference occurred when the educators were compared on the basis of sex ( $p < .05$ ). No significant interaction of campus size and sex was revealed.

#### SUMMARY

The results of the data analyses that were conducted to answer the eight research questions are presented in this chapter. Pearson product moment correlation coefficients were used to answer the questions which were concerned with the relationship of certain biographical variables with responses given by educators on the three sex bias scales. Significant correlations ( $p < .05$ ) were found with (1) respondents' sex and their same sex bias and general sex bias scores, and (2) respondents' years of teaching

Table 23

Multivariate Analysis of Variance for Mean Scores of Same Sex Bias,  
Opposite Sex Bias, and General Sex Bias Among Educators in Different  
Campus Sizes

Source	F-Value	Degrees of Freedom	Probability	Wilks' Criterion
Sex	18.14	3 & 256	.0001*	.824661
Size	0.90	6 & 512	.4974	.979323
Size & Sex	1.96	6 & 512	.0695	.955573

\*Significant at the .05 level

and their general sex bias and opposite sex bias scores. Relationships of age, educational level and years of occupational experience to each of the three sex bias scores were non-significant ( $p > .05$ ). Data were also analyzed by multivariate analysis of variance to determine if differences existed between sex bias scores and each of the three sex-oriented programs. The MANOVA indicated no difference existed among the groups. MANOVA was also performed to determine if differences existed between sex bias scores and each of the three campus sizes. This analysis resulted with a non-significant F-value ( $p > .05$ ). It was noted in both instances of MANOVA that significant differences occurred when the educators were compared on the basis of sex ( $p < .05$ ).

## Chapter 5

### SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is initiated with a summation of the study, including the background of the problem, statement of the problem, research procedures, and analysis of the data. Second, conclusions for the study are presented based upon the findings. Finally, recommendations for utilizing the study and for developing further research are discussed.

### SUMMARY

The effects of sex stereotyping and sex bias are many. They limit the awareness, potential, options, and activities of males and females. Such limitations restrict individual decisions and impede individual advancement in a variety of life-choice determinations, particularly work-related life choices such as career options, training, hiring practices, earnings, and occupational expectations.

Damaging effects of sex bias on males and females have been well documented. Frazier and Sadker (1973) list documented examples of these damaging effects on females according to the categories (1) Loss of academic potential, (2) Loss of self esteem, and (3) Loss of occupational potential. For males, damaging

effects of sex bias are categorized according to (1) Loss of personality and work options, (2) Loss of academic potential, and (3) Loss of nurturant and social-emotional qualities.

Related literature giving recognition of the effects and past repeated occurrences of sex stereotypic, sex biased and sex discriminatory practices in work-related education, together with new legal requirements to address these issues, established the need to conduct this study to determine selected postsecondary occupational educators' basic beliefs regarding sex bias. Research demonstrates that teacher expectations operate as a self-fulfilling prophecy to each student: the students learn what teachers expect them to learn. Since educators play a major role in the educational experiences of students, and because studies show that teacher expectations influence student motivation and achievement, the beliefs held by educators in regard to appropriate male and female roles and abilities need to be investigated.

#### Statement of the Problem

The central problem of this study was to identify and compare the basic sex bias beliefs of (1) male and female postsecondary occupational educators; (2) postsecondary occupational educators teaching in male-oriented, nonsex-oriented, and female-oriented programs; and (3) postsecondary occupational educators teaching in small, medium, and large campuses. A secondary problem was to determine (1) if there was a relationship between

the biographical variables (sex, age, educational level [highest degree earned], years of teaching experience, and years of occupational experience) and the identified basic sex bias beliefs of postsecondary occupational educators; and (2) if there were differences in the identified basic sex bias beliefs of postsecondary occupational educators who teach in programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented) and who teach in campuses of varying sizes (small, medium, and large).

Eight questions further delineated the problem and provided more specific direction for this study. Research questions central to the study are presented within the findings section in this chapter.

### Research Procedures

Participants in this study consisted of 417 postsecondary occupational educators within USOE Region Three. A random sample of 16 institutions (2 large, 3 medium, and 11 small campuses) was drawn from the 87 postsecondary institutions within USOE Region Three which consists of the states of Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia. Equal numbers of occupational educators from each of these three campus sizes were randomly drawn. A formula suggested by the Research Division of the National Education Association (1960) was used to establish the sample size.



The first part of this study involved the identification of basic sex bias beliefs held by postsecondary occupational educators and the selection of an instrument to measure their degree of sex bias. A scale was considered an appropriate method to collect the data for purposes of this study. After a review of the literature, it was determined that an instrument was not available which would measure sex biases of postsecondary occupational educators. Thus, it was necessary to develop an instrument for purposes of the study. The literature review provided information which was useful in the identification of basic sex bias beliefs. A systematic procedure was used to record basic sex bias belief statements, analyze and group them, and finally list them in a scale format (same sex bias, opposite sex bias, and general sex bias). A total of 84 statements were recorded as basic sex bias beliefs. Through refinement and bringing together related statements, the number was narrowed down to 39.

These original 39 statements were evaluated by a panel of experts (Group A and Group B). Group A consisted of seven postsecondary occupational educators, each teaching in a different occupational area. Each individual was asked to analyze the statements using five criteria for attitude statements identified by Edwards (1957). Group B included three Virginia Polytechnic Institute and State University professors; two have expertise in the development of instruments and appropriate scoring procedures

and one is knowledgeable in the area of sex stereotyping, sex discrimination, and sex bias (Appendix E). On the basis of eight questions developed by the researcher, they were asked to appraise the content validity of the instrument as well as the appropriateness of the scoring procedures. All necessary revisions suggested by Group A and Group B panel members were made, including the elimination of one item which left 38 items on the instrument.

The items were incorporated into an instrument which was utilized by the study sample and which consisted of two parts. In Part I, biographical information was requested from each respondent. Part II consisted of basic sex bias belief statements assigned to three sex bias scales (same sex bias, opposite sex bias, and general sex bias).

To assure the successful administration of the instrument, a pilot test was conducted by submitting the revised Sex Bias Scale to 150 postsecondary occupational educators. As a result of the pilot test, it was determined that the directions were clear. The high internal consistency reliability of the instrument was determined by the Kuder-Richardson Formula (K-R 20) method. As a result of item analysis, eight items were eliminated from the instrument. Thus, the final form of the Sex Bias Scale has a total of 30 items. Eleven of these items measure general sex bias and 19 measure same sex bias/opposite sex bias.

General sex bias is defined as the range of behaviors of males and females based upon general sex stereotypic beliefs normally accepted and perpetuated in the educational system. The majority of general sex bias beliefs dealt with strategies to eliminate sex stereotyping in the classroom such as providing appropriate role models for students, opening all classes to both sexes, and providing classroom materials which present men and women in a variety of roles beyond the traditional. For further examples, see Table 17 (Chapter 4). Same sex bias is defined as the range of behaviors of males and females based upon sex stereotypic beliefs held against one's own sex; these beliefs tend to hold the opposite sex as superior. Opposite sex bias is defined as the range of behaviors of males and females based upon sex stereotypic beliefs held against the opposite sex; these beliefs tend to hold one's own sex as superior. Same sex/opposite sex bias beliefs were concerned primarily with male and female academic abilities, psychomotor abilities, conscientiousness toward grades, and maturity level. Table 17 presents these statements in their entirety.

The instrument, a cover letter, and a return-addressed, stamped envelope were mailed to the potential respondents. A follow-up letter and another instrument were sent after two weeks to the non-respondents. The return at the conclusion of the data collection phase was 63.31 percent.

### Analysis of the Data

The analysis of the data consisted of five major steps. First, descriptive biographical data describing the respondents were provided.

Second, the basic sex bias beliefs of postsecondary occupational educators were identified through a review of related literature. Mean scores for each of the three sex bias scales of the instrument were then computed, and comparisons were made among (1) male and female educators; (2) educators in male-oriented, nonsex-oriented, and female-oriented programs; and (3) educators in small, medium, and large campuses.

Third, the Kuder-Richardson Formula (K-R 20) was conducted to further validate the reliability of the Sex Bias Scale. A 0.5 reliability was the criterion used for this instrument.

Fourth, bivariate correlation coefficients were computed. These Pearson product moment correlation coefficients were used to determine if significant relationships existed among the biographical variables (age, sex, years of teaching experience, years of occupational experience, and educational level) and the sex bias scores which were identified.

Fifth, Multivariate analysis of variance (MANOVA) was used to test the difference between the linear combination of means for the postsecondary occupational educator subgroups (educators of male-oriented, nonsex-oriented, and female-oriented

occupational programs) on the identified sex bias scores. MANOVA was also used to test the difference between the linear combination of means for postsecondary occupational educators on the identified sex bias scores in each of the three campus sizes (small, medium, and large).

## Results

Results of the study are presented in three sections: Description of Respondent Characteristics, Reliability Coefficients of Sex Bias Scale, and Findings for Research Questions, including the identification and comparison of basic sex bias beliefs and the relationship of biographical variables to basic sex bias beliefs.

Description of Respondent Characteristics. A profile of the respondents indicated that:

1. The majority of male educators were in the 32-38 age category (29.5 percent) and the over 51 age category (25.9 percent), while the majority of female educators were in the 32-38 age category (24.8 percent) and the 39-45 age category (26.4 percent).
2. The majority of male educators had five or less years of teaching experience (31.0 percent) or six to ten years of experience (29.5 percent), while the majority of female educators had six to ten years of teaching experience (32.8 percent) or 11-15 years of experience (29.6 percent).

3. Twenty seven percent of the male educators reported five years or less occupational experience and 30.9 percent reported over 19 years, while 26.4 percent of the female educators indicated five years or less occupational experience and 24.8 percent indicated over 19 years.

4. Male educators dominated the male-oriented programs by 95.4 percent and the nonsex-oriented programs by 70.0 percent, while 83.5 percent of the female educators dominated the female-oriented programs.

5. Among the male educators, 10.8 percent earned less than Bachelors, 37.4 percent earned Master's plus credits, and 7.2 percent held doctorates. Of the female educators, five percent earned less than Bachelors, 40.8 percent earned Master's plus credits, and six percent held doctorates.

6. Of the 264 respondents, 52.65 percent were male and 47.35 percent were female.

7. In regard to campus size, 32.95 percent of the 264 respondents were from small campuses, 32.20 from medium campuses, and 34.85 percent from large campuses.

Reliability Coefficients of Sex Bias Scale. Based upon data from the 264 instruments received at cut-off date, the K-R 20 coefficients were calculated. The K-R 20 coefficients showed that the reliability of the instrument is reasonably high (.771 for General Sex Bias, .762 for Same Sex Bias, and .731 for Opposite

Sex Bias).

Findings for Research Questions. The eight research questions central to the study are presented below, accompanied with findings.

Research Question 1: What are the basic sex bias beliefs of postsecondary occupational educators?

To answer this question, mean scores for each of the three sex bias scales of the instrument were computed and comparisons were made among (1) male and female educators; (2) educators in male-oriented, nonsex-oriented, and female-oriented programs; and (3) educators in small, medium, and large campuses. Both male and female postsecondary occupational educators within USOE Region Three showed same sex bias, opposite sex bias, and general sex bias. However, male educators tended to show more sex bias in all three areas of sex bias than the female educators. When the sex bias scores of male and female educators were compared according to the sex orientation of occupational programs, the means indicated the following: (1) males in male-oriented programs showed more same sex bias and general sex bias than females, while the females showed more opposite sex bias; (2) males in nonsex-oriented programs showed more same sex bias and opposite sex bias than females, while the females showed more general sex bias; (3) males in female-oriented programs showed more same sex bias, opposite sex bias, and general sex bias than females; (4) males in male-oriented and nonsex-

oriented programs showed more same sex bias than males in female-oriented programs, while females in male-oriented programs showed more same sex bias than females in nonsex-oriented and female-oriented programs; (5) males in female-oriented programs showed more opposite sex bias than males in male-oriented and nonsex-oriented programs, while females in male-oriented programs showed more opposite sex bias than females in nonsex-oriented and female-oriented programs; and (6) males in female-oriented programs showed more general sex bias than males in male-oriented and nonsex-oriented programs, while females in male-oriented and nonsex-oriented programs showed more general sex bias than females in female-oriented programs. Sex bias mean scores of educators from small, medium, and large campuses were also computed. In all three campus sizes, the sex bias mean scores of male educators tended to be higher on all three sex bias scales than the female sex bias mean scores.

Research Question 2: Is there a relationship between age and basic sex bias beliefs of postsecondary occupational educators?

The Pearson product moment correlation coefficients proved to be non-significant at the .05 level with any of the three sex bias scores. Thus, it appears that there is no relationship between age and same sex bias, opposite sex bias, and general sex bias beliefs of postsecondary occupational educators in USOE Region Three.



Research Question 3: Is there a relationship between male and female postsecondary occupational educators and their basic sex bias beliefs?

Pearson product moment correlation coefficients were computed to determine if a relationship existed between the respondents' sex and their responses on the three sex bias scales. The correlations proved to be significant at the .05 level for the relationship of sex with same sex bias and sex with general sex bias, while the relationship of sex with opposite sex bias was not significant. Thus, the sex of postsecondary occupational educators in USOE Region Three affect their beliefs concerning their own sex and their general sex bias beliefs.

Research Question 4: Is there a relationship between years of teaching experience and basic sex bias beliefs of postsecondary occupational educators?

Pearson product moment correlation coefficients were used to determine if a relationship existed between years of teaching experience with opposite sex bias and with general sex bias. The relationship between years of teaching experience and opposite sex bias proved to be significant at the .05 level, while the relationship of years of teaching experience with same sex bias was non-significant. Thus, the more years of teaching experience, the greater the bias among postsecondary occupational educators against the opposite sex. Also, general sex bias tended to be greater with increasing years of experience in teaching.

Research Question 5: Is there a relationship between years of occupational experience and basic sex bias beliefs of postsecondary occupational educators?

Pearson product moment correlation coefficients were computed to determine if a relationship existed between the respondents' years of occupational experience with responses on the three sex bias scales. The correlations proved to be non-significant at the .05 level with all three sex bias scales. Thus, same sex bias, opposite sex bias, and general sex bias beliefs among postsecondary occupational educators in USOE Region Three are not influenced by their years of occupational experience.

Research Question 6: Is there a relationship between educational level (highest degree earned) and basic sex bias beliefs of postsecondary occupational educators?

Pearson product moment correlation coefficients used to determine if a relationship existed between the respondents' educational level with each of the three sex bias scores proved to be non-significant at the .05 level. Thus, the attainment of a Bachelor's, Master's, or Doctor's degree has no effect upon USOE Region Three postsecondary occupational educators' basic sex bias beliefs.

Research Question 7: Is there a difference in basic sex bias beliefs of postsecondary occupational educators who teach in programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented)?

To answer this research question, Multivariate Analysis of Variance

was used to determine whether there were differences in the three sex bias scores according to the sex orientation of the occupational program. The F ratio for the three sex bias scales was greater than .05, thereby demonstrating that no difference existed among the groups with respect to the sex orientation of the program. It is also worth noting that the multivariate F ratio for sex was significant ( $p < .05$ ), but the F ratio for the interaction of orientation and sex was non-significant ( $p > .05$ ). Thus, postsecondary occupational educators in USOE Region Three expressed similar sex bias beliefs regardless of the sex orientation of their programs. However, on the basis of sex, postsecondary occupational educators did express different sex bias beliefs. The mean scores in Table 19 (Chapter 4) indicate some of these differences which include: (1) males showed more bias against their own sex (same sex bias) in male-oriented and nonsex-oriented programs than in programs that are female-oriented, while females indicated more same sex bias in male-oriented programs than in programs that are nonsex-oriented and female-oriented; (2) males in female-oriented programs showed more bias against the opposite sex (opposite sex bias) than males in male-oriented and nonsex-oriented programs, while females in male-oriented programs showed more opposite sex bias than females in nonsex-oriented and female-oriented programs; and (3) males in female-oriented programs showed more general sex bias than males in male-oriented and nonsex-oriented programs, while females in male-oriented and nonsex-

oriented programs showed more general sex bias than females in female-oriented programs. The opposite sex bias mean scores seem to indicate that the more biased the male and female occupational educators are against the opposite sex, the greater their tendency to show general sex bias.

Research Question 8: Is there a difference in basic sex bias beliefs expressed by post-secondary occupational educators teaching in campuses of varying sizes (small, medium, and large)?

MANOVA was also performed on the linear combination of mean scores for the three sex bias scales for educators in the three campus sizes. As a result of this analysis, it was found that the F ratio was non-significant ( $p > .05$ ), thereby demonstrating that no difference existed among the groups with respect to campus size. After taking note, the F ratio for sex was significant ( $p < .05$ ), while the F ratio for the interaction of size of campus and sex was non-significant ( $p > .05$ ). Thus, it appears that similar sex bias beliefs are expressed by postsecondary occupational educators in USOE Region Three regardless of the size of their campuses. However, differences occurred between the sex bias mean scores when respondents in varying campus sizes were compared on the basis of sex. Sex bias mean scores illustrate that the male educators in small, medium, and large campuses tended to show more sex bias than the female educators.

## CONCLUSIONS

Based upon the findings reported in this study, several conclusions may be drawn. These are presented in the paragraphs which follow.

Sex bias was expressed by both male and female postsecondary occupational educators. Thus, this study supports related literature which contends that the educational system is a perpetuator of sex bias (Saxenmeyer, 1973; Levy, 1972; etc.).

Both male and female postsecondary occupational educators indicated biases against the opposite sex as well as against their own sex. Based upon the finding that 19 same sex/ opposite sex bias beliefs were identified among the postsecondary occupational educators of the study, it is concluded that there is a tendency among postsecondary occupational educators to cling to their sex stereotypic notions of male and female students' academic abilities. These findings support other studies such as those of Levy (1972), Saxenmeyer (1973), and Kagan and Moss (1962). Findings by Levy support the contention that teachers' interactions with male and female students continue to be biased. Saxenmeyer found that educators tend to perpetuate the value systems that they have been taught and have used to organize their lives. Kagan and Moss indicate that the socialization process may contribute to the relationship of sex with same sex bias. They further state that individuals have a cognitive picture of the person they would like to be and the goal states they would like to command and that

human behavior is affected by the desire to be an ideal male or ideal female as defined by each individual. New Pioneers Project (Smith, 1977) and Howe (1971) stated in their findings that sex bias extends in two directions - bias against the same sex and bias against the opposite sex. This study substantiates their findings because the Pearson product moment correlations (significant at the .05 level) and the sex bias mean scores indicate that same sex bias and opposite sex bias exist among postsecondary occupational educators.

General sex bias is expressed by male and female postsecondary occupational educators. Since 11 general sex bias beliefs were identified, it can be concluded that general sex bias may contribute to the reluctance of postsecondary occupational educators to accept coeducational classes in occupational programs and to support strategies to eliminate sex stereotyping in the classroom. This study supports the investigations by Bard (1972) and Lewis and Kaltreider (1976). Findings by Bard showed that general sex bias among postsecondary occupational educators may be due to their reluctance of recognizing sex segregation in courses as outmoded and illegal. Lewis and Kaltreider contribute general sex bias to be due to educators' reluctance in accepting coeducational classes.

The more biased the male and female postsecondary occupational educators are against the opposite sex, the greater the tendency to show general sex bias. Thus, it can be concluded

that postsecondary occupational educators' acceptance of strategies to eliminate sex stereotyping in the classroom appears to be affected by their sex biased beliefs concerning male and female students' academic abilities. This study substantiates the research conducted by Rosenthal and Jacobson (1969) who contend that the pressures of society and the depth of educator bias may contribute to the relationship of sex with general sex bias. Their studies illustrate the difficulties to manipulate teacher expectancy of male and female students' abilities and to effect change in behavior among educators toward non-sexist procedures in the classroom.

Since female postsecondary occupational educators in male-oriented programs showed more same sex bias than female educators in female-oriented programs, it can be concluded that poor self image tends to be expressed by female postsecondary occupational educators. This study supports the psychological studies by Maccoby (1966) and Horner (1970) which showed that females hold a poor self image.

Male postsecondary occupational educators showed more same sex bias in male-oriented programs than in female-oriented programs. Thus, it can be concluded that competitiveness tends to be exemplified among male postsecondary occupational educators. This study supports the research by Chafetz (1974) which indicates that male stereotypes foster competitiveness among males.

Since Pearson product moment correlation coefficients (significant at the .05 level) give support to the relationship between postsecondary occupational educators' sex bias beliefs and their years of teaching, it can be concluded that the greater the years of teaching experience, the greater the opposite sex bias and general sex bias among postsecondary occupational educators. This study substantiates research by Grambs and Waetjen (1975) and Keiffer and Cullin (1974) which indicate that years of membership within an occupational niche serves to perpetuate sex-biased beliefs.

Due to the high evaluations of the instrument by the two panels of experts, the successful pilot test, the reasonably high K-R 20 coefficients (in both the pilot test and main study application), it can be concluded that the Sex Bias Scale has possibilities of becoming a meaningful instrument for measuring same sex bias, opposite sex bias, and general sex bias.

It may be concluded that this study, as well as other studies in sex bias, may lead to (1) an awareness of sex bias among educators; (2) an understanding of sex bias among educators; (3) the ability of educators to look at their students first as human beings and secondly as males and females, and help students develop their potential as human beings; (4) an eventual elimination of damaging effects of sex bias on males and females; (5) the compliance with Title IX and the 1976 Education Amendments; and (6) increased opportunities for both males and females in



education.

## RECOMMENDATIONS

Recommendations are presented in two sections:

Recommendations Resulting from the Study and Recommendations for Further Study.

### Recommendations Resulting from the Study

The following recommendations are made based upon conclusions drawn from the reliability coefficients of the Sex Bias Scale and the findings from the research questions.

1. Same sex bias is shown by both sexes; thereby illustrating poor self image held by female postsecondary occupational educators and competitiveness displayed among male postsecondary occupational educators. If sex equity programs (preservice and inservice) and workshops are to be conducted, it is recommended that attention be given to techniques to raise the females' self image and to solicit more cooperativeness than competitiveness among males.

2. Bias against the opposite sex among postsecondary occupational educators indicate that sex stereotypic notions regarding male and female students' academic abilities are still being perpetuated in our educational system. Thus, it is recommended that sex equity programs and workshops provide materials which disprove these sex stereotypic myths concerning the school-related abilities of their students.

3. General sex bias is also shown among postsecondary occupational educators; thereby indicating their reluctance to accept coeducational classes and to support strategies to eliminate sex stereotyping in the classroom. By helping educators understand sex bias and its damaging effects upon male and female students, sex equity programs and workshops could facilitate their support of classroom strategies to eliminate sex stereotyping. It is recommended that activities be provided which would solicit cooperativeness among postsecondary educators and which would result in the development of strategies and subsequent use in the classroom.

4. A word of caution must be made at this point. Educators do not live in a vacuum but are products of society and are influenced by the pressures it exerts. Thus, it is recommended that any efforts made to eliminate sex bias in our educational system must take into account the effects of such efforts upon the citizens and parents of the community. If sex equity programs and workshops are to be conducted, it is recommended that they extend outward by providing opportunities for the community to become more aware of sex bias, to develop an understanding of its damaging effects upon males and females, and to understand the need to develop strategies to eliminate sex bias.

### Recommendations for Further Study

Based upon the findings, conclusions, and recommendations for this study, the following recommendations for additional research are suggested:

1. A study to determine the strategies that are being employed and those which need to be employed to eliminate sex bias in vocational education should be conducted. The development and use of such strategies would diminish sex bias among postsecondary occupational educators and would weaken the contention that sex bias is perpetuated by our educational system.

2. A study to determine the effectiveness of sex equity programs and workshops in bringing about the needed behavioral change and restructuring in thinking concerning male and female roles and abilities should be conducted. The weaknesses of the sex equity programs and workshops could then be remedied and their strengths would be enhanced, thereby allowing such intervention strategies to contribute more effectively toward the elimination of sex bias.

3. A study to determine what teacher educator institutions need to do to eliminate sex bias among prospective postsecondary occupational educators should be conducted. By determining ways whereby teacher educator institutions can help eliminate sex bias among future educators, these

institutions could then effectively take the role of delimiting rather than contributing to the perpetuation of sex bias among postsecondary occupational educators.

4. A study to determine how society must change to effect change in our educational system regarding sex bias and the role that our educational system must assume to effect change in society concerning sex bias should be conducted. Our socialization process and educational system interact to perpetuate the sex stereotypic notions of appropriate male and female roles and abilities. Efforts toward change in our educational system regarding sex bias will not be effective if we do not simultaneously direct efforts toward change in sex bias within our society.

5. A study to determine further the validity and reliability of the Sex Bias Scale used in the study should be conducted. It is suggested that the instrument be used to measure sex bias of counselors as well as occupational educators, both on the secondary and postsecondary levels. The instrument could be used in time-series studies, thereby measuring change in sex bias among individuals over a period of time. If sex equity programs and workshops are to be conducted, it is suggested that the Sex Bias Scale be used in the assessment of these intervention strategies.

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APPENDICES

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APPENDIX A

Fact Sheet: Women and Work

FACT SHEET: WOMEN & WORK<sup>1</sup>

1. Of all women between the ages of 18 and 64:
  - \*About 35 million work as unpaid full-time housewives.
  - \*About 36 million (53%) are in the paid labor force.
    - \*About 70% of all women workers hold full-time jobs.
    - \*More than one out of 10 women workers are heads of households.
  
2. Women are now 39% of the total labor force.
  - \*Half of all women workers are in their late 30's or older.
  - \*More than half of all women workers are married.
  - \*More than half of all women workers have children under 18 at home.
  - \*Almost 2 of every 5 working mothers are heads of households.
  
3. When you think of the future of girls in your school, keep in mind that:
  - \*9 out of 10 will be employed sometime in their lives; 9 out of 10 will marry; 8 out of 10 will have children.
  - \*The average married woman is likely to work outside the home for 25 years; the average unmarried woman for 45 years; the average man for 43 years.
  - \*The median wage paid women is 57% that paid to men.
  - \*Only 7% of women earn over \$10,000 a year, as compared to 40% of men.
  - \*56% of all minority women over age 18 were in the paid labor force in 1974, as compared to 51% of all white women.
  - \*More that 4 out of 10 women who are married and living with their husbands are in the paid labor force.

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<sup>1</sup>Information compiled by Feminists Northwest from the following sources:

\*1973-75 publications of the U.S. Department of Labor, Women's Bureau, and Bureau of Statistics.

\*National Education Association Women's Rights Task Force Report, 1974 (covering school year 1972-73).

\*Jacqueline Clement, Sex Bias in School Leadership, Evanston, Ill: Integrated Education, 1975,

The U.S. Department of Labor defines "minority" to include:

Blacks	11 % of total U.S. population	(89% of total min. pop.)
Asians	0.7% of total	" ( 8% of " " "
Native Americans	0.5% of total	" ( 3% of " " "

The U.S. Department of Labor includes people of Spanish heritage in the "white" category. (People of Spanish heritage in the U.S. are: 56% Mexican, 16% Puerto Rican, 7% Cuban, 6% Central or South American, 15% other).

\*Title VII of the Civil Rights Act of 1964 prohibits private employers, labor unions, and employment agencies from discriminating on the basis of sex and race.

\*Since the Civil Rights Act went into effect, the U.S. Department of Labor has found over 100,000 workers, nearly all of them women, underpaid by more than \$47.5 million.

4. When you think of women with children under age 18, realize that:

\*53% of white women and 61% of minority women with children aged 6-18 are working outside the home.

\*33% of white women and 52% of minority women with children under age 6 hold jobs outside the home.

\*Only one pre-school child out of 20 whose mother works can be taken care of in an existing child care center.

\*The most rapid increase during the past 15 years in workforce participation has occurred for women with children under age 6.

5. Most women who have paying jobs work because of economic need.

\*40% of all employed women are single, divorced, widowed, separated, or deserted. They do not work for "pin money" or out of boredom.

\*20% of working women are living with husbands who earn less than \$7000 a year.

\*A married woman living with her husband is most likely to work if his income is between \$7000 and \$10,000 a year.

\*Working wives contribute 38% of family income when they work full-time year-round.

\*13% of all families are headed by single women. Over 2 million (33%) of the families headed by single women live in poverty.

\*One-third of all minority families are headed by a woman.

\*51% of all minority families headed by a woman are poor.

\*19% of all minority women who work full-time and are also heads of families are poor, as compared to 4% of white families.

\*Of women heading households with children aged 6-18: 2/3 have paying jobs.

\*Of women heading households with children under age 6: 47% are in the paid workforce.

\*One woman in 10 is widowed before age 50.



6. Unemployment is worst for minority women between 16-19 years old. As of April 1975, these were the unemployment figures:

Minority women, 16-19 years old	38.2%	were unemployed
" men,	" 37.6%	"
white men,	" 18.1%	"
" women,	" 15.2%	"
minority men, over 20 years old	12.6%	"
" women,	" 10.7%	"
white women,	" 7.6%	"
" men,	" 6.7%	"

7. Regardless of race, women earn less than both minority men and white men.

\*Median annual earnings for full-time work in 1973:

minority women	\$5,775
white women	\$6,559
minority men	\$8,365
white men	\$11,544

\*Within each job category, women earn less than men doing the same kind of work for the year 1972:

<u>major occupation group</u>	<u>women as % of total workers in each category</u>	<u>women's annual earnings</u>	<u>women's earnings as a % of men's in same work category</u>
professional & technical	40%	\$8,796	68%
managers, admin. (except farm)	19	7,306	53
clerical workers	77	6,039	63
operatives (incl. transport)	31	5,021	58
service workers (excl. household, incl. waitresses, hospital aides, beauticians, etc.)	58	4,606	59
sales workers	62	4,575	40

Furthermore:

\*The average male with an elementary school education earns more than the average female high school graduate.

\*The wage gap between women and men has been increasing during the past 25 years.

\*Half of all working women are in the 21 lowest paying job categories. These are the dead-end "women's jobs" toward which women are channeled during their school-age years. Women are under-represented in higher-paying skilled trades and managerial occupations: women are 77% of all clerical workers but only 5% of all skilled crafts workers.

\*Men have been steadily moving into traditional "women's jobs" (librarian, social workers, teacher, etc.) while women have not been moving into traditional "men's jobs" at an equal rate.

\*The growth rate for women in unions (1962-72) was 37%, compared to a 6% growth rate (1952-62). Still, in 1972, 12.6% of working women were union members, compared to 15% in 1952. Large numbers of women entering the workforce have outpaced those organizing into unions.

8. In addition to being channeled toward low-paying "women's jobs," minority women face special employment problems arising from:

\*inadequate education and skills training

\*racial discrimination

\*cultural barriers

\*language barriers

These factors are reflected in statistics which show what kinds of jobs women of different ethnic groups hold:

Occupational distribution of women by race (1973)

<u>occupational category</u>	<u>white women</u>	<u>black women</u>	<u>women of Spanish heritage</u>	<u>all women</u>
professional, tech. nonfarm managers, administrators	16.3%	11.3%	9.6%	15.7%
sales workers	5.2	2.3	2.6	4.9
clerical workers	8.1	2.5	6.0	7.4
operatives (excl. household)	36.7	16.1	23.7	13.9
household workers	15.3	25.5	18.5	16.6
other	2.0	17.9	4.0	3.8
	2.1	3.7	5.6	3.7
Total	100%	100%	100%	100%

Note on the above table: Comparison of 1973 figures with 1960 figures shows that although there has been a slight increase of minority women in manager and administrator occupations, in sales workers, and in operatives, there has been a slight decrease of white women in the same positions. As a result, the racial distribution has shifted, but the total % of women in these fields has remained the same.

About 4% of all women of Spanish heritage employed in November, 1969 held white collar jobs (professional, managerial, clerical, and sales); 35 were blue collar workers (operatives, crafts, and nonfarm laborers); and 24% were service workers. There was considerable variation according to country of origin: more than half of the women of Puerto Rican heritage were blue-collar workers; almost half of those of Cuban heritage were white-collar workers; and those of Mexican heritage were more evenly distributed among white-collar, blue collar, and service work.

9. Did you know that while the earnings gap between minority and white women is decreasing, the earnings gap between all women and all men is increasing?

In 1939, the median wage of minority women was 38% that of white women.

In 1963, the median wage of minority women was 70% that of white women.

In 1973, the median wage of minority women was 88% that of white women.

(The median wage of minority women was \$5775 in 1974, which was 69% that of minority men and 50% that of white men.)

whereas:

In 1954, the median wage of women was 64% that of men.

In 1974, the median wage of women was 57% that of men.

10. Regarding school employment:

\*An overwhelming majority of school secretaries are women.

\*85% of all elementary school teachers are women.

\*46% of all secondary school teachers are women.

\*31% of all school department heads are women.

\*26% of all central office administrators are women.

\*20% of all elementary school principals are women.

\* 3% of all secondary school principals are women.

\*less than 1% of all district superintendents are women.

\*Very few school custodians are women.

11. About older women, be forewarned:

\*The life expectancy for women is 75 years.

\*Aged women are among the most impoverished. Half of aged women have an income of less than \$1,888.

\*Low wages during employment mean low social security payments during retirement, thereby condemning millions of retired working women to a life of poverty.

\*2 out of 3 elderly people are women. 10.5 million women aged 55 or older are "on their own."

\*5 out of 8 older women are classified as poor.

APPENDIX B

Some Damaging Effects of Sex Stereotyping  
On Girls and Women

SOME DAMAGING EFFECTS OF SEX STEREOTYPING  
ON GIRLS AND WOMEN

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(adapted from Sexism in School and Society, by Nancy Frazier and Myra Sadker, Harper & Row, 1973, 71-73)

A. LOSS OF ACADEMIC POTENTIAL

1. Intellectually, girls start off ahead of boys. They begin speaking, reading, and counting sooner; in the early grades they are even better in math. However, during the high school years, a different pattern emerges and girls' performance on ability tests begins to decline. Indeed, male students exhibit significantly more IQ gain from adolescence to adulthood than do their female counterparts. (Eleanot Maccoby, "Sex Differences in Intellectual Functioning," in Eleanor Maccoby (ed.), The Development of Sex Differences, Stanford, CA: Stanford University Press, 1966)
2. Although women make much better high school grades than do men, they are less likely to believe that they have the ability to do college work. (Patricia Cross, "College Women: A Research Description," Journal of National Association of Women Deans and Counselors, 32, no. 1 (Autumn 1968), 12-21)
3. Of the brightest high school graduates who do not go to college, 75-90 percent are women. (Facts About Women in Education, prepared by the Women's Equity Action League. Can be obtained from WEAL, 1253 4th St. S.W., Washington, D.C.)
4. In 1900, women earned 6 percent of all doctoral degrees; in 1920, 15 percent; and by 1968, only 13 percent. In short, the percentage of doctorates earned by women has actually decreased since the 1920's. (Edith Painter, "Women: The Last of the Discriminated," Journal of National Association of Women Deans and Counselors, 34, no. 2 (Winter 1971), 59-62)

B. LOSS OF SELF-ESTEEM

1. As boys and girls progress through school, their opinions of boys grow increasingly more positive and their opinions of girls increasingly more negative. Both sexes are learning that boys are worth more. (S Smith, "Age and Sex Differences in Children's Opinions Concerning Sex Differences," Journal of Genetic Psychology, 54, no. 1 (March 1939), 17-25)

2. Fewer high school women than men rated themselves above average on leadership, popularity in general, popularity with the opposite sex, and intellectual as well as social self-confidence. (Cross, op. cit.)
3. On the Bernreuter personality inventory, norms show that women are more neurotic and less self-sufficient, more introverted and less dominant than men. (R.G. Bernreuter, "The Theory and Construction of the Personality Inventory," Journal of Social Psychology, 4, no. 4 (November 1932), 387-405)
4. College women believe that men desire a woman who is extremely passive and who places wifely and familial duties above her own personal and professional development. (Anne Steinman, Joseph Levi, and David Fox, "Self Concept of College Women Compared with Their Concept of Ideal Women and Men's Ideal Women," Journal of Counseling Psychology, 11, no. 4 (Winter 1964, 27-33).
5. College women respond negatively to women who have achieved high academic or vocational success, and at times display an actual desire to avoid success. (Matina Horner, "Woman's Will to Fail," Psychology Today, 3, no. 6 (November 1969), 36-38)
6. Fifty-five percent of a group of women at Stanford and forty percent at Berkeley agreed with the following sentence: "There is a time when I wished I had been born a member of the opposite sex." Only one in seven male students would endorse such a statement (Joseph Katz, No Time for Youth, San Francisco, Josey Bass, 1968)
7. Both male and female college students feel the characteristics associated with masculinity are more valuable and more socially desirable than those associated with femininity. (John McKee and Alex Sheriffs, "The Differential Education of Males and Females," Journal of Personality, 35, no. 3, (Sept. 1957), 356-371)

C. LOSS OF OCCUPATIONAL POTENTIAL\*

1. By the time they are in the fourth grade, girls' visions of occupations open to them are limited to four: teacher, nurse, secretary, or mother. Boys of the same age do not view their occupational potential through such restricting glasses. (Robert O'Hara, "The Roots of Careers," Elementary School Journal, 62, no. 5 (Feb. 1962), 277-280)
2. By the ninth grade 25 percent of boys and only 3 percent of girls are considering careers in science or engineering. (Daryl Bem and Sandra Bem, "We're All Nonconscious Sexists," in Daryl Bem, Beliefs, Attitudes, and Human Affairs, Monterey, Cal: Brooks/Cole Copyright 1970 by Wadsworth Pub. Co.)
3. Decline in career commitment has been found in girls of high school age. This decline was related to their feelings that male classmates disapproved of a woman's using her intelligence. (Peggy Hawley, "What Women Think Men Think," Journal of Counseling Psychology, 18, no. 3 (Autumn 1971), 193-4)
4. In a survey conducted in 1966 throughout the state of Washington 66.7 percent of boys and 59 percent of girls stated that they wished to have a career in professional occupations. However, 57 percent of the boys and only 31.9 percent of the girls stated that they actually expected to be working in such an occupation. (Walter Slocum and Roy Boles, "Attractiveness of Occupations to High School Students," Personnel and Guidance Journal, 46, no. 8, (April 1968), 754-761)

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\*The attitude and competencies with which a young woman enters the labor market will become of increasing importance. It has been estimated that nine out of ten females will be working on a full-time basis at some point in their lives. Between 1968 and 1980, the Department of Labor estimates that the total number of women in the labor force will increase by 27 percent, whereas the total number of men will increase by only 20 percent. (Jeanne Holm, "Employment and Women: Cinderella Is Dead," Journal of National Association of Women Deans and Counselors, 34, no. 1, (Autumn 1970), 6-13)

5. College women become increasingly interested in being housewives from their freshman to their senior year in college. This is at the expense of academic and vocational goals (Linda Bruemmer, "The Condition of Women in Society Today: A Review--Part 1," Journal of National Association of Women Deans and Counselors, 33, no. 1 (Autumn 1969), 18-22)
6. In 1973, the median annual full-time income for a white man was \$11,544; for a minority man \$8,365; for a white woman \$6,559; and for a minority woman, \$5,775. (U.S. Department of Labor statistics)

(See FACT SHEET: WOMEN & WORK for further information.)

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These key studies were drawn together in a list, meant to be representative rather than inclusive, to gain some sense of the growth that has been stunted and of the promise that has been denied.



APPENDIX C

Some Damaging Effects of Sex Stereotyping  
On Boys and Men

SOME DAMAGING EFFECTS OF SEX STEREOTYPING  
ON BOYS AND MEN

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Compiled by Feminists Northwest

A. LOSS OF PERSONALITY AND WORK OPTIONS

1. The damage of stereotyping is even more irreparable for the boy than for the girl. When boys learn stereotyped male behavior there is a 20 percent better chance that it will stay with them for life than when girls learn stereotyped behavior. (P.H. Mussen, "Some Antecedents and Consequents of Masculine Sex-Typing in Adolescent Boys," Psychological Monographs, Vol. 75, no. 2 (1961); and P.H. Mussen, "Long-term Consequents of Masculinity on Interests in Adolescence," Journal of Consulting Psychology, Vol. 26 (1962), 435-440)
2. Demands that boys conform to social notions of what is manly come much earlier and are reinforced with much more vigor than similar attitudes with respect to girls. Several research studies, using preschool children as their subjects, indicate that boys are aware of what is expected of them because they are boys and restrict their interests and activities to what is suitably "masculine" in kindergarten, while girls amble gradually in the direction of "feminine" patterns for five more years. (Ruth Hartley, "Sex-Role Pressures and the Socialization of the Male Child," in Judith Stacey et al. (eds.), And Jill Came Tumbling After: Sexism in American Education, New York: Dell, 1974, 185-198)
3. Most boys build expectations that are higher than their achievements. . . . Boys who score high on sex-appropriate behavior (possessing masculine outlook and behavior) also score highest in anxiety . . . . Striving to maintain a masculine role is for the boy stressful enough to be associated with manifest anxiety. (Susan W. Gray, "Masculinity-Femininity in Relation to Anxiety and Social Acceptance," Child Development, Vol. 28, no. 2 (June 1957), 203-214)
4. Because of the relative absence of fathers from boys' experience . . . the elementary aged boy looks to his peers to fill in the gaps in his information about his role as a male. Since his peers have no better sources of information than he has, all they can do is to pool the impressions and anxieties they derive from the media and their early training. Thus we find over-emphasis on physical strength and athletic skills with almost complete omission of tender feelings or acceptance of responsibility toward those that are weaker. (Adapted from Ruth Hartley, op. cit.)

5. Six volumes of studies document that violence in American society is taught, learned and acted upon. Boys are actually encouraged to be aggressive by parents while girls are not. Almost all TV models encourage aggression in men. Childhood aggression predictably results in continued undisguised aggression when boys become men. (Warren Farrell, The Liberated Man, N.Y.: Bantam Books, 1974, p. 43; and Robert Liebert, "Television and Social Learning: Some Relationships between Viewing Violence and Behaving Aggressively" (Overview) in Television and Social Behavior: A Report To The Surgeon General from the Surgeon General's Scientific Advisory Committee on Television and Social Behavior, vols. 1-5, Washington, D.C.: National Institute of Mental Health, U.S. Govt. Printing Office, 1972)
6. Basically the male stereotype discourages males from speaking openly with one another about their fears, anxieties, and weaknesses. It fosters intellectualizing, bravado, and competitiveness among males, all of which are directly antithetical to more intimate personal exchanges. (Janet Saltzman Chafetz, Masculine/Feminine or Human? Itasca, Ill: F.E. Peacock Publisher, Inc., 1974, p. 165)
7. Most boys recognize they cannot prove themselves on all levels . . . . But they must still choose between two basic images of what a man is and can be--images which are apparent from both children's books and numerous other sources. One image is the "physical striving man" and the other, the "job striving" man (Warren Farrell, op. cit. pp. 37-38)
8. There are some further costs of the masculine role. It is well known that males have a life expectancy that is shorter by several years than that of females, and that there is a much higher mortality rate for males between the specific ages of 18 and 65 than for females. Some of the reasons for this are probably related to sex role phenomena. First, males suffer more accidental deaths in sports, on dangerous vehicles like motorcycles, and through violence. Part of the definition of masculinity is personal bravery and adventuresomeness.

Over and above accidental deaths are deaths from diseases that probably reflect, in part, the masculine emphasis on competition, success, and productivity. The pressure on males to "succeed" in a highly competitive world of work create tremendous stress; in the final analysis, few males can ever sit back and say "I've arrived; I am a success; now I can relax."

Among the large numbers of males doing less competitive but more repetitious labor, the pressure to persist day in, day out, year after year, in highly alienating work results from the sex role requirement that they provide for their families the best they possibly can in material terms. Heart attacks, strokes, high blood pressure, and other circulatory illnesses probably result in part from such pressures. They undoubtedly also contribute to the much higher rates of alcohol and drug abuse among males, which in turn hasten death, and they are reflected in the higher male suicide rate. The proscription on expressing emotions entailed in the masculine role definition probably exacerbates the stresses inherent in the obligation to support a family--financially and emotionally--and to succeed in an often highly competitive "rat race." (Janet Saltzman Chafetz, op. cit., pp. 64-65)

9. In my survey of male employees I frequently found that when I asked the employee if he would ever consider taking a year off to care for children, he would consistently reply something like: "Personally I would like to do it, but I could really endanger myself here at work--imagine telling my boss I'm going to be a mother for a year!" If I agreed that might be impractical and asked, "Would you actively support a child-care center here in your company?" a not atypical reaction was, "If I keep pushing for things like that, I'll end up Vice President in Charge of Girls (laughter)." Over and over the employees seemed scared, even to the point of sweating, to be part of anything out of the ordinary, particularly if it associated them with something "weaker," like women, or showed what our society considers "weakness" like self-examination. (Warren Farrell, op. cit., p. 48).

B. LOSS OF ACADEMIC POTENTIAL

1. At age six when a boy enters first grade, he may be twelve months behind his female counterpart in development age, and by nine this discrepancy has increased to eighteen months. Thus he is working side by side with a female who may not only be bigger than he, but who seems better prepared to handle school more competently and more comfortably. (Frances Bentzen, "Sex Ratios in Learning and Behavior Disorders," National Elementary School Principal 46, no. 2 (Nov. 1966, 13-17); as quoted in Nancy Frazier and Myra Sadker, *Sexism in School and Society*, New York: Harper & Row, 1973, p. 87)
2. Among boys and girls of comparable IQ, girls are more likely to receive higher grades than boys. Also boys, who do equally well as girls on achievement tests get lower grades in school. In fact, throughout elementary school, two-thirds of all grade repeaters are boys. (Gary Peltier, "Sex Differences in the School: Problem and Proposed Solution," Phi Delta Kappan, 50, no. 3 (Nov. 1968), 182-85; as quoted in Frazier, Ibid., p. 92)
3. Boys receive 8 to 10 times as many prohibitory control messages (warnings like: "That's enough talking Bill. Put that comic away, Joe") as their female classmates. Moreover, when teachers criticize boys, they are more likely to use harsh or angry tones than when talking with girls about an equivalent misdemeanor. (Phil Jackson and Henriette Lahaderne, "Inequalities of Teacher-Pupil Contacts," in Melvin Silberman (ed.), The Experience of Schooling, New York: Holt, Rinehart and Winston, 1971, pp. 123-134; as quoted in Frazier, Ibid., p. 89)
4. Studies of educational underachievement in the gifted have revealed that underachievement occurs twice as frequently among boys as among girls. (Ruth Hartley, op. cit. p. 185)
5. Boys are the maladjusted, the low achievers, the truants, the delinquents, the inattentive, the rebellious. National delinquency rates are five times higher among boys than girls; in New York City, 63% of all drop-outs are boys. (Patricia Cayo Sexton, "Schools are Emasculating Our Boys," in Judity Stacey, op. cit., 138-141)
6. Some researchers have found three times more boys than girls have trouble with reading. (Frazier, op. cit., p. 92)

7. The "physical striver" considers it masculine not to care about what his teachers think. "How much you can get away with," is far more masculine than an enthusiastic "Look how much I learned!" The reading difficulty itself is perpetuated by the fear of studying, and the insecurity by the fear of appearing like a girl. (Warren Farrell, op. cit., pp. 34, 38)
8. The poorly educated physical striving male makes absolute statements often bordering on the authoritarian. In this way he feels no one dare challenge him. The more educated student striver learns to articulate and hedge his statements so carefully as to never be vulnerable. Both are concerned with proving themselves right, rather than discovering what's right. (Warren Farrell, op. cit., pp. 39-40)

### C. LOSS OF NURTURANT AND SOCIAL-EMOTIONAL QUALITIES

1. . . . our sex role stereotypes have left virtually the entire realm of emotional expression and human caring to femininity. It is difficult to imagine a genuine loving relationship involving the social, unemotional, instrumentally oriented, dominating, aggressive, and competitive nature of the masculine stereotype. Moreover, both males and females view a husband's primary function as that of provider; there is no socially defined and sanctioned expectation that he confide, comfort, or share, and without these there is scarcely "love." (Chafetz, op. cit., p. 166)
2. Almost nothing in the prefatherhood learning of most males is oriented in any way to training them for parenting. They are actively discouraged as children from play activities involving baby surrogates and except in rare instances of large families with few or no older sisters, they are not usually required to help much in the daily care of younger siblings. (Chafetz, op. cit., p. 178)
3. By and large, most fathers, especially white middle class, probably relate very little to their children during infancy and early childhood, perceiving them as more or less of a nuisance. Fathers do not actively partake of the petty daily problems and needs of their offspring and they remain tangential to the intimate lives of their children, involved only in the "special" moments of excitement or disaster. In most cases fathers refuse even to engage in physical contact with their sons past infancy, preferring the handshake to the kiss. (Chafetz, op. cit., p. 180)

4. In addition to the relative absence of fathers from boys' experience, we have evidence that the relations between boys and their fathers tend to be less good than those between girls and their mothers or fathers. (Hartley, op. cit., p. 188)
5. Given the relative absence of male figures during his waking hours, the male toddler is hard pressed to find out what he is supposed to do. When the father is present he usually surpasses the mother in punishing the boy for being too "feminine" perhaps because of his own sex role insecurities. The boy finds out that "boys don't cry," "boys don't cling," and so on, but often on the basis of negative sanctions from parents and peers. (Chafetz, op. cit., pp. 73-74; and David Lynn, Parental and Sex Role Identification: A Theoretical Formulation, Berkeley, CA: McCutchan Publishing, 1969, pp. 57-64)
6. In the long run, however, it is men's relationships with each other that the proscription against having "feminine" feelings is most costly, because it precludes having a deep intimate involvement with someone who might share similar problems. In our society, where sex and affection are closely intertwined, if one gets too close to other men there is a fear that this affection will be seen as sexual, and homosexuality is the antithesis of masculinity. Furthermore, it would be difficult indeed to be supportive toward those persons with whom one is competing. This ban on emotionality does not necessarily apply to other cultures where men are allowed more latitude in expressiveness; in many European cultures men are allowed to embrace each other without compromising their masculinity. (Deborah David and Robert Brannon (eds.) The Forty-Nine Percent Majority: The Male Sex Role, Reading, MA: Addison-Wesley, 1976, p. 50)

APPENDIX D

Vocational-Occupational Education Programs  
On the Postsecondary Level



## BUSINESS AND COMMERCE TECHNOLOGIES

Accounting/Bookkeeping (N)	Income Tax
Applied/Commercial Arts (M)	Insurance
Aviation/Pilot Training	Legal Assistant
Banking/Finance	Marketing and Merchandising Mgmt (M)
Business Administration (M)	Military Management
Cashier	Personal Development/Modeling
Communications/Broadcasting	Printing/Lithograph
Conference and Court Reporting	Real Estate
Cosmetology/Barbering-Hairdressing	Secretarial Science (F)
Hotel/Restaurant Management (M)	Transportation

## DATA PROCESSING TECHNOLOGIES

Computer Application/ Communications	Data Processing Equipment Maintenance
Computer Operations	Data Processing, General (F)
Computer Programming	Key Punch Operator

## HEALTH SERVICE/PARAMEDICAL TECHNOLOGIES

Animal Laboratory Assistant	Mortuary Science
Dental Hygiene	Nursing, General and R.N. (F)
Dental Laboratory (F)	Nursing, Practical (F)
Dietetics (F)	Operating Room Technician (F)
Electro-Diagnostic Technician	Optical Technologies
Health Services, Assistant, General	Physical Therapy

Horse/Livestock Management	Psychiatric/Mental Health Aide (F)
Medical Assistant	Radiologic/X-Ray (F)
Medical Laboratory Assistant (F)	Respiration Therapy Technician (N)
Medical Record Technician	

## MECHANICAL/ENGINEERING TECHNOLOGIES

Architectural Drafting (M)	Mechanical/Engineering, General (M)
Automotive Technology (M)	Mechanical Technology (M)
Aviation Technologies	Mining Technology
Civil Technologies/Surveying	Nuclear Technology
Construction/Building Technology (M)	Textile Technology
Crafts Technologies (F)	Tool Machine Drafting/Design
Diesel (M)	Vending Machine Repair
Electronics/Appliance Repair (M)	Water-Well Drilling
Industrial Technologies (M)	Welding Technology (M)
Instrumentation Technology	

## NATURAL SCIENCE TECHNOLOGIES

Agriculture (M)	Forestry and Wildlife (M)
Environmental and Public Health	Home Economics Technology (F)
Equitation/Farriery	Marine and Oceanographic Technology
Food Service Technology (N)	

## PUBLIC SERVICE RELATED TECHNOLOGIES

Applied Music/Choir Director	Library Assistant
Education Technology	Public Administration/ Management (M)
Fire Science (M)	Public Service, General
Law Enforcement/Corrections (M)	Recreation/Social Work (F)

Note. The sex-orientation of the postsecondary occupational programs are denoted by the following symbols: (M) = male-oriented program; (N) = nonsex-oriented program; and (F) = female-oriented program.

Source: Directory of Virginia's Postsecondary Education and Training Opportunities, 1976-77. Richmond, Virginia: The State Council of Higher Education for Virginia, 1978, 39-41.

APPENDIX E  
Panel of Experts  
Groups A & B

PANEL OF EXPERTS

GROUP A

Each of the following are postsecondary occupational educators at  
New River Community College, Dublin, Virginia:

Mr. Marvin Long  
Business Management

Mr. Ron Chaffin  
Continuing Education

Dr. Betty Hines  
Secretarial Science

Mr. Michael Byrd  
Drafting and Design

Mr. Charles Dean  
Business Management

Mr. Brack Smith  
Industrial Technology

Dr. Ed Barnes  
Vocational-Technical Education

PANEL OF EXPERTS

GROUP B

Each of the following are educators at Virginia Polytechnic Institute  
and State University, Blacksburg, Virginia:

Dr. Robert B. Frary  
Measurement & Evaluation Consultant

Dr. Marion Asche  
Associate Professor  
Vocational-Technical Education

Dr. Era Looney  
Assistant Professor  
Vocational-Technical Education

APPENDIX F

Evaluation Form of Sex Bias Scale: Group A

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## BASIC BELIEFS REGARDING SEX BIAS

Panel of Experts

Your assistance is requested in the evaluation of the following statements. They represent basic belief statements which will be mailed to community college occupational educators to identify and compare their basic beliefs regarding sex bias.

Before mailing these statements to the participants of the study in a questionnaire format, a careful refinement of the statements is necessary. Because of your experience and expertise in occupational education, you are asked to provide assistance in this evaluation. Specifically, please judge each statement in the following areas:

1. Can the statement be interpreted in only one way?
2. Is the statement clear, simple, and direct?
3. Does the statement include only one complete thought?
4. Is the statement relevant to the study (i.e., does it refer to sex bias)?
5. Is the statement easily understood?

For the purpose of this study, basic belief is defined as a statement about sex bias with which an individual accepts or believes.

As you read the statement and accompanying responses, please take into consideration the above criteria and place a checkmark in the appropriate column to indicate that the criterion has been met. In addition, any written comments that you may have concerning the clarity of the directions and the section designed to collect demographic information should be included and will be appreciated.

Although you have been given two forms of the instrument (Form A for females, Form B for males), you need only to evaluate Form A because the questions are the same on both forms with one difference: the word "Female" in questions 3-4, 6-21, 23-25, 30-31 on Form A is substituted for the word "male" on Form B.

BASIC BELIEFS REGARDING SEX BIAS

	A) The statement can be interpreted in only one way.	B) The statement is clear, simple and direct.	C) The statement includes only one thought.	D) The statement is relevant to the study (i.e., sex bias).	E) The statement is easily understood.
1. Qualified men should have opportunities to hold and be promoted in jobs traditionally held by females. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
2. A woman should be willing to leave her job to follow her husband's job when considering all factors it seems appropriate to do so. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
3. Men should be paid equally for equivalent work performed by women. 1. Agree 2. Disagree, men should be paid more in many cases 3. Disagree, women should be paid more in many cases					
4. In most jobs, a man can do everything that a woman can do. 1. Agree 2. Disagree, men perform better on most jobs than women 3. Disagree, women perform better on most jobs than men					
5. I would consider doing a job that isn't traditional for my sex. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					



	(A)	(B)	(C)	(D)	(E)
6. Female students are on the average more mature than male students. 1. Disagree, neither is more mature generally 2. Disagree, male students are generally more mature 3. Agree					
7. Female students are generally more conscientious and more interested in getting good grades than male students. 1. Disagree, both are about equally conscientious and interested 2. Disagree, male students are generally more conscientious and interested 3. Agree					
8. Female students are better on the average in basic academic skills than male students. 1. Disagree, both are about equally capable 2. Disagree, male students are generally more capable 3. Agree					
9. Female students generally have less psychomotor abilities than male students. 1. Disagree, both have equal psychomotor abilities generally 2. Agree 3. Disagree, female students generally have more abilities					
10. Female students are generally less capable in thought processes than male students. 1. Disagree, both are about equally capable 2. Agree 3. Disagree, female students are generally more capable					
11. Female students generally "take suggestions better" than male students. 1. Disagree, both take suggestions about equally well. 2. Disagree, male students generally take suggestions better 3. Agree					
12. Female students are generally more attentive in class than male students. 1. Disagree, both are about equally attentive 2. Disagree, male students are generally more attentive 3. Agree					

	(A)	(B)	(C)	(D)	(E)
13. Female students generally have a greater desire to learn than male students. 1. Disagree, neither have a greater desire generally 2. Disagree, male students generally have a greater desire 3. Agree					
14. Female students are generally more capable at being high achievers in science and mathematics than male students. 1. Disagree, both are about equally capable at being high achievers 2. Disagree, male students are generally more capable at being high achievers 3. Agree					
15. Female students are generally more attentive to detail in listening to and carrying out directions than male students. 1. Disagree, both are about equally attentive 2. Disagree, male students are generally more attentive 3. Agree					
16. It is of equal importance for both male and female students to achieve grades high enough to enter college. 1. Agree 2. Disagree, it is generally more important for male students 3. Disagree, it is generally more important for female students					
17. Female students generally have greater verbal ability than male students. 1. Disagree, neither has more ability generally 2. Disagree, male students generally have greater verbal ability 3. Agree					
18. Female students generally have greater visual-spatial ability than male students. 1. Disagree, neither has more ability generally 2. Disagree, male students generally have greater ability 3. Agree					
19. Female students are generally more capable than male students at rote learning and simple repetitive tasks. 1. Disagree, both are about equally capable 2. Disagree, male students are generally more capable 3. Agree					

	(A)	(B)	(C)	(D)	(E)
20. Female students are generally less capable than male students at tasks that require high level cognitive thinking. 1. Disagree, both are about equally capable 2. Agree 3. Disagree, female students are generally more capable					
21. Female students are generally less "analytic" than male students. 1. Disagree, neither are more analytic generally 2. Agree 3. Disagree, female students are generally more analytic					
22. Coed classes generally present a more realistic picture of the working world by letting students know they will compete for jobs with the opposite sex. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
23. "Safety hazards generally increase in laboratory sessions or in shop areas when classes are coed. 1. Disagree 2. Agree, due mainly to the presence of females 3. Agree, due mainly to the presence of males					
24. Competition should not be encouraged any more or less between female and male students than students of the same sex. 1. Agree 2. Disagree, because female students would excel generally 3. Disagree, because male students would excel generally					
25. Female students generally present less discipline problems than male students. 1. Disagree, neither present greater discipline problems 2. Disagree, female students generally present more problems 3. Agree					
26. Female role models should be provided in such occupational education areas as trade, industry and technology. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					

	(A)	(B)	(C)	(D)	(E)
27. Male role models should be provided in such occupational education areas as nursing, home economics, and secretarial science. 1. Agree/Tend to Agree 2. Disagree/ Tend to Disagree					
28. All classes must be open to both sexes. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
29. Shop or lab designs should provide adequate facilities for both sexes - restrooms, lockers, sizes of equipment, etc. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
30. Males and females should be motivated equally toward leadership positions and job goals that lead to the highest levels of responsibility. 1. Agree 2. Disagree, males should be motivated more so than females 3. Disagree, females should be motivated more so than males					
31. It is generally more important for female students to receive scholarships than it is for male students. 1. Disagree, it is about equally important for both males and females to receive scholarships 2. Disagree, it is generally more important for male students 3. Agree					
32. Problems associated with sex roles and sex stereotyping should be discussed in class. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
33. Classroom materials should present women in roles which go beyond child-care, cooking, cleaning, clerking, nursing and teaching. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					

	(A)	(B)	(C)	(D)	(E)
34. Classroom materials should present men in a variety of roles, including child-care, cooking secretaries, elementary school teachers, telephone operators and clerks. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
35. Male students should be encouraged to enroll in such courses as home economics, nursing and secretarial science. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
36. Female students should be encouraged to enroll in such courses as automotive, electronics and drafting technologies. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
37. Nonsexist guidelines should be followed in purchasing and using textbooks and other instructional materials. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree					
38. Compassion, consideration and tenderness should be emphasized more for females than males. 1. Disagree/Tend to Disagree 2. Agree/Tend to Agree					
39. Assertiveness, risk-taking, and strength should be emphasized more for males than females. 1. Disagree/Tend to Disagree 2. Agree/Tend to Agree					

APPENDIX G

Evaluation Form of Sex Bias Scale: Group B

## BASIC BELIEFS REGARDING SEX BIAS

Panel of Experts

Your assistance is requested in the evaluation of the following statements. They represent basic belief statements which will be mailed to community college occupational educators to identify and compare their basic beliefs regarding sex bias.

Before mailing these statements to the participants of the study in a questionnaire format, a careful refinement of the statements is necessary. Because of your knowledge in the area of sex stereotyping, sex discrimination and sex bias, you are asked to provide assistance in this evaluation. Specifically, please judge each statement in the following areas:

1. Does choice 2 of statements 3, 4, 6-21, 23-25, 30-31 indicate bias toward the same sex (same sex bias)?
2. Does choice 3 of statements 3, 4, 6-21, 23-25, 30-31 indicate bias toward the opposite sex (opposite sex bias)?
3. Does choice 1 of statements 1-39 indicate nonsex bias?
4. Does choice 2 of statements 1, 2, 5, 22, 26-29, 32-39 indicate sex bias?
5. Can the three scores (General Sex Bias, Same Sex Bias, Opposite Sex Bias) range in value from 0 to 1, with the value of 0 indicating nonsex bias and 1 indicating sex bias?
6. Can statements 1, 2, 5, 22, 26-29, 32-39 be scored to give a "general sex bias" measure (General Sex Bias Score)?
7. Can statements 3, 4, 6-21, 23-25, 30-31 be scored to give a "same sex bias" measure (Same Sex Bias Score)?
8. Can statements 3, 4, 6-21, 23-25, 30-31 be scored to give an "opposite sex bias" measure (Opposite Sex Bias Score)?

For the purpose of this study, basic belief is defined as a statement about sex bias with which an individual accepts or believes.

As you read the statement and accompanying responses, please take into consideration the above criteria and place a checkmark in the appropriate column to indicate that the criterion has been met.

Although you have been given two forms of the instrument (Form A for females, Form B for males), you need only to evaluate Form A because the questions are the same on both forms with one difference: the word "female" in questions 3-4, 6-21, 23-25, 30-31 on Form A is substituted for the word "male" on Form B.

BASIC BELIEFS REGARDING SEX BIAS

PART I: Statements 3-4, 6-21, 23-25, 30-31:

	A) Choice 1 of statement indicates nonsex bias.	B) Choice 2 of statement indicates bias toward the same sex (same sex bias)	C) Choice 3 of statement indicates bias toward the opposite sex (opposite sex bias)
3. Men should be paid equally for equivalent work performed by women. 1. Agree 2. Disagree, men should be paid more in many cases 3. Disagree, women should be paid more in many cases			
4. In most jobs, a man can do everything that a woman can do. 1. Agree 2. Disagree, men perform better on most jobs than women 3. Disagree, women perform better on most jobs than men			
6. Female students are on the average more mature than male students. 1. Disagree, neither is more mature generally 2. Disagree, male students are generally more mature 3. Agree			
7. Female students are generally more conscientious and more interested in getting good grades than male students. 1. Disagree, both are about equally conscientious and interested 2. Disagree, male students are generally more conscientious 3. Agree			



	(A)	(B)	(C)
8. Female students are better on the average in basic academic skills than male students. 1. Disagree, both are about equally capable 2. Disagree, male students are generally more capable 3. Agree			
9. Female students generally have less psychomotor abilities than male students. 1. Disagree, both have equal psychomotor abilities generally 2. Agree 3. Disagree, female students generally have more abilities			
10. Female students are generally less capable in thought processes than male students. 1. Disagree, both are about equally capable 2. Agree 3. Disagree, female students are generally more capable			
11. Female students generally "take suggestions better" than male students. 1. Disagree, both take suggestions about equally well 2. Disagree, male students generally take suggestions better 3. Agree			
12. Female students are generally more attentive in class than male students. 1. Disagree, both are about equally attentive 2. Disagree, male students are generally more attentive 3. Agree			
13. Female students generally have a greater desire to learn than male students. 1. Disagree, neither have a greater desire generally 2. Disagree, male students generally have a greater desire 3. Agree			
14. Female students are generally more capable at being high achievers in science and mathematics than male students. 1. Disagree, both are about equally capable at being high achievers 2. Disagree, male students are generally more capable at being high achievers 3. Agree			
15. Female students are generally more attentive to detail in listening to and carrying out directions than male students. 1. Disagree, both are about equally attentive 2. Disagree, male students are generally more attentive 3. Agree			

	(A)	(B)	(C)
16. It is of equal importance for both male and female students to achieve grades high enough to enter college. 1. Agree 2. Disagree, it is generally more important for male students 3. Disagree, it is generally more important for female students			
17. Female students generally have greater verbal ability than male students. 1. Disagree, neither has more ability generally 2. Disagree, male students generally have greater verbal ability 3. Agree			
18. Female students generally have greater visual-spatial ability than male students. 1. Disagree, neither has more ability generally 2. Disagree, male students generally have greater ability 3. Agree			
19. Female students are generally more capable than male students at rote learning and simple repetitive tasks. 1. Disagree, both are about equally capable 2. Disagree, male students are generally more capable 3. Agree			
20. Female students are generally less capable than male students at tasks that require high level cognitive thinking. 1. Disagree, both are about equally capable 2. Agree 3. Disagree, female students are generally more capable			
21. Female students are generally less "analytic" than male students. 1. Disagree, neither are more analytic generally 2. Agree 3. Disagree, female students are generally more analytic			
23. "Safety hazards" generally increase in laboratory sessions or in shop areas when classes are coed. 1. Disagree 2. Agree, due mainly to the presence of females 3. Agree, due mainly to the presence of males			

	(A)	(B)	(C)
24. Competition should not be encouraged any more or less between female and male students than students of the same sex. 1. Agree 2. Disagree, because female students would excel generally 3. Disagree, because male students would excel generally			
25. Female students generally present less discipline problems than male students. 1. Disagree, neither present greater discipline problems 2. Disagree, female students generally present more problems 3. Agree			
30. Males and females should be motivated equally toward leadership positions and job goals that lead to the highest levels of responsibility. 1. Agree 2. Disagree, males should be motivated more so than females 3. Disagree, females should be motivated more so than males			
31. It is generally more important for female students to receive scholarships than it is for male students. 1. Disagree, it is about equally important for both males and females to receive scholarships. 2. Disagree, it is generally more important for male students 3. Agree			

CHECK ONE RESPONSE FOR EACH STATEMENT BELOW

The above statements can be scored to give a "same sex bias" measure (Same Sex Bias Score). \_\_\_Agree \_\_\_Disagree

The above statements can be scored to give an "opposite sex bias" measure (Opposite Sex Bias Score). \_\_\_Agree \_\_\_Disagree

The two scores, Same Sex Bias Score and Opposite Sex Bias Score, can range in value from 0 to 1, with the value of 0 indicating nonsex bias and 1 indicating sex bias. \_\_\_Agree \_\_\_Disagree

PART II: Statements 1, 2, 5, 22, 26-29, 32-39

	A) Choice 1 of statement indicates nonsex bias.	B) Choice 2 of statement indicates sex bias.
<p>1. Qualified men should have opportunities to hold and be promoted in jobs traditionally held by females.</p> <p>1. Agree/Tend to Agree</p> <p>2. Disagree/Tend to Disagree</p>		
<p>2. A woman should be willing to leave her job to follow her husband's job when considering all factors it seems appropriate to do so.</p> <p>1. Agree/Tend to Agree</p> <p>2. Disagree/Tend to Disagree</p>		
<p>5. I would consider doing a job that isn't traditional for my sex.</p> <p>1. Agree/Tend to Agree</p> <p>2. Disagree/Tend to Disagree</p>		
<p>22. Coed classes generally present a more realistic picture of the working world by letting students know they will compete for jobs with the opposite sex.</p> <p>1. Agree/Tend to Agree</p> <p>2. Disagree/Tend to Disagree</p>		

	(A)	(B)
26. Female role models should be provided in such occupational education areas as trade, industry and technology. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
27. Male role models should be provided in such occupational education areas as nursing, home economics, and secretarial science. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
28. All classes must be open to both sexes. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
29. Shop or lab designs should provide adequate facilities for both sexes - restrooms, lockers, sizes of equipment, etc. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
32. Problems associated with sex roles and sex stereotyping should be discussed in class. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
33. Classroom materials should present women in roles which go beyond child-care, cooking, cleaning, clerking, nursing and teaching. 1. Agree, Tend to Agree 2. Disagree/Tend to Disagree		
34. Classroom materials should present men in a variety of roles, including child-care, cooking, secretaries, elementary school teachers, telephone operators and clerks. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
35. Male students should be encouraged to enroll in such courses as home economics, nursing and secretarial science. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
36. Female students should be encouraged to enroll in such courses as automotive, electronics and drafting technologies. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		

	(A)	(B)
37. Nonsexist guidelines should be followed in purchasing and using textbooks and other instructional materials. 1. Agree/Tend to Agree 2. Disagree/Tend to Disagree		
38. Compassion, consideration and tenderness should be emphasized more for females than males. 1. Disagree/Tend to Disagree 2. Agree/Tend to Agree		
39. Assertiveness, risk-taking, and strength should be emphasized more for males than females. 1. Disagree/Tend to Disagree 2. Agree/Tend to Agree		

CHECK ONE RESPONSE FOR EACH STATEMENT BELOW

The above statements can be scored to give a "general sex bias" measure (General Sex Bias Score). \_\_\_Agree \_\_\_Disagree

The score, General Sex Bias Score, can range in value from 0 to 1, with the value of 0 indicating nonsex bias and 1 indicating sex bias. \_\_\_Agree \_\_\_Disagree

APPENDIX H

Cover Letter to Pilot Study Participants

COLLEGE OF EDUCATION



## VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL &amp; TECHNICAL EDUCATION

Dear Participant:

We have collected statements which could serve as basic beliefs regarding sex bias. As a phase of this study, we are hopeful that you will assist in the field test by completing the enclosed questionnaire. This study will provide community college occupational educators the opportunity to identify beliefs regarding sex bias. Such data will provide information beneficial to occupational educators and administrators and to those individuals conducting research on basic beliefs regarding sex bias in vocational education.

Your cooperation in completing the questionnaire will take a small amount of your time but will be of great importance to the success of the study. Your responses will be used to develop the final instrument which will be sent to the respondents in the study. Responses which you provide will be kept in strict confidence, and in no case will anyone be able to ascertain individual responses in the preparation of the final instrument.

In addition to the instruction included on the enclosed questionnaire, please keep track of the time it takes you to complete the instrument and record it in the blank provided in Part II. When you have finished, return the completed questionnaire to us in the enclosed self-addressed envelope.

Should you have any questions regarding the study, please call Alexandria Manrov at 703 - 951-5812. Your prompt response is essential for the completion of this study. Thank you for your valued cooperation.

Sincerely,

A handwritten signature in cursive script that reads "James L. Hoerner".

James L. Hoerner  
Associate Professor  
Vocational and  
Technical Education

A handwritten signature in cursive script that reads "Alexandria Manrov".

Alexandria Manrov  
Graduate Research  
Assistant  
Vocational and  
Technical Education

Enclosures



APPENDIX I

Cover Letter to Sample •



COLLEGE OF EDUCATION  
 VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL & TECHNICAL EDUCATION

Dear Occupational/Technical Educator:

As you may well be aware, there is a great concern about sex stereotyping and sex bias in vocational and technical education. In response to this concern, we are conducting a study which focuses on providing greater insight into the identification of basic beliefs regarding sex bias. In order to make this a meaningful study, we would like to have your cooperation in completing a brief questionnaire.

Your cooperation in completing the questionnaire will take a small amount of your time but will be of great importance to the success of the study. The average completion time, recorded during the pilot study, was 10 minutes. Please return the questionnaire within seven days; a self-addressed envelope has been included to assist you in this process.

We can assure you that all ratings will be held in strict confidence and that they will not be used for any purpose other than to supply data. Results will not be released to any person or agency, and the names of individuals involved will not be used in the study. Code numbers on questionnaires are present only for purposes of follow-up on non-respondents.

We look forward to an early return of your questionnaire. Thank you for your cooperation and assistance in this matter.

Sincerely,

James L. Hoerner  
 Associate Professor  
 Vocational and  
 Technical Education

Alexsandria Manrov  
 Graduate Research  
 Assistant  
 Vocational and  
 Technical Education

Enclosures

APPENDIX J

Sex Bias Scale: Form A

## BASIC BELIEFS REGARDING SEX BIAS

RATING QUESTIONNAIRE  
FORM A

PART I

Return by October 24 , 1978Directions for Completion of the  
Respondent Information Section

Please complete each question by either providing a written response or by checking the appropriate number.

1. Sex (Circle one)

- A. Male  
B. Female

2. Age: \_\_\_ years

3. Total years of teaching experience as an occupational educator, community college level and otherwise. \_\_\_ years

4. Indicate the occupational program area in which you teach.

5. List the occupational course(s) within the program you are teaching and indicate the number of male and female students in each.

- A. \_\_\_\_\_ male \_\_\_\_\_ female  
B. \_\_\_\_\_ male \_\_\_\_\_ female  
C. \_\_\_\_\_ male \_\_\_\_\_ female  
D. \_\_\_\_\_ male \_\_\_\_\_ female  
E. \_\_\_\_\_ male \_\_\_\_\_ female

6. Highest degree earned: (Circle one)

- |                            |                                 |
|----------------------------|---------------------------------|
| A. Less than Bachelor's    | E. Master's plus credits        |
| B. Bachelor's              | F. Specialist or CAGS           |
| C. Bachelor's plus credits | G. Doctorate (e.g. Ph.D., Ed.D) |
| D. Master's                |                                 |

7. Total years of occupational experience. \_\_\_ years

PART II: BASIC BELIEFS REGARDING SEX BIAS  
RATING QUESTIONNAIRE  
FORM A

Explanation of Statements

The statements included in this questionnaire pertain to basic beliefs regarding sex bias. Attempts have been made to cover the significant arrays of basic beliefs.

Directions

Indicate your extent of agreement or disagreement with each statement by placing a check to the left of one of the possible responses. Remember, there are no right or wrong answers; select the answer which is most appropriate for you.

PLEASE RESPOND TO EVERY ITEM

Copyright by Alexandria Manrov and James L. Hoerner  
June, 1978

Part II - Form A  
Rating Questionnaire

NOTE: For purposes of this questionnaire, "students" refer to community college students only.

1. In most jobs, a man can do everything that a woman can do.
  1. Agree
  2. Disagree, men perform better on most jobs than women
  3. Disagree, women perform better on most jobs than men
2. I would consider doing a job that isn't traditional for my sex.
  1. Agree/Tend to Agree
  2. Disagree/Tend to Disagree
3. Female students are on the average more mature than male students.
  1. Disagree, neither is more mature generally
  2. Disagree, male students are generally more mature
  3. Agree
4. Female students are generally more conscientious and more interested in getting good grades than male students.
  1. Disagree, both are about equally conscientious and interested
  2. Disagree, male students are generally more conscientious and interested
  3. Agree
5. Female students are better on the average in basic academic skills than male students.
  1. Disagree, both are about equally capable
  2. Disagree, male students are generally more capable
  3. Agree
6. Female students generally have less psychomotor abilities (motor skills) than male students.
  1. Disagree, both have equal psychomotor abilities generally
  2. Agree
  3. Disagree, female students generally have more abilities
7. Female students generally take constructive criticism better than male students.
  1. Disagree, both take criticism about equally well
  2. Disagree, male students generally take criticism better
  3. Agree

## Part II - Form A

8. Female students are generally more attentive in class than male students.
- 1. Disagree, both are about equally attentive
  - 2. Disagree, male students are generally more attentive
  - 3. Agree
9. Female students generally have a greater desire to learn than male students.
- 1. Disagree, neither have a greater desire generally
  - 2. Disagree, male students generally have a greater desire
  - 3. Agree
10. Female students are generally more capable of being high achievers in science and mathematics than male students.
- 1. Disagree, both are about equally capable of being high achievers
  - 2. Disagree, male students are generally more capable of being high achievers
  - 3. Agree
11. Female students are generally more attentive to detail in listening to and carrying out directions than male students.
- 1. Disagree, both are about equally attentive
  - 2. Disagree, male students are generally more attentive
  - 3. Agree
12. Female students generally have greater verbal ability than male students.
- 1. Disagree, neither has more ability generally
  - 2. Disagree, male students generally have greater verbal ability
  - 3. Agree
13. Female students generally have greater visual-spatial ability (forming mental images of space) than male students.
- 1. Disagree, neither has more ability generally
  - 2. Disagree, male students generally have greater ability
  - 3. Agree
14. Female students are generally more capable than male students at rote learning (memorization) and simple repetitive tasks.
- 1. Disagree, both are about equally capable
  - 2. Disagree, male students are generally more capable
  - 3. Agree

## Part II - Form A

15. Female students are generally less capable than male students at tasks that require high level cognitive thinking.
1. Disagree, both are about equally capable  
 2. Agree  
 3. Disagree, female students are generally more capable
16. Female students are generally less "analytic" than male students.
1. Disagree, neither are more analytic generally  
 2. Agree  
 3. Disagree, female students are generally more analytic
17. "Safety hazards" generally increase in laboratory sessions or in shop areas when classes are coed.
1. Disagree  
 2. Agree, due mainly to the presence of females  
 3. Agree, due mainly to the presence of males
18. Female students generally present fewer discipline problems than male students.
1. Disagree, neither present more discipline problems  
 2. Disagree, female students generally present more problems  
 3. Agree
19. Female role models should be provided in such occupational education areas as trade, industry and technology.
1. Agree/Tend to Agree  
 2. Disagree/Tend to Disagree
20. Male role models should be provided in such occupational education areas as nursing, home economics, and secretarial science.
1. Agree/Tend to Agree  
 2. Disagree/Tend to Disagree
21. All classes must be open to both sexes.
1. Agree/Tend to Agree  
 2. Disagree/Tend to Disagree
22. Males and females should be motivated equally toward leadership positions and job goals that lead to the highest levels of responsibility.
1. Agree  
 2. Disagree, males should be motivated more so than females  
 3. Disagree, females should be motivated more so than males



## Part II - Form A

23. It is generally more important for female students to receive scholarships than it is for male students.
- 1. Disagree, it is about equally important for both males and females to receive scholarships
  - 2. Disagree, it is generally more important for male students
  - 3. Agree
24. Problems associated with sex roles and sex stereotyping should be discussed in class.
- 1. Agree/Tend to Agree
  - 2. Disagree/Tend to Disagree
25. Classroom materials should present men in a variety of roles, including child-care, cooking, secretaries, elementary school teachers, telephone operators and clerks.
- 1. Agree/Tend to Agree
  - 2. Disagree/Tend to Disagree
26. Male students should be encouraged to enroll in such courses as home economics, nursing and secretarial science.
- 1. Agree/Tend to Agree
  - 2. Disagree/Tend to Disagree
27. Female students should be encouraged to enroll in such courses as automotive, electronics and drafting technologies.
- 1. Agree/Tend to Agree
  - 2. Disagree/Tend to Disagree
28. Textbooks and other instructional materials should be examined prior to purchase and use to insure that they are not biased toward either the male or female sex.
- 1. Agree/Tend to Agree
  - 2. Disagree/Tend to Disagree
29. Compassion, consideration and tenderness should be emphasized more for females than males.
- 1. Disagree/Tend to Disagree
  - 2. Agree/Tend to Agree
30. Assertiveness, risk-taking, and strength should be emphasized more for males than females.
- 1. Disagree/Tend to Disagree
  - 2. Agree/Tend to Agree

APPENDIX K

Sex Bias Scale: Form B

## BASIC BELIEFS REGARDING SEX BIAS

RATING QUESTIONNAIRE  
FORM B

PART I

Return by October 24, 1978Directions for Completion of the  
Respondent Information Section

Please complete each question by either providing a written response or by checking the appropriate number.

1. Sex (Circle one)
  - A. Male
  - B. Female
  
2. Age: \_\_\_\_\_ years
  
3. Total years of teaching experience as an occupational educator, community college level and otherwise. \_\_\_\_\_ years
  
4. Indicate the occupational program area in which you teach.
 

---
  
5. List the occupational course(s) within the program you are teaching and indicate the number of male and female students in each.
 

A. _____	_____ male	_____ female
B. _____	_____ male	_____ female
C. _____	_____ male	_____ female
D. _____	_____ male	_____ female
E. _____	_____ male	_____ female
  
6. Highest degree earned: (Circle one)
 

A. Less than Bachelor's	E. Master's plus credits
B. Bachelor's	F. Specialist or CAGS
C. Bachelor's plus credits	G. Doctorate (e.g. Ph.D., Ed.D)
D. Master's	
  
7. Total years of occupational experience. \_\_\_\_\_ years

PART II: BASIC BELIEFS REGARDING SEX BIAS

RATING QUESTIONNAIRE

FORM B

Explanation of Statements

The statements included in this questionnaire pertain to basic beliefs regarding sex bias. Attempts have been made to cover the significant arrays of basic beliefs.

Directions

Indicate your extent of agreement or disagreement with each statement by placing a check to the left of one of the possible responses. Remember, there are no right or wrong answers; select the answer which is most appropriate for you.

PLEASE RESPOND TO EVERY ITEM

Copyright by Alexandria Manrov and James L. Hoerner

June, 1978

Part II - Form B  
Rating Questionnaire

NOTE: For purposes of this questionnaire, "students" refer to community college students only.

1. In most jobs, a woman can do everything that a man can do.
  1. Agree
  2. Disagree, women perform better on most jobs than men
  3. Disagree, men perform better on most jobs than women
  
2. I would consider doing a job that isn't traditional for my sex.
  1. Agree/Tend to Agree
  2. Disagree/Tend to Disagree
  
3. Male students are on the average more mature than female students.
  1. Disagree, neither is more mature generally
  2. Disagree, female students are generally more mature
  3. Agree
  
4. Male students are generally more conscientious and more interested in getting good grades than female students.
  1. Disagree, both are about equally conscientious and interested
  2. Disagree, female students are generally more conscientious and interested
  3. Agree
  
5. Male students are better on the average in basic academic skills than female students.
  1. Disagree, both are about equally capable
  2. Disagree, female students are generally more capable
  3. Agree
  
6. Male students generally have less psychomotor abilities (motor skills) than female students.
  1. Disagree, both have equal psychomotor abilities generally
  2. Agree
  3. Disagree, male students generally have more abilities
  
7. Male students generally take constructive criticism better than female students.
  1. Disagree, both take criticism about equally well
  2. Disagree, female students generally take criticism better
  3. Agree

## Part II - Form B

8. Male students are generally more attentive in class than female students.
- 1. Disagree, both are about equally attentive
  - 2. Disagree, female students are generally more attentive
  - 3. Agree
9. Male students generally have a greater desire to learn than female students.
- 1. Disagree, neither have a greater desire generally
  - 2. Disagree, female students generally have a greater desire
  - 3. Agree
10. Male students are generally more capable of being high achievers in science and mathematics than female students.
- 1. Disagree, both are about equally capable of being high achievers
  - 2. Disagree, female students are generally more capable of being high achievers
  - 3. Agree
11. Male students are generally more attentive to detail in listening to and carrying out directions than female students.
- 1. Disagree, both are about equally attentive
  - 2. Disagree, female students are generally more attentive
  - 3. Agree
12. Male students generally have greater verbal ability than female students.
- 1. Disagree, neither has more ability generally
  - 2. Disagree, female students generally have greater verbal ability
  - 3. Agree
13. Male students generally have greater visual-spatial ability (forming mental images of space) than female students.
- 1. Disagree, neither has more ability generally
  - 2. Disagree, female students generally have greater ability
  - 3. Agree
14. Male students are generally more capable than female students at rote learning (memorization) and simple repetitive tasks.
- 1. Disagree, both are about equally capable
  - 2. Disagree, female students are generally more capable
  - 3. Agree

## Part II - Form B

15. Male students are generally less capable than female students at tasks that require high level cognitive thinking.
1. Disagree, both are about equally capable  
 2. Agree  
 3. Disagree, male students are generally more capable
16. Male students are generally less "analytic" than female students.
1. Disagree, neither are more analytic generally  
 2. Agree  
 3. Disagree, male students are generally more analytic
17. "Safety hazards" generally increase in laboratory sessions or in shop areas when classes are coed.
1. Disagree  
 2. Agree, due mainly to the presence of males  
 3. Agree, due mainly to the presence of females
18. Male students generally present fewer discipline problems than female students.
1. Disagree, neither present more discipline problems  
 2. Disagree, male students generally present more problems  
 3. Agree
19. Female role models should be provided in such occupational education areas as trade, industry, and technology.
1. Agree/Tend to Agree  
 2. Disagree/Tend to Disagree
20. Male role models should be provided in such occupational education areas as nursing, home economics, and secretarial science.
1. Agree/Tend to Agree  
 2. Disagree/Tend to Disagree
21. All classes must be open to both sexes.
1. Agree/Tend to Agree  
 2. Disagree/Tend to Disagree
22. Males and females should be motivated equally toward leadership positions and job goals that lead to the highest levels of responsibility.
1. Agree  
 2. Disagree, females should be motivated more so than males  
 3. Disagree, males should be motivated more so than females

## Part II - Form B

23. It is generally more important for male students to receive scholarships than it is for female students.
1. Disagree, it is about equally important for both males and females to receive scholarships
2. Disagree, it is generally more important for female students
3. Agree
24. Problems associated with sex roles and sex stereotyping should be discussed in class.
1. Agree/Tend to Agree
2. Disagree/Tend to Disagree
25. Classroom materials should present men in a variety of roles, including child-care, cooking, secretaries, elementary school teachers, telephone operators and clerks.
1. Agree/Tend to Agree
2. Disagree/Tend to Disagree
26. Male students should be encouraged to enroll in such courses as home economics, nursing and secretarial science.
1. Agree/Tend to Agree
2. Disagree/Tend to Disagree
27. Female students should be encouraged to enroll in such courses as automotive, electronics and drafting technologies.
1. Agree/Tend to Agree
2. Disagree/Tend to Disagree
28. Textbooks and other instructional materials should be examined prior to purchase and use to insure that they are not biased toward either the male or female sex.
1. Agree/Tend to Agree
2. Disagree/Tend to Disagree
29. Compassion, consideration and tenderness should be emphasized more for females than males.
1. Disagree/Tend to Disagree
2. Agree/Tend to Agree
30. Assertiveness, risk-taking, and strength should be emphasized more for males than females.
1. Disagree/Tend to Disagree
2. Agree/Tend to Agree



APPENDIX L

Follow-Up Letter to Sample



COLLEGE OF EDUCATION

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY

Blacksburg, Virginia 24061

DIVISION OF VOCATIONAL & TECHNICAL EDUCATION

Dear Occupational/Technical Educator:

Approximately three weeks ago you received a questionnaire which was designed to provide greater insight into the identification of basic beliefs regarding sex bias. Your response to the questionnaire is needed for this study to be successful.

Knowing that you may have been busy at the time, I am enclosing another copy of the questionnaire for your consideration. All information will remain confidential and only appear as grouped data.

Your opinion concerning basic beliefs regarding sex bias is the focus of this study; so please, won't you take a few minutes of your time to assist in this study. Again, let me thank you for your help.

Sincerely,

A handwritten signature in cursive script that reads "James L. Hoerner".

James L. Hoerner  
Associate Professor  
Vocational and  
Technical Education

A handwritten signature in cursive script that reads "Alexandria Manrov".

Alexandria Manrov  
Graduate Research  
Assistant  
Vocational and  
Technical Education

Enclosures

## VITA

Alexsandria Manrov was born in Norfolk, Virginia, on May 23, 1943. She attended public school in Norfolk and graduated from Granby High School in June, 1961. While attending high school, she worked during the summers as a laboratory assistant for Leigh Memorial Hospital in Norfolk, and as a medical laboratory assistant for Doctors Theodore and Reba Bliss, general practitioners in Norfolk.

Upon graduation from high school, she attended Old Dominion University, in September, 1961, and graduated in June, 1965, with a Bachelor of Science Degree in Biology. While attending Old Dominion University, she maintained parttime positions as Biology laboratory assistant for Dr. Paul J. Homsher and Dr. John Marshall, and as a receptionist and general typist for Allstate Leasing Corporation in Norfolk.

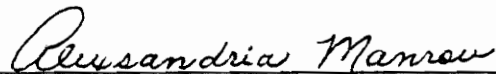
From September, 1965 to June, 1966, she attended graduate school in Biology at the College of William and Mary, Williamsburg, Virginia. During this period, she also maintained a parttime position as Biology laboratory assistant.

In July of 1966, she accepted the position of Research Geneticist for Dr. A. Ray Goodwin, Pathologist at DePaul Hospital in Norfolk. She maintained this position until August, 1968.

In August of 1969, she received her Master of Science in Education degree from Old Dominion University and accepted a position in the Portsmouth City School System for the 1969-1970 school year as a Biology teacher at Woodrow Wilson High School. From September, 1970, to June, 1977, she maintained the position of Biology teacher and chairperson of the Science Department and the Medical Technology Program at I. C. Norcom High School.

In June of 1977, she left the Portsmouth City School System to complete her studies for the Doctor of Education degree (Vocational and Technical Education) from Virginia Polytechnic Institute and State University. While attending VPI & SU, she worked as a graduate research assistant for Dr. Donald E. Elson, Dr. J. Dale Oliver, and Dr. Robert L. McGough in the Division of Vocational and Technical Education.

Her professional affiliations include: American Vocational Association, Vocational Education Association, American Technical Education Association, National Association for the Advancement of Black Americans in Vocational Education, Phi Delta Kappa, Phi Kappa Phi honor society, National Association of Industrial and Technical Teacher Educators, and the American Educational Research Association.



Aleksandria Manrov

BASIC BELIEFS REGARDING SEX BIAS AMONG POSTSECONDARY  
OCCUPATIONAL EDUCATORS IN REGION THREE

by

Alexsandria Manrov

(ABSTRACT)

The central problem of this study was to identify and compare the basic sex bias beliefs of (1) male and female postsecondary occupational educators; (2) postsecondary occupational educators teaching in male-oriented, nonsex-oriented, and female-oriented programs; and (3) postsecondary occupational educators teaching in small, medium, and large campuses. A secondary problem was to determine (1) if there was a relationship between the biographical variables (sex, age, educational level [highest degree earned], years of teaching experience, and years of occupational experience) and the identified basic sex bias beliefs of postsecondary occupational educators; and (2) if there were differences in the identified basic sex bias beliefs of postsecondary occupational educators who teach in programs of varying sex orientation (male-oriented, nonsex-oriented, and female-oriented) and who teach in campuses of varying sizes (small, medium, and large).

The research procedures used in this study consisted of five steps. These steps were: (1) reviewing the literature for

basic sex bias beliefs; (2) developing, validating, and pilot testing the instrument; (3) collecting data; (4) analyzing the data; and (5) interpreting and reporting the data.

The instrument used to collect data was developed in a scale format by the researcher, and contains a total of 30 items. Eleven of these items measure general sex bias and 19 measure same sex bias/opposite sex bias.

A random sample of postsecondary occupational educators (417) from USOE Region Three (Delaware, Maryland, Pennsylvania, Virginia, West Virginia, and the District of Columbia) were potential respondents in this study. The analysis of data consisted of (1) descriptive statistics to provide a respondent profile; (2) descriptive statistics to identify and compare the basic beliefs; and (3) statistical tests of the research questions (Multivariate Analysis of Variance and Pearson correlations).

## RESULTS

A total of 264 usable instruments were completed and returned. This total represents a 63.31 percent rate of return.

Pearson product moment correlation coefficients were used to test the hypotheses which were concerned with the relationship of certain biographical variables with responses given by educators on the three sex bias scales. Significant correlations were found with (1) respondents' sex and their same sex bias and general sex bias scores; and (2) respondents' years of teaching and their general sex bias and opposite sex bias scores. Correlations with

age, educational level and years of occupational experience and sex bias scores were non-significant. MANOVA was performed to determine if differences existed between sex bias scores and the educator subgroups with respect to campus size and programs of varying sex orientation. The results of the MANOVA indicated no difference existed among the groups. It was noted that a significant difference occurred when the educators were compared on the basis of sex.

### CONCLUSIONS

Sex bias exists among male and female postsecondary occupational educators. The sex of postsecondary occupational educators has an effect upon their same sex bias and general sex bias beliefs. Males tended to show more sex bias than the female postsecondary occupational educators. Also, the greater the years of teaching experience, the greater the opposite sex bias and general sex bias among postsecondary occupational educators. General sex bias indicates the reluctance of postsecondary occupational educators to accept coeducational classes in occupational programs and to support strategies to eliminate sex stereotyping in the classroom. Same sex/opposite sex bias indicates the tendency among postsecondary occupational educators to cling to their sex stereotypic notions of male and female students' school-related abilities. Poor self image tended to be held by female postsecondary occupational educators, while the tendency toward competitiveness seems to be exemplified among male postsecondary occupational educators.

The following contributions may be gleaned from this study:

- (1) basic sex bias beliefs of postsecondary occupational educators were identified, as well as the directional nature of their beliefs;
- (2) evidence of factors which influence sex bias was provided; and
- (3) an instrument (Sex Bias Scale) was developed with possibilities of becoming a meaningful tool for measuring same sex bias, opposite sex bias, and general sex bias.

#### RECOMMENDATIONS

If sex equity programs (preservice and inservice) and workshops are to be conducted for postsecondary occupational educators, it is recommended that attention be given to techniques, materials, and activities which would (1) raise the females' self image and encourage more cooperativeness than competitiveness among males; (2) disprove sex stereotypic myths concerning the school-related abilities of students; (3) help educators understand sex bias and its damaging effects upon male and female students, and facilitate their support of classroom strategies to eliminate sex stereotyping; and (4) provide opportunities for the community to become more aware of sex bias, to develop an understanding of its damaging effects upon males and females, and to understand the need to develop strategies to eliminate sex bias.

The Sex Bias Scale has shown to have possibilities of being a useful instrument for measuring sex bias. Thus, it is recommended that the Sex Bias Scale be used extensively by others in order to further validate this instrument.