The effects of role modeling as a technique in counteracting sexual stereotyping in the occupational election of high school girls

Nancy Eddins Helms
College of William & Mary - School of Education

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THE EFFECTS OF ROLE MODELING AS A TECHNIQUE IN
COUNTERACTING SEXUAL STEREOTYPING IN
THE OCCUPATIONAL SELECTION OF
HIGH SCHOOL GIRLS

A Dissertation
Presented to
The Faculty of the School of Education
The College of William and Mary in Virginia

In Partial Fulfillment
Of the Requirements for the Degree
Doctor of Education

by
Nancy Eddins Helms
July 1982
THE EFFECTS OF ROLE MODELING AS A TECHNIQUE IN
COUNTERACTING SEXUAL STEREOTYPING IN
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by
Nancy Eddins Helms

Approved July 1982 by

Kevin Geoffroy, Ed.D.
Charles O. Matthews II, Ph.D.
Fred L. Adair, Ph.D., Chairman
Dedication

I dedicate this work to my family - my mother, Pearl, whose love, encouragement, and support have been constant and my husband, Bill, and sons, Kyle and Craig, for their tremendous patience.
Acknowledgments

Without the assistance of some very key individuals, this project would not have been possible. My sincere gratitude and appreciation to: the members of my Committee, Dr. Fred L. Adair, Dr. Kevin Geoffroy and Dr. Charles Matthews; the role models and classroom teacher involved; the Newport News Public School System; and expert statisticians, Steve Devan and David Reed.
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Chapter 1
Introduction

The selection of an occupation is a highly prized freedom in American society which has for the most part been denied to women (Osipow, 1973). With few exceptions, the myth that some occupations are appropriate for men and others are appropriate for women has been reinforced from childhood and greatly influences the options of both sexes (Looft, 1971; Kirchner and Vondracek, 1973; Schlassberg and Goodman, 1972). The role of women in American society has traditionally centered around the nurturance of children and the support of the breadwinner. Therefore, the role of homemaker has been most stressed and most highly modeled for girls. These nurturant tendencies have seemingly led girls into occupations of nursing and teaching which place heavy emphasis on these characteristics (Zytowski, 1969).

Need for the Study

Stereotyping of jobs by sex has a restricting effect on both sexes, but it has had a disproportionately negative impact on women. Women are found in fewer occupations than men, 63 to 17, and these are lower paying ones (Steiger and Schlesinger, 1979).

The rising level of women who are heads of families indicates a strong need for girls to receive training in the fields which will provide them with wages as high as that of men (Monthly Labor Review, 1976). Although there has been an increase of women in the work force from 29.6 percent in 1950 to 41 percent in 1977, the pattern of occupational selection has not changed (U. S. Department of Labor, 1977).
This study proposed to deal with a strategy advocated by the National Center for Research in Vocational Education - that of using role models in nontraditional occupations to speak with students to counteract the limitations created by sexual stereotyping in occupational selection (Steiger and Schlesinger, 1979). It was designed specifically to determine if using female role models in nontraditional careers for women will affect the choice of high school girls in selecting these occupations for themselves.

**Barriers to Female Occupational Selection**

Previously held thoughts concerning sex differences in males and females have had a strong influence on the development of occupational sex segregation. Feelings that there are differences in men and women prohibit certain job activities for women. Studies have shown that children select sex role stereotypes early and view some vocational choices as being masculine and some as feminine and they fit their choices to match these feelings (Clark, 1967; Hewitt, 1975; Siegel, 1973; Tremaine and Schau, 1979). The choices of girls seem to be narrowed because they see many occupations as closed to them not because their interests are narrow, but because they do not see them as open (Beuf, 1974).

Macoby and Jacklin (1974) reviewed 1400 studies on sex differences and found several points to be relevant to vocational behavior. There are some sex differences which are indicated by research. Girls exhibit greater verbal skills than boys from about the age of 11 through high school. This superiority in girls extends to complex verbal operations.
On the other hand, boys exhibit greater abilities in spatial and mathematical skills and tend to be more aggressive than girls.

Some sex differences do not appear to be supported by research (Macoby and Jacklin, 1974). There is basically no difference in social orientation of either sex. Boys do seem to interact most effectively with larger groups while girls seem to prefer to interact with smaller groups. Self-esteem does not appear to be higher in either except during college years when girls seem to have less. Neither sex excels over the other at high levels of cognitive and analytical tasks except when visual spatial skills are involved. Furthermore, achievement motivation is fairly equal in both except with physical competitive motivation in which boys tend to excel. Girls tend to excel when neutral stimuli is present.

Other areas in which sex differences are questioned but not presently determined by evidence are activity level, dominance, and compliance (Macoby and Jacklin, 1974). Boys seem to exhibit the first two but only under certain conditions and not in all studies. Compliance seems to be based more on situations: girls seem more compliant to adults and boys to peers. Evidence does not support the widely held view that women should not or cannot perform certain job activities.

Concerning the development of sex differences, Macoby and Jacklin (1974) report only two which seem to be biologically based. One is aggression. More aggressive males tend to have higher levels of the male hormone, androgen. They refute the social learning theories that methods of reinforcement determine aggression in both sexes. The second difference is visual spatial superiority of boys which seems partially
determined by a sex-linked recessive gene. Twice as many men as women are affected by it. However, practice and reinforcement are involved in its development.

Harmon (1979) pursues the importance of learning in the development of sex differences by stating,

In every case of sex difference, some form of learning is important. Even in Kolhberg's approach, the rules deduced by the child depend to some extent on the surrounding social environment. Money and Ehrhardt (1972) have indicated that even children with genetic sex types opposite to their physical appearance can successfully develop a gender identity contrary to their genetic sex if they are treated early and consistently as a member of the desired but incorrect sex. Macoby and Jacklin (1974) have also reviewed other sex differences and sex roles that are presumably learned and the theories that explain how this learning occurs. Clearly, learning is important in developing sex-typed behavior. If it were not, we would have to assume that the sex stereotyping of occupations was somehow immutably foreordained and forego our interest in changing the situation through interventions in counseling women or in changing their environment (p. 5).

Other factors also contribute to the feeling women have which tend to lock them into certain occupational selections. Dualistic thinking which women have that they must choose either to be a homemaker or have a career inhibits the career planning of women (Harmon, 1979). This kind of thinking is not based on fact although the variety of conflicts and problems which arise where women seek to combine a professional career and a family life is widely recognized (Gray, 1980).
In addition, the lack of role models who work, and, especially in nontraditional areas, partly explains the dilemma women face as they identify strongly with role models of the same sex. The need for role models as an aide in the development of a vocational self-concept which is necessary in selecting appropriate occupations is recognized (Super, 1956).

Furthermore, schools as an instrument of society have reinforced the stereotyped ideas that certain jobs are not open to women. Counselors today, as in the past, continue to encourage girls to pursue the fields of teaching, clerical, and service jobs that previously were their only choices (Steiger and Schlesinger, 1979). Studies by Bingham and House (1973) and Hawley (1975) indicate that counselors are unaware themselves of up-to-date information about the increasing number of women in the work force, of discrimination against them and of the proportion of women who will work full time. Materials used in schools also support sexual stereotyping (Steffle, 1969; Weitzman and Rozzo, 1974) as do practices in the school (Sadker and Sadker, 1972; Saario, Jacklin and Tittle, 1973), and staffing patterns (Frazier and Sadker, 1973).

Giving even more credence to the practice has been political legislation which barred women from certain jobs and from equal pay. Until recently, this legislation has reinforced sexual stereotyping in occupations and made such discriminatory practices legal.

Changes Affecting Female Occupational Selection

Certain political legislation now provides the basis for change in the world of work for women. Title IX of the Education Amendments of
1972 prohibits discrimination on the basis of sex in educational institutions which receive federal funding. Discrimination based on sex is further prohibited in public positions and in private situations which have 15 or more employees by Title VII of the Civil Rights Act of 1964 and amended by the Equal Employment Opportunity Act of 1972. The same pay for an equal job is required by the Equal Pay Act of 1963 as amended also in the 1972 Education Acts. Further impetus legislatively is found in Title II of the Education Amendments of 1976. Being proactive in nature rather than reactive as in former legislation, Title II requires each state to develop programs in vocational education which will overcome sex discrimination and sex stereotyping (Steiger and Schlesinger, 1979). Employment opportunities are no longer closed to girls on the basis of sex.

The proportion of married women who work or are seeking work outside the home has more than doubled from 20 percent in 1947 to 43 percent in 1974 (U. S. Department of Labor, 1976). A dramatic change in the attitude of American society toward appropriate roles for women has taken place since World War II. At that time, a majority of adult Americans frowned on women in the labor market who had children (U. S. Department of Labor, 1976). Women employed outside the home now seem widely accepted.

There are many avenues presently open to schools which will promote sex equity. Programs are now being developed which will create awareness that materials are biased (Front and DIamond, 1979), and that the staffing and scheduling patterns of the school need changing (Kazalumas, 1979). Workshops are proposed by the National Center for
Vocational Research for increasing the knowledge of administrators, teachers, and counselors in order to facilitate more appropriate role models in the schools (Harmon, 1979). Information is now presented to girls which will assist in making them aware of the opportunities available and the need for considering these.

Further evidence of change is seen in the wide acceptance of social learning theories which substantiate the theory that occupational stereotyping has been learned and can thus be relearned. This is reflected in this study in the use of Bandura's observational learning theory as a basis for change in behavior (Bandura, 1971).

Theoretical Rationale

Role modeling has been significant as a method for perpetuating occupational stereotyping (Harmon, 1979). The strategy for this study proposed that role modeling is effective as a technique in counteracting sexual stereotyping in the occupational selection of high school girls. The underlying theory was based on Bandura's (1971) observational learning through role modeling. Bandura (p. 1) states, "It is evident from informal observation that human behavior is transmitted, whether deliberately or inadvertently, largely through exposure to social models." He states further that "much social learning occurs through casual or directed observations of performances by real-life models" (p. 41). In addition, "There is a large body of research evidence demonstrating that both children and adults acquire attitudes, emotional responses, and complex patterns of behavior through exposure to pictorially presented models" (p. 41).

Tumangday (1977, p. 3391) summarizes Bandura's general views on modeling as follows:
1. Behavior is learned by observing the behavior of other human beings.

2. Real-life models are the basic sources of modeling influences.

3. Modeling is a potent means of behavior transmission and modification.

4. Modeling involves different complex variables originating in the observer and the model.

5. Children's behavior results from an interaction of parental modeling and other models in the immediate environment.

6. Children are receptive and vulnerable to shaping influences in their environment.

7. Some human models are more imitated than others because of their position, competencies, and responsibilities.

8. People choose as models associates with similar values and conduct patterns to themselves.

9. Reference-group models are sources of attitudes and values which are imparted by example.

Bandura (1971) views the influence of modeling as mainly an informative function where observers react to symbolic representation of events rather than specific events. He proposes that learning takes place as a result of exposure to a model even though the observers do not perform any overt responses or receive any direct reinforcement during the acquisition period. This aspect of modeling is referred to as observational learning, and it is this aspect of modeling which this study specifically addresses.
Conditions recommended for observational learning through modeling (Bandura, 1971) to be most effective which were adhered to in the present study are:

1. The model must be attractive and distinctive so that the observer attends to, recognizes and distinguishes between the major features of the model's actions. A model who is high in prestige is more apt to be imitated than one of low prestige unless the model with high prestige is so far above the observer that the observer cannot relate.

2. The model must stimulate two representational systems - the imaginal and the verbal by consistent association with what is being modeled to assure retention until a future time.

3. The model will be more effective if the observer can observe the model's behavior but not the consequences of the behavior. In this way outside cues become very important but are also unpredictable since they may have some association with the observer's past experience which cannot be controlled. The model may remind the observer of someone in the past which could elicit responses not based solely on the present model.

4. The model must exhibit behavior which the observer feels capable of duplicating at some future time.

Modeling is a complex process which cannot be completely controlled but which seems to be a valuable technique which can be used to advantage in a high school setting. It appeared logical to assume that applying Bandura's theory in a high school setting in which specific
role models were presented for a specific purpose would produce a change in the behavior of those subjects who observed the role models.

Definition of Terms

Sexual Stereotyping

Sexual stereotyping is referred to as the assigning of roles or characteristics to people on the basis of sex. This is used almost interchangeably with the terms sexism and sex-typed.

Occupational Stereotyping

Occupational stereotyping is referred to as the assigning of occupations on the basis of sex.

Traditional Occupations

Traditional occupations are those occupations usually assigned to men or women almost exclusively.

Nontraditional Occupations

Nontraditional occupations are those occupations in which the opposite sex from the one being referred to usually is not found. They are also known as "pioneer" occupations when referring to girls.

Observational Learning through Modeling

Observational learning through modeling is referred to in this study as the learning which occurs through an individual's observing of the experience of others without direct reinforcement or any overt responses by the individual during the acquisition period (Bandura, 1971).

General Hypothesis

The purpose of this study was to investigate the effects of observational learning through modeling in the occupational selection of high school girls.
Hypothesis 1. Subjects who complete the modeling treatment will choose more nontraditional occupations for themselves from the occupational selection list than will subjects who receive only information without a model.

Hypothesis 2. Subjects who complete the modeling treatment will choose more brochures on nontraditional occupations than will subjects who receive only information.

Hypothesis 3. Subjects who complete the modeling treatment will indicate more nontraditional career goals on their educational and career planning card than will subjects who receive only information.

Hypothesis 4. Subjects who complete the modeling treatment will indicate more nontraditional interests on the COPS (Career Occupational Preference System) Interest Inventory than will subjects who receive only information.

Hypothesis 5. Subjects who complete the modeling treatment will indicate a difference in attitude toward the role models on the Attitude Assessment Scale than will those who receive information from the classroom teacher.

Sample and Data Gathering Procedures

The subjects for the study were high school girls in grades 10 - 12 who selected to take a course in Career Decision Making in a high school in Newport News, Virginia. The girls were randomly assigned to groups and the groups randomly assigned to the treatment. One group was designated as the experimental group and one the control group.

Data were gathered in the following manner:

1. A 120-item list of occupations taken from the JOB-O Interest Inventory was administered to both groups after the treatment. They
were asked to select three occupations from the list which they would choose for themselves. The occupations were classified as traditional or nontraditional by comparing them to research which categorizes traditional and nontraditional female occupations. Results became part of the statistical data.

2. After the treatment, both groups were asked to select from a display of brochures showing traditional and nontraditional occupations, three brochures which described occupations they would choose for themselves. These were recorded for each student and classified as traditional or nontraditional.

3. After treatment, both groups were asked to review and update an educational and career planning card. Career goals were recorded and classified as traditional or nontraditional.

4. The COPS Interest Inventory was administered to both groups. The top three interest areas for each student were recorded and classified as traditional or nontraditional.

5. The Attitude Assessment Scale was administered to both groups after treatment.

Data collected were then used in the statistical analysis.

Limitations

1. The population for the study was limited to those girls who chose to take the Career Decision Making classes during the 1981-1982 school year.

2. The generalizability of the study was limited due to the small number of participants and the selection of the sample.

3. Some limitations exist due to the type of instruments used. The Attitude Assessment Scale was developed by the researcher and the
reliability test on the Career and Educational Planning Card was low.

4. The design of the study and the statistical procedures created some limitations such as the power limitations on the statistic of choice. The Chi-square test is a nonparametric test. Nonparametric tests are not as powerful as parametric tests.

5. An Attitude Assessment Scale was devised and administered to both groups to determine the influence of feelings on the part of the subjects for the models and teacher involved.

Plan of Presentation

Material selected for this study was organized into five chapters. Chapter 1 has presented information relevant to the general understanding of the topic. Furthermore, it has described the theoretical framework from which the study was devised as well as defined terms, discussed limitations and stated the general research hypotheses.

Chapter 2 presents a review of related research. Chapter 3 examines the methods and procedures of this research. Included in this chapter are population, treatment, ethical considerations, instruments, design, statistical procedures and statistical hypotheses. An analysis of the data collected to test the hypotheses is provided in Chapter 4. A summary of the study and its conclusions, a discussion of the findings, implications and recommendations for further research are found in Chapter 5.
Chapter 2
Review of Literature

Chapter 2 surveys the major literature which related to the topic under investigation. This chapter is divided into three parts:

1. Summary of rationale and relationship to problem.
2. Summary of relevant research involving theoretical concepts, treatment procedures, population, and methods commonly used.

Summary of Rationale and Relationship to Problem

The occupational opportunities of girls have been limited in the past. As restrictions fall and numerous opportunities become available, methods must be found to encourage girls to avail themselves of these opportunities (Steiger and Schlesinger, 1979).

Vocational theorists, Super, Roe and Holland view vocational choice as a complex process and a reflection of the total personality (Osipow, 1973). Roe (1956) points out that career choices are made on the basis of conscious and unconscious needs and that parental influence and childhood experiences play an important part. Holland (1959) sees career choice as a reflection of deep psychological interests which lead a person to seek out things in his environment to meet these interests.

The complexity and enormity of vocational choice is clearly evident in Super's (1956) approximately eighty-five career pattern determinants organized under the major divisions of individual characteristics and experiences, individual's personal situation, individual's environment and nonpredictable factors.
Theorists (Osipow, 1973; Zytowski, 1969) recognize that there is presently no separate theory of vocational development for women. Most of their work and theorizing has been done with white, middle-class college men. That there is a need for a theory which will provide a framework for further understanding the place of occupational selections for women is widely accepted.

One of Super's (1956) propositions in describing the nature of vocational selection is particularly relevant.

There is reason for believing that identification with a role model of the same sex is related to satisfactory work in a society which places considerable emphasis upon proper sex differentiation (34, 46, 155). Desiring to play a socially approved role which has an adequate occupational equivalent and becoming established in an occupation in which one can play a desired role are essential aspects of job satisfaction. (p. 92)

The role of the parents is stressed, but all other role models are included as very influential in determining choice and satisfaction of an occupation. Although Super was primarily focusing on males, these factors are equally important in acting as occupational determinants for girls. Studies included point to this as an especially strong influence on girls selecting certain occupations and rejecting others.

There is considerable evidence to support the theory that modeling is a forceful factor in modifying behavior (Bandura, 1971; Tumangday, 1977; Smith and Lewis, 1972; Little and Roach, 1974; Nagle, 1976; Westcott, 1979; Matheny, Anderson and Blue, 1978; Thelen, Fry, Fehrenbach and Frautschi, 1979; Galluf, 1978).
The underlying theory of the strategy from which the study was derived is that of observational learning through modeling (Bandura, 1971). Bandura (p. 1) states, "It is evident from informal observation that human behavior is transmitted, whether deliberately or inadvertently, largely through exposure to social models." He further purposes that, "There is a large body of research evidence demonstrating that both children and adults acquire attitudes, emotional responses, and complex patterns of behavior through exposure to pictorially presented models" (p. 41). Observational learning through modeling is defined in this study as the learning which occurs through an individual's observing of the experience of others without direct reinforcement (Bandura, 1971).

In their work with aggression with children, Bandura and Walters, report that:

Children observed a film and mediated model who exhibited four novel aggressive responses accompanied by distinctive verbalizations. In one condition of the experiment, the model was severely punished, in a second, the model was generously rewarded with approval and food reinforcers; while the third condition presented no response-consequences to the model. During the acquisition period the children neither performed any overt responses nor received any direct reinforcement and, therefore, any learning that occurred was purely on an observational or vicarious basis.(pp. 57-58)

Results of this study showed that there were significantly fewer imitative responses in the groups where the model was punished, but no
significant differences between the imitative responses in the groups where the models were rewarded and those where no consequences were shown.

Another laboratory study by Bandura and Walters further substantiates the hypothesis that children tend to imitate the behavior of a model. They conducted a study in which two groups of frustrated children were used. In one group the children were exposed to models exhibiting aggressive behavior while the other group was exposed to non-aggressive models. These children were then exposed to subsequent frustration. Those who had viewed aggressive behavior responded likewise. Those who had viewed the non-aggressive model matched the behavior of that modeled (Bandura, 1971).

Another study conducted by Bandura and Ross to test the effectiveness of real-life models and film models resulted in the statement that they were equally effective.

A relevant study concerning the use of role models in addition to those by Bandura and Walters is one by Smith and Lewis (1972) conducted with college students. They studied the effect of videotaped models on the communications of college students in counseling. Students who were required to see counselors were often hostile or superficial. The researchers were searching for a way of dealing with this resistance before the actual counseling session took place. Their theory base involved Bandura's vicarious or observational learning through models. Their sample consisted of students in the beginning counseling practicum as counselors and students who had to have the counseling as part of a required course as clients. The client group was randomly assigned
to five groups in order to achieve approximate pre-treatment equality of groups by ruling out systematic bias (Kerlinger, 1973). The videotaped model ranged from counseling, reluctance then counseling, to reluctance only. Two control groups, one placebo and one which received no treatment rounded out the five groups. The videotape was shown to clients immediately prior to the counseling session so history and maturation were not a factor. Other concerns in internal validity such as testing and instrumentation were controlled by use of one testing session and the use of two samples from the same testing period (Campbell and Stanley, 1963). Two samples of behavior in the actual interview were used. The samples were coded and placed in scrambled order for the raters who rated by means of the sequential analysis of verbal interaction according to Simon and Agazarian. A multivariate analysis of variance indicated a significant difference between groups. A one-way analysis of variance was performed to find where the significant difference between groups was. No significant differences were found between means of sample 1. Significant differences appeared in sample 2. A Scheffe comparisons indicated that using a peer model on videotape was effective in increasing communications during a required counseling session and that showing positive effects of counseling with no reluctance was most effective.

Little and Roach (1974) applied Bandura's theory on modeling to a study using videotapes of peer models accompanied by a male counselor, group I, a female counselor, group II, and no counselor, group III, in an effort to study the effects on the career choice in nontraditional occupations of 32 undergraduate female students randomly assigned to
the 3 groups. Holland's Vocational Preference Inventory, a job stereotype list, The Attitudes Toward Women Scale and a simulated career choice served as the dependent variable. Significant differences were reported for Masculinity on the VPI and for Nontraditional Preferences using personal choice. Scheffe's method of multiple contrasts was used to compare the groups. No significant difference was reported on the Masculinity variable between Group I and II. A significant difference ($p = .05$) was found when Group I was compared with Groups II and III. A trend toward significance ($p = .07$) was found between Groups I and III. On the Nontraditional Preferences variable significant differences were found ($p = .05$) when Group I was compared with Groups II and III combined. The group using a male counselor with the videotape presentation was significantly different. The author recognized that the male counselor's personality may have had an effect on the results which was not controlled and that the modeling requisites; attention, retention, motoric reproduction or motivational processes in each group described by Bandura may require a more thorough examination. The part that sex-role stereotyping plays is also a consideration. Although studies indicate a stronger influence of a same sex model, this may not be true in the case of nontraditional occupational selection of girls.

Goldstein (1975) also studied the effects of videotaped female career role models on the vocational attitudes of sophomore and junior female students using two methods of treatment. One treatment, group one, viewed four videotaped female interviews with no discussion or reinforcement; group two viewed the same interviews using group
discussion afterwards with reinforcement for positive responses. A control group received no treatment. Instruments serving as the dependent variable were the World of Work Scale (WOW) and verbal behavior. Posttests were given to all three groups. Significant results were reported for group two on the WOW Scale; significant differences were reported for groups one and two over the control group and indicated by verbal behavior that exposure to female career models increased the favorable statements about women and work.

Another use of role models is described by Cobble (1980) which involves the training of women in the nontraditional trades areas to serve as teachers and role models in the classroom in an effort to remove barriers and promote these trades as acceptable for selection by girls. Based on a pilot project at San Jose City College in which forty qualified tradeswomen were recruited to enroll in teacher training classes, the project resulted in a handbook for use in recruiting and training women in the nontraditional trades. A 90 percent completion rate was reported. The basic philosophy concerning the impact that women teachers in nontraditional areas can have on their students was not tested in the study. A follow up of these teachers and their female students could provide valuable information and make a significant contribution to vocational education and especially where it concerns females.

Nagle (1976) and Westcott (1979) report the effective use of teachers and filmed models as role models to increase the relevance of classroom tasks and classroom behavior. Matheny, Anderson and Blue (1978) studied twelfth graders as models to encourage improvement of
behavior in eighth graders. Using grade point average, Participation Index (PI), Self-concept of Academic Ability Scale, Rotter Internal-External Focus of Control Scale (I-E) and Survey of Study Habits and Attitudes as criterion measures, significant gains were indicated on the PI and I-E scales. Results again pointed to effective use of models.

The extensive use of videotape and film modeling in clinical settings with phobias, test anxiety, dental and medical stress and retarded individuals is supported further by Thelen, Fry, Fehrenbach and Frautschi (1979). Galluf (1978) also cites the work of Bandura and Walters in the area of modeling as a positive technique in clinical counseling.

The sex of the model has been the topic of many studies. Basow (1980) studied the influence of the sex of the role model with 122 undergraduates evenly divided by sex. That males and females have different patterns of influence was concluded. Females appeared to be more influenced by females. Weishaar (1981) found that a notable percentage of the females in her study were influenced more by females. This appeared especially true for females in traditional careers. Novakova (1975) in a study of adolescent models and ideals reported that males were more influenced by sports' models while females were more influenced by their families as models.

Robinson, Forehle and Kurpius (1979) report no significant differences when they studied the sex of the model and the media of the presentation of the model with counselor trainees and the increase of skill development.

The findings of Barkley, Ullman, Otto and Brecht (1977) from a study using 32 boys and 32 girls, ages 4 to 11 support earlier studies
that children imitate sex appropriate behavior in models more so than the models themselves.

Summary of Relevant Research

Theoretical Concepts

Modeling is recognized as a widely accepted technique in the process of learning and modifying behavior as evidenced by numerous studies. Bandura (1971) documents modeling effectiveness in experiments with children and adults. Lewis and Smith (1972) substantiate that vicarious or observational learning through modeling is effective in using videotaped models with college students. Little and Roach (1974) applied Bandura's theory on modeling to a study investigating the effects of videotapes of peer models accompanied by male and female models on the career choice in nontraditional occupations of college undergraduate female students. Another college study (Cobble, 1980) describes a strategy in which women are trained in nontraditional trades to serve as teachers and role models in the classroom to make trades more acceptable and attractive to girls.

Nagle (1976) and Westcott (1979) report modeling's successful use in the classroom setting dealing with tasks and behavior while Matheny, Anderson and Blue (1978) indicate its value in using twelfth graders to model behavior for eighth graders. Another investigation (Goldstein, 1975) examined the effects of videotaped female career role models on the vocational attitudes of sophomore and junior high school female students. On an elementary level, Ashby and Wittmaier (1978) used the technique of pictorial models in association with stories of women in traditional or nontraditional roles to study attitude changes in fourth
grade girls and found it to be influential in the selection by girls of nontraditional occupations as appropriate for females.

Modeling in clinical settings with phobias, test anxiety, dental and medical stress and retarded individuals is supported by Thelen, Fry, Fehrenbach and Frautschi (1979). Galluf (1978) cites the work of Bandura and Walters in the area of modeling as a positive technique in clinical counseling.

**Treatment Procedures**

Bandura (1971) used real-life models and filmed models in studies of aggression with children. One experiment used three models who portrayed three different conditions in an attempt to determine the part played by punishment, reinforcement and no consequences in the modeling process. Another study by Bandura and Walters used two groups of children and models to examine the responses of frustrated children when exposed to models who were showing aggressive and nonaggressive behavior.

Lewis and Smith (1972) used videotaped models with college students in an attempt to deal with hostility of students who were required to see counselors. Videotaped models ranged from one who portrayed a successful counseling session to one who exhibited reluctance then successful counseling, to the third who portrayed reluctance only. Two control groups were used—one a placebo and one which received no treatment. The videotape was shown immediately prior to the counseling session.

Nagle (1976) and Westcott (1979) used teachers and filmed models in the classroom to model desired classroom tasks and behavior for
students. Twelfth graders were used as models for eighth graders concerning improving of behavior in a study by Matheny, Anderson and Blue (1978). Sessions were conducted on a weekly basis for a semester during which the twelfth graders discussed appropriate behavior with the eighth graders.

Little and Roach (1974) used videotapes of peer models describing nontraditional occupations accompanied by a male counselor, a female counselor and no counselor to study the effects on the career choice in nontraditional occupations of 32 undergraduate female students. A question concerning the treatment not answered in the study was what did the accompanying counselors do and say as part of the treatment.

Goldstein (1975) also used videotaped female career role models to study the effects on the vocational attitudes of sophomore and junior female students. Two treatments were used; one viewed four videotaped female interviews with no discussion or reinforcement and the other viewed the same interviews using group discussion afterwards with reinforcement for positive responses. A control group received no treatment.

The treatment procedures of those studies identified involve real-life or videotaped models or combinations of the two who portray or discuss various behaviors or topics for the observers. In some of the studies there was a lack of thorough descriptions of the model's actions and words.

Population

Various populations have been used in modeling and occupational studies. Bandura (1971) used children from the Stanford University
Nursery School in many studies. This must be a rather select group and not representative of the world at large. Intact classrooms were used by Nagle (1976) and Westcott (1979).

Attempts were made to use volunteers when possible. Goldstein (1975) used sophomore and junior female high school volunteers as did Hollander and Parker (1969) who used high school sophomore volunteers.

College students often serve as populations because they are usually more accessible than most. Little and Roach (1974) used female college students as did Harmon (1971) and Smith and Lewis (1972). Those in the Smith and Lewis study were part of a required counseling course which sounds as though it could also be referred to as a self-selected group.

Selection of a population is an important factor in the generalizability of a study. Oftentimes, the selection of a sample is restricted by the institutional setting, and this must be considered. The population used in this study was a self-select group in that the subjects choose to take a certain course.

Methods Commonly Used

Bandura (1971) randomly assigned children to groups. He usually did not use a control group but assigned treatments to each group. After treatment, children were immediately placed in a position where their reactions to the models' performances were then observed and rated. Raters had no knowledge of treatment and rated all three groups of children according to predetermined expected responses. Bandura reports the use of a square root transformation on the means to make the data appropriate for using an analysis of variance as the statistic of choice.
In another study (Smith and Lewis, 1972), the population was randomly assigned to five groups. Three groups received treatment and two were used as control groups. After treatment, students were involved in a counseling session. The sessions were audio-taped and the first and last five minutes were used as samples. Each sample was coded and scrambled to prevent raters from identifying them. The samples were rated by means of the sequential analysis of verbal interaction to determine the proportion of client responses classified as avoiding communication. A multivariate analysis of variance was completed on the samples and revealed a significant difference existed. A one-way analysis of variance and a Scheffe comparisons were used to determine where significant differences were located.

A modeling study by Matheny, Anderson and Blue (1978) employs a different set of criterion measures. Measuring the effectiveness of modeling of twelfth graders with eighth graders, they used grade point average along with paper and pencil instruments such as Participation Index, Self-concept of Academic Ability Scale, the Rotter Internal-External Focus of Control Scale and a Survey of Study Habits and Attitudes.

Goldstein (1975) used female high school volunteers and assigned them randomly to the three groups involved—two treatment groups and one control group. Two instruments for measuring effectiveness of the treatments were used in a posttest-only control group design. One was the World of Work Scale and the other was a verbal analysis of behavior recorded by audiotape in posttest group discussions.
Little and Roach (1974) provide another example of a modeling study in which 32 undergraduate female students were randomly assigned to three groups which received some kind of treatment. Measurements used were Holland's Vocational Preference Inventory, a job stereotype list designed by the researcher, The Attitude Toward Women Scale and a simulated career choice. Scheffe's method of multiple contrasts was used to compare the groups.

Most of the studies reviewed appear to follow a variation of the posttest-only control group design which Kerlinger (1973) describes as one of the most widely accepted and underused true experimental designs. Randomization of subjects to groups and groups to treatment provide the best method for achieving pretreatment equality of groups by ruling out systematic bias (Kerlinger, 1973).

Summary of Research and Relationship to Problem

Early studies made by Manson and Strong provide the basis for research by Harmon and Campbell (1967) and are representative of the first occupational studies which included females. Manson attempted to differentiate between the interest of nonprofessional groups of women such as secretaries and salesladies and concluded that the existing interest scales were not sufficiently discriminating. Strong felt that these groups of nonprofessional women were too heterogeneous to be able to differentiate between. Harmon and Campbell (1967) then attempted to measure the differences in vocational interests between stewardesses and dental assistants.

They used a modified version of the Women's Strong Vocational Interest Blank (SVIB) with a sample of 440 airline stewardesses and
417 dental assistants. Only the forms from those expressing satisfaction with their jobs were used in the final analysis. Scores of those used were compared with the SVIB scales which were constructed by comparing the answers of a certain occupational group with those of Women-in-General (W-I-G) on a percentage basis. A 15-20 percent difference had to be found in order for a response to count. Campbell's occupational groups were primarily made up of professional women while the earlier one by Manson had consisted of housewives. Therefore, neither of these were sufficient for an adequate comparison. Tilton's overlap was used statistically to measure the percentage of matching scores. Results of this study showed that it is possible to differentiate according to interests between vocational groups as well as between these groups and Women-in-General. Recommendations by the author recognize the need for more technical development statistically in the comparison of the groups involved.

Rezler (1967) surveyed the existing literature in an attempt to answer the question: "What are the characteristics of the 'Pioneers' - those who chose nontraditional occupations - high school junior and senior girls who wish to be physicians, mathematicians, or natural scientists? Can they be differentiated from the 'Traditionals' - girls who wish to be nurses or elementary teachers - on measures of intelligence, achievement, interest, and personality?" Results support the idea that "pioneers" are significantly higher on academic aptitudes, achievement, intellectual, and masculine personalities, scientific and computational interests. Implications for counselors stress the opinion that girls seeking "pioneer" vocations need more than just occupational
information. They need help in fighting their own fears and developing self-concepts more in line with their vocational interests. Without such help, many of these "pioneer" girls will never realize their potential but will turn to more traditional occupations.

In a study by Benn (1979) a comparison was made of 87 mothers and their adolescent daughters' career choices. Two matched questionnaires consisting of sentence completion stems, a Likert scale and a yes-no checklist were used. Findings indicate that:

1. Mothers believe that daughters should continue to concentrate on being good homemakers and that women are too career conscious. A significant difference was found between mothers and daughters on this item.

2. Mothers and daughters know much less about occupations normally held by men (engineering and management) than about those held by women (clerical and health).

3. 76.1% of the girls continued to select traditional occupations. Only 9.9% of the girls chose occupations dominated by men or levels of management usually held by men.

4. Only 14 of 83 girls stated that their mothers had an influence on their career choice.

5. Only 10 of the 87 mothers ever suggested that their daughters enroll in a vocational education program, and

6. There was no significant relationship found between the occupational status of the mothers and preferences indicated by the daughters.

Statistical procedures were not explained in the study. The study supports much of the other literature included concerning the attitude of females with regard to occupational stereotyping.
Astin (1968) using a sample of 7,061 girls from the Project TALENT Data Bank reports an instability in career choice of secondary students between grade 9 and one year after high school. Most of the instability seems to be found in the choice of careers which are not traditional for girls. Girls who chose the most popular female occupations show greater stability during this period. Girls' choices become more realistic as maturity and self-awareness increase. As would be expected, girls with higher intellectual capacities tend to raise their occupational aspirations over time whereas those less capable tend to lower their aspirations.

Fottler and Bain (1980) attempted to compare females and males who choose managerial careers. This is referred to as nontraditional for girls. Surveying students in 14 representative high schools in Alabama, a final sample of 2112 was used. Students were asked to respond by naming the occupation in which they were most interested. They were broken down into eight categories for comparison. Occupational aspirations was the dependent variable and sex was the primary independent variable. Other variables including race, father's occupation, socio-economic status, school location and counseling factors were examined. Discrimination to determine those who aspire to a managerial career and those who do not was made by use of multiple discriminant analysis. Results show that few females aspire to managerial positions. This reinforces previous studies which indicate that high school girls continue to select sex-typed occupational choices. Many reasons may account for this. Societal values and background tend to be given most often. Although many of the external barriers to girls' choosing nontraditional careers have been lowered, internal barriers within society and the females themselves
continue to have a strong influence on their occupational choices. Socioeconomic status and geographic locations were important variables in differentiating between males who chose managerial careers and those who did not, but no such differentiations were shown with females.

In a study by Fortner (1970) the predictability of vocational choices of high school girls was investigated. Combining Holland's theory that occupational level equals intelligence plus self evaluation with Stockin's recommendation that parental occupational level be added, Fortner designed a study to test these as predictors of vocational choice for girls.

Four hundred high school junior and senior girls were used from different schools. Through use of analysis of variance and Chi-square procedures, the homogeneity of the sample was tested. Tests revealed that there were no significant differences between the groups on the variables so the data was used and treated as a single sample.

The I. Q. of each girl was obtained from school records and the Sims SCI Occupational Rating Scale was given to each girl in order to determine the social class. Using Roe's Occupational Classification System with the occupation of the parent and the reported preference of each girl, four levels were created from Roe's original six. The four levels consisted of 1) Professional and Managerial, 2) Semi-professional and small business, 3) Skilled and 4) Semi-skilled and Unskilled. The combination of the three variables showed the highest predictors on a percentage basis with 41%; however, the variable I. Q. produced 40% of the predictability on a percentage basis. Contrary to no difference between predictors shown when Chi-square and a coefficient of
contingency C was used. Girls chose categories 1 and 3 most often. This did not necessarily match the level of their ability and many chose occupations above those of their parents and perhaps above their own capabilities to perform such jobs. Results of the study, percentage wise, indicated that I. Q. could be used effectively as a predictor of occupational choice.

Fortner compared the occupational preference of the girls with that of the boys in Stockin's study and found a significant difference between the levels of the two. While the girls chose levels 1 and 3 most, the boys chose 2 and 4, leading her to conclude that the two groups needed to be counseled in different ways. It is probable that the girls may have had more unrealistic ideas about occupational selection based on lack of information than the boys. Also the I. Q. and social class of the boys may have differed significantly. Fortner did not reveal how similar the boys and girls were.

Hollander and Parker (1969) studied occupational stereotypes and needs as they relate to vocational choice. They base their study on the idea that stereotypes in occupations are helpful in limiting the need adolescents have for selecting from the thousands of occupations which exist and on Holland's theory that a person selects those things in his environment which are congruent with his coping skills and needs. Subjects for the study consisted of 54 high school sophomore volunteers from an urban high school. They were described as caucasian and predominantly middle class with a mixture of boys and girls. Sex was not a consideration since Holland had made no distinction between sexes in his typology, and it was not pertinent to the study. The Adjective
Check List (ACL) by Gough and Heilbrun was used and administered on three separate days to the subjects. They completed the ACL for each type of the 6 types described by Holland by marking the ACL as to how they would describe the person representing that type - realistic, auto mechanic; intellectual, scientist; social, teacher; conventional, bank teller; enterprising, business executive; artistic, artist. These were occupations visible to adolescents and ones for which the description of each according to Holland could be also described as having certain needs which related to those categorized in the ACL.

A single factor analysis of variance with repeated measures was selected to determine the degree of consistency in the stereotypic descriptions of the six occupations with the theoretical formulations of the categories they represented. Each ACL need scale was analyzed separately to determine if the overall difference between the means of six stereotypes were significant. (p. 94) When the F test was significant, which means contributed to the difference was determined by using Duncan's multiple-range test 6. Results in four areas of the six confirmed Holland's typology. Null hypothesis of no difference was not rejected in the cases of auto mechanic and teacher. Wide ranges in thought about auto mechanic and emotionality concerning teachers were given as possible factors influencing the low scores obtained for those. This study appeared in most aspects to support Holland's theory of need in vocational choice as well as support the idea of occupational stereotyping.

Another study by Hollander and Parker (1971) using 54 high school sophomores, the ACL and an Occupational Preference List were used to
test Holland's theory that the opinions adolescents had of themselves and the stereotypic occupations with which they were familiar were related to their vocational choices. Findings tended to support this conclusion.

Harmon (1971) researched the childhood and adolescent career choices of 1,188 freshman women at the University of Wisconsin by asking them to select the occupations from among 135 listed on the SVIB which they had ever considered as career choices. The age at which these choices had been considered, the most popular choices and the persistence of these into college age were investigated. Results were compiled percentage wise and reported in tables. Those occupational choices usually referred to as traditional for women - housewife, actress, elementary teacher, artist, social worker, interior decorator and nurse were the most popular and also the ones which persisted into adulthood.

Burlin (1976) investigated the occupational aspirations of 149 eleventh grade girls and found that many of them continue to subscribe to traditional occupations. Rakowski and Farrow (1979) used questionnaires and the Attitude Toward Women Scales in a study which further substantiates the research that girls continue to choose careers that are traditionally sex typed.

Ashby and Wittmaier (1978) studied attitude changes in 29 fourth grade girls who were read stories with women either in traditional or nontraditional roles. Girls who heard nontraditional stories rated traditionally male jobs and characteristics as appropriate for females more than girls who heard traditional stories.

Verheyden-Hilliard (1979) reviews two research studies undertaken to study intervention techniques in counteracting occupational
stereotyping in girls. One study of sixth grade girls was set up so that the girls met with their counselor in 30 minute sessions for one session each week over a period of 6 weeks. Various activities such as role playing, researching material on occupations for girls and visiting the job sites of some of these occupations were incorporated into the sessions. Results showed that at the end of the six weeks, girls were able to suggest three times as many options for an adult woman as before, but these choices were still selections considered to be traditional for women.

The other study on intervention strategies included that of providing new career materials for use by upper elementary girls and boys. These materials were non-sex stereotypic and sessions were designed so that the material and the topic of sex stereotyping were fully discussed in class. Results on a posttest indicated that girls picked many new options, nontraditional ones included, when asked to suggest occupations for women. However, when the students were asked to choose for themselves, they all made traditional choices. It was concluded that information giving only is not sufficiently strong enough to counteract sexual stereotyping in occupational selection. A more personal strategy was recommended. The more personal strategy proposed by this study is that of modeling.

**Summary**

There is considerable evidence to support the theory that modeling is a forceful factor in modifying behavior and can be used effectively in many settings (Bandura, 1971; Tumangday, 1977; Smith and Lewis, 1972; Nagle, 1976; Westcott, 1979; Matheny, Anderson and Blue, 1978; Thelen, Fry, Fehrenbach and Frautschi, 1979; Galluf, 1978).
Populations have included nursery school children, elementary school students, high school students and college students as well as clients in clinical settings. Variations of a posttest-only control group have been most popular with researchers. Randomization of subjects to groups and groups to treatment has been used extensively. Treatment has also varied. Real-life, filmed models, videotaped models and groups of students have been sources of treatment in modeling studies. Tools for measuring treatment related to modeling and women include the SVIB (Harmon and Campbell, 1967) questionnaires (Benn, 1979; Rakowski and Farrow, 1979) the Sims SCI Occupational Rating Scale (Fortner, 1970), Roe's Occupational Classification System (Fortner, 1970), The Adjective Check List (Hollander and Parker, 1969), occupational listing from the SVIB (Harmon, 1971), The Attitude Toward Women Scales (Rakowski and Farrow, 1979; Little and Roach, 1974), Holland's Vocational Preference Inventory (Little and Roach, 1974) and observations and interviews (Bandura, 1971; Smith and Lewis, 1972).

Some concern does exist as to the most effective sex of the model in modeling studies. Studies reflect findings which range from female models are more influential for females (Basow, 1980) to there is no difference (Robinson, Forehle and Kurpius, 1979) to sex appropriate behavior is modeled more than the model (Bandura and Walters, 1963; Barkley, Ullman, Otto and Brecht, 1977). There does seem to be some agreement in that the model must be held in esteem by the observer (Bandura and Walters, 1963; Tumangday, 1977).

It is widely accepted that occupational stereotyping is a pervasive influence in the occupational selection of girls and limits their
selections (Looft, 1971; Kirchner and Vondracek, 1973; Steiger and Schlesinger, 1979). Girls feel more comfortable in occupations referred to as traditional (Burlin, 1976; Rakowski and Farrow, 1979; Hollander and Parker, 1969; Rezler, 1976; Harmon, 1971) which include nurse, elementary teacher, secretary, homemaker, waitress, airline stewardess, technical assistant, non-managerial position, artist, social worker, and interior decorator.

Other variables studied in connection with occupational selections by girls include I. Q. (Astin, 1968; Fortner, 1970) attitude (Ashby and Wittmaier, 1978; Hansen and Putman, 1978; Benn, 1979), race (Fortner and Bain, 1980) parent's occupation (Fortner, 1970) and socio-economic status (Fortner and Bain, 1980). All have contributed to the knowledge available but have not distinguished any one variable as having more influence than another. This agrees with Super's (1956) method of career determinants of male occupational selection and supports Zytowski's (1969) and Osipow's (1973) view that a theory for vocational development for women is presently lacking and needs to be investigated.

The need for developing intervention strategies which will provide a larger base for the occupational selection of girls is documented (Little and Roach, 1974; Goldstein, 1975; Cobble, 1980; Harmon, 1979; Steiger and Schlesinger, 1979; Verheyden-Hilliard, 1979). That modeling has been used effectively in other career studies is also substantiated (Little and Roach, 1974; Cobble, 1980; Verheyden-Hilliard, 1979; Goldstein, 1975). The question which this study addressed, "Is role modeling effective as an intervention technique in counteracting sexual stereotyping in the occupational selection of high school girls?", has
been proposed (Verheyden-Hilliard, 1979) but not documented. This study proposed to add information which will document the effects of female role models on the occupational selection of high school girls.
Chapter 3
Methodology

This study was undertaken to determine the effects of observational learning through modeling as an intervention strategy in countering sexual stereotyping in the occupational selection of high school girls. Chapter 3 presents the research methods and procedures used in this study. Included are: population, procedures, instrumentation, research design, specific hypotheses, and statistical analysis. A summary of the methodology will conclude the chapter.

Population and Selection of the Sample

The subjects for the study were high school girls in grades 10 to 12 who selected to take a course in Career Decision Making at Warwick High School in Newport News, Virginia, during the spring semester of 1982. The one-semester Career Decision Making Course was instituted in the school system during the 1981-1982 school year in response to an identified need.

The high school in which the study was conducted is located in a metropolitan area which draws its students from a middle and lower socioeconomic status population. The school is racially defined as about 45 percent white and 55 percent Black and non-white. The sample used was representative of the student body in these respects. The school has a population of 1,850 students in grades 9 through 12 and is one of the four comprehensive high schools in the city. Although at least half of the students seek some kind of further training or education after graduation, it is overall more vocationally oriented. The
forty girls who participated in the study were randomly assigned to two groups. One group was randomly designated the experimental group and one the control group. The students ranged in age from 15 years to 18 years with a mean of 16.5 years.

**Procedures**

**Data Gathering**

After the treatment, female role models in various occupations in the experimental group and no role models in the control group, both groups were given the four measurements used to determine the effects of the treatment. These were: 1) the 120 item list of occupations drawn from the JOB-O (Judgment of Occupational Behavior - Orientation) Interest Inventory (see Appendix A), 2) the choosing of brochures from a display of brochures describing and picturing traditional and nontraditional careers, 3) the updating of the Career and Educational Planning Care (see Appendix B), 4) the COPS Interest Inventory, and 5) Attitude Assessment Scale (see Appendix C). Results from these measurements were classified as traditional or nontraditional and used in the statistical analysis.

**Treatment**

The two groups used in the study were designated as the experimental group (the role model group) and the control group (no role model group). Both groups were exposed to eight sessions or thirty minutes each in which discussions of nontraditional occupations for girls were presented. In the experimental group, the discussions were presented by female role models who work in a nontraditional occupation. In the control group, the same occupations were discussed by the
classroom teacher without role models present. All sessions took place in the regular classroom over which the regular classroom teacher presided. An outline was presented to each role model with instructions to follow it closely.

Each role model met with the investigator in a thirty minute orientation session prior to the meeting with students. The speaker's outline was discussed and role models were encouraged to be very descriptive of their jobs and to emphasize the positive aspects of the specific job and its nontraditional status. They were also requested to wear clothing required on the job. The classroom teacher who led the discussion with the control group was instructed to follow the same outline. These discussions followed the same outline and covered closely the following topics:

1. Introduction - tell a little about yourself and how you came to be in your position.

2. Explain the title of your job.

3. Explain what a nontraditional job is and how yours classifies as one.

4. Describe the following about your job:
   a. Minimum and maximum age requirements
   b. Working hours (any overtime or holiday work included)
   c. Special working conditions (including job hazards)
   d. Educational background (high school, college, technical schools, apprenticeship, etc.)
   e. Special tools and equipment used on the job
   f. Health requirements
Female role models for each session were selected based on the findings of Bandura's work. These were basically a model who: 1) was attractive and prestigious, 2) provided consistent verbal and imaginal associations with the nontraditional aspects of the job, 3) showed the positive aspects of the job, and 4) described job behavior which the observer felt capable of duplicating at some future time. Considering the population from which the observers came, a role model who was attractive and prestigious but not so much so that the observers could not relate was most effective. A model of the same sex was selected since much, although not all, of the research supports this view.

Behavior is often modified through observations of others who may serve as unplanned models. Bandura sees planned models as serving this purpose to a greater degree and presenting some control. It is recognized that total control was not possible. Coaching of each role model prior to each session was undertaken to ensure as much control in reaching objectives as possible.

Occupations selected for use in the study were based on information from the research review as being stereotyped as male occupations, and those which fit the ability levels of the subjects. Bandura's (1980) recent writings have reflected on people and their coping abilities and appeared appropriate as a consideration in this occupational selection.
He sees people as very willing to take on tasks they feel capable of handling and avoiding those tasks with which they feel inadequate. This supports earlier statement which indicate that modeled behavior should not be out of the reach of the observer. The eight occupations chosen were: 1) appliance repairer including business machines and telephones, 2) electrician, 3) mechanic, automobile or airplane, 4) carpenter, 5) pilot, 6) engineer, 7) physician, and 8) air traffic controller.

These occupations represented a wide range of ability and educational background and training which seemed appropriate to the range of ability and proposed educational status and possible attainment of the subjects involved.

One concern not answered by the review of the research was that of time. Most of Bandura's work was based on modeling periods of short duration. It appeared very difficult to determine the number of sessions needed to influence a person's selection of an occupation since in many respects it is an ongoing process. The decision to provide the treatment over an eight-session period of time seemed realistic and viable for the school setting in which it took place. The sessions were held consecutively which was probably more effective.

**Ethical Safeguards and Considerations**

Ethical safeguards and considerations pointed out in part in the regulations of the Virginia Board of Behavioral Science statement on research ethics which were adhered to are:

1. The study was ethically acceptable - no perceived harm was brought to the participants by the study.

2. Approval for the study by the Newport News School System and the principal of Warwick High School.
3. Approval by the Ethics Committee of The College of William and Mary.

4. All participants were informed of the study at its conclusion.

5. The control group was subsequently given the treatment.

Instrumentation

Bandura's observational learning through modeling theory proposes that a change in behavior on the part of the subject results from the modeling process. Observable behavior in the subjects is a vital part of the measurement. Various methods of measurement were reviewed, and the following four methods were selected.

1. The subjects were asked to select three occupations they would choose for themselves from the 120-item list of occupations used in the JOB-O interest inventory. The process of the inventory was not used, only the list of occupations which it contains. The JOB-O Manual provides the following information relative to selection of job titles.

   The 120 job titles selected for JOB-O were chosen from those jobs which will be in demand in the next decade. In the booklet Career Decisions published by the National Vocational Guidance Association, it is stated that 90% of the men are employed in only 90 occupations and 90% of the women are employed in only 40 occupations. Most of these occupations are within the 120 job titles of JOB-O. The U. S. Department of Labor reports on those jobs that show growth potential, and JOB-O includes all of those jobs. JOB-O is updated every two years to conform to the national job trends as stated in the OOH. Job-titles are added or deleted in accordance with job outlook predictions.
The 120 job titles were also selected to include all five levels of education and training and the 13 job clusters of the OOH (Occupational Outlook Handbook). This insures that a student will find job titles to match his/her needs in those two dimensions. (p. 5)

A study to determine the reliability of the list was accomplished. A reliability coefficient of .77 was computed on 120 job titles based on the sample of 16 (see Appendix D).

Use of a listing of occupations for selection has been shown of value in studies by Harmon (1971) who chose the 135-item occupational list from the SVIB and Little and Roach (1974) who devised a job stereotype list. The literature supported the use of expressed vocational choice. Whitney (1969) gathered information concerning the predictive validity of expressed vocational choice. Reviewing most of the large longitudinal studies such as those by Berdie, Strong, the National Science Foundation, and Project TALENT, Whitney concluded that "... in general, a person's expressed vocational choice predicts his future employment about as well as interest inventories or combinations of personality and background characteristics" (p. 279). An earlier study of expressed vocational choice was made by Dolliver (1969). In a comparison with the Strong Vocational Interest Blank Dolliver concludes that, "There is no evidence to show that the SVIB is superior to expressed interests" (p. 104). Bartling and Hood (1981) conducted an 11-year follow up of measured interest and vocational choice with 408 university graduates who had taken the SVIB, the American College Testing Programs Examination and the Opinion, Attitude and Interest Survey
as freshmen. They found expressed choice to be a better predictor of future occupation than measured interest. In a further study of expressed and inventory interests with 795 male National Merit Scholars, Borgen and Seling (1978) found expressed choice to be 2-3 times more accurate than the SVIB when the two were not the same.

Job selections on the JOB-O by the subjects were compared with research which described traditional and nontraditional female occupations (Hollander and Parker, 1969; Harmon, 1971; Burlin, 1976; Rakowski and Garrow, 1979; Rezler, 1976). Selected occupations were categorized as traditional or nontraditional for females (see Appendix E).

2. The subjects were asked to select three brochures which they could keep from a display of equally attractive brochures which included traditional and nontraditional occupations for females. The brochures used were produced by Thomas Nelson Community College. They were selected based on the equality of their attractiveness and their representation of a wide selection of job fields. Since there are more jobs classified as nontraditional for girls, the brochures used included 16 nontraditional and 9 traditional. Brochures used were titled: 1) Art, 2) Accounting, 3) Automotive Technology, 4) Automotive Analysis and Repair, 5) Business Administration, 6) Clerical Studies, 7) Data Processing, 8) Electricity, 9) Electronic Servicing, 10) Engineering, 11) Electrical/Electronics, 12) Food Service Management, 13) Heating, Air Conditioning and Refrigeration, 14) Human Services Associate, 15) Machine Tool Operations, 16) Management, 17) Marine Science, 18) Mechanical, 19) Medical Laboratory Technician, 20) Merchandising Management, 21) Nursing, 22) Occupational Safety and Health Technology,
23) Philosophy and Religion, 24) Secretarial Science, and 25) Welding. Their selections were observed by the researcher, and the selections of each subject were recorded. The researcher recorded the brochures but did not interact with the subjects in any other way. This appeared to be a logical measurement to determine if a change in behavior with regard to occupational interest which has been specifically modeled has taken place. Thorndike and Hagen (1977) attest to the value of direct observations. They state:

When we observe an individual, we get a record of what he actually does. We are not dealing with his rationalizations and protestations. If our observational procedures have been well planned and our observers carefully trained, our score is in large measure free from the biases and idiosyncrasies of the particular observer. Our record of the individual is not a reflection of what he thinks he is, or of what someone else thinks he is, his actions speak to us directly. If, as will be true in many cases, our concern is in what the person does or the way in which his behavior has been changed, then observations of his behavior is the most direct, and in many ways the most satisfying way of getting the relevant information. (pp. 517-18)

The test-retest method of computing reliability was used with 19 students over a three week interval of time and a reliability coefficient of .87 was reported (see Appendix F). Results were categorized as traditional or nontraditional (see Appendix G).

3. The subjects were asked to review and update their Career and Educational Planning Cards. These cards indicate the future plans
occupationally for each student and were reviewed and updated after the treatment. The Career and Educational Planning Card is a standard form used in the secondary schools of Newport News. It is initially completed by students during the second semester of the ninth grade year and reviewed and updated each year thereafter. It is a regular and standard process. This updating should indicate any change in occupational selection by the subjects. Thorndike and Hagen's (1977) statement applies to this selection of observation also. The results obtained from the Career and Educational Planning Card were categorized as traditional or nontraditional in the manner previously described (see Appendix H). The test-retest method of computing reliability used with 14 students over a week interval computed a reliability coefficient of .57 (see Appendix I).

4. The subjects were asked to complete the COPS (California Occupational Preference System) Interest Inventory. Results were used to determine if there were a significant difference in the selection of interest areas between the subjects who had role models and those who did not. These interests were categorized also as traditional or nontraditional.

The COPS is a self report inventory which contains 14 scores: consumer economics, outdoor, clerical, communication, and 2 scores each (skilled and professional) for science, technology, business, arts and service. These are related to the job titles and activities in the Occupational Outlook Handbook and the Dictionary of Occupational Titles which are used by high school students. It is advertised as appropriate for high school students and college students, but it seems to have more research completed on the high school level.
It is evaluated positively in Buros (1972, p. 1012) in the following respects which made it attractive on the high school level.

(1) The COPS instrument has a solid rationale, developed and checked through multiple-factor analysis studies. The area scores make sense. (2) The questionnaire items are written in good clear English. A few items involve technical terms that may hamper a poor reader - terms like "psychotherapy", "alleviate", "corrosive", "interpersonal." But perhaps there are no suitable synonyms for these terms. In any event, it is not possible to develop a printed questionnaire that can accommodate all of the reading problems one finds in high schools. An attempt has been made in the 1976 revised form to deal with the reading level problem presented here. (3) The COPS instrument used the free response (graduated response) format, such that a student can show how he feels about each activity presented. Each item is marked: L = Like very much, l = like moderately, d = dislike moderately, D = Dislike very much. Unlike the Kuder, Edwards, and Lee-Thorpe instruments, COPS is an "honest" questionnaire, designed to help the student to say how he really feels. (And wonder of wonders, the correlations among the COPS area scores are positive: Some students are just plain more interested in everything than others. These intercorrelation data contrast beautifully with the dull negative intercorrelations one usually obtains after shoving children through a Kuder-type forced-choice instrument.) (4) Twelve of the scores represent six couplets - Science-Professional and Science-Skilled, for example. By contrasting these pairs of scores, the counselor can judge
whether the student's interest would or would not require post-high school education. The counselor can then check the student's "college aptitude" from other tests to see whether the student may have overaspirations for his possible future careers.

(5) The Self-Scoring Booklet is very easy for the student to mark, and very easy for the counselor to study.

In a revision (Buros, 1976) of the inventory, attempts were made to lower the reading level, broaden the range of occupations and present male and female norms separately. Weaknesses appear in the areas of stability, validity, faking possibilities and scoring. Some work in the area of construct validity was noted by the attempt to relate occupational categories theoretically to Roe's 1956 occupational groups. Predictive validity is weak as not enough work has been done in the area of how people in the occupations score on the COPS.

Reliability and stability information is reported for high school students but lacking on the college level. Buros (1976, p. 993) reports:

Split-half reliability coefficients for the 14 scales based on an unreported N and grade level, range from .86 to .95. Test-retest coefficients (N = 82) range from .77 to .91; again no grade level is indicated. One sample of seventh graders was tested again as eighth graders. For the 241 females tested, correlations ranged from .53 to .69; for the 256 males tested, the correlations ranged from .48 to .61. Also presented for the seventh- and eighth-grade groups are percentages of students whose first or second area of greatest interest remained in first or second place. For females, this percentage was 84 and for males 74. Considering
the age of the students the stability demonstrated is reasonably
good.

Keeping in mind the weaknesses described, the COPS was selected
for use in the present study for the following reasons:

1. It had been approved by the State Department of Education for
use in the high schools.

2. It had been selected by the school in which the study was con­
ducted as part of its Career Decision Making Course so it was not
unique or unusual.

3. It was easy to administer, score and interpret.

4. It was designed to be as useful with high school students who
are not going to college as with those who are by breaking six of its
interest groupings into professional and skilled categories. Some of
the other interest inventories such as the SVIB are more college
oriented.

5. Reliability and stability information was reported for high
school students and appeared satisfactory.

6. Male and female norms are reported separately.

Results of the three leading interest areas for each subject were
compared to determine traditional or nontraditional category (see
Appendix J).

5. The subjects completed a 20 statement Attitude Assessment
Scale (see Appendix K).

Measurement of subject attitude is an important consideration in
the study. The attitude which the subjects have toward the role models
or classroom teacher should influence the results of the measurements
to some extent. Bandura (1971) bases much of the effectiveness of role modeling on the regard which the observers hold for the role models. Therefore, an assessment of the observers' attitude was obtained through the use of a Likert Scale described by Gronlund (1981) as a widely used self-report method for measuring attitude. The Attitude Assessment Scale was also used with the control group in regard to the classroom teacher (see Appendix F). The study was conducted at the beginning of the course in Career Decision Making so that the classroom teacher would not have had much time to establish rapport with the group which would influence the results.

If the role model group met the expectancies to a high degree, it should be reflected in the statements on the attitude assessment completed by the subjects. This was compared with the attitude assessment for the classroom teacher who was also female and provided much of the same information but who actually represented a traditional role for girls. If the subjects' attitudes towards the role models were positive, the experimental group should choose more nontraditional occupations based on the fact that the role models were actually representing nontraditional occupations in which they are employed.

Design

The design selected for the study was the Posttest-Only Control Group Design. It was selected because it overcomes many of the limitations of other designs and is considered to be one of the best experimental designs available (Kerlinger, 1973; Campbell and Stanley, 1963). The design is pictured as:

\[ R \times O_1 \times R \times O_2 \]

\[ R = \text{random group} \quad O = \text{observations} \]

\[ X = \text{treatment} \]
Randomization of subjects to groups and groups to treatment, use of an experimental and control group and a posttest only are the key components of the design, and ones which were adhered to in this study. The sample was randomly assigned to two groups. Random assignment to groups assured the best way to make the groups as equal as possible in characteristics needing control and insuring internal validity (Kerlinger, 1973). Treatment was also randomly assigned to groups.

External validity deals with the populations, settings, treatments and measurements to which the effect can be generalized. Limitations are expected due to population and measurements used. The population was basically self-selected and some of the measurements were lacking in true standardization. Intra-session history was not entirely controlled since both groups, experimental and control did not meet simultaneously. General history was controlled as general historic events influenced both groups. Since subjects aged at the same time and the same tests were administered to both groups, maturation and testing were controlled in both groups. Instrumentation was controlled as all four measures used were commonly accepted classroom activities. Regression was controlled by use of randomization since it affected both groups. Mortality was not a problem since the results were taken from only those who took the posttest (Campbell and Stanley, 1963).

**Specific Hypotheses**

The specific hypotheses for the study as listed in the null form were:

**Hypothesis 1:** There is no significant difference in the traditional or nontraditional occupational selections of female
students between the female role model and no role model groups as measured by the posttest of the occupational selection list from the JOB-O interest inventory.

Hypothesis 2: There is no significant difference in the traditional or nontraditional brochure selection of female students between the female role model and no role model groups as measured by the posttest selection of brochures.

Hypothesis 3: There is no significant difference in traditional or nontraditional career and educational planning of female students between the female role model and no role model groups as measured by the posttest completion of the Career and Educational Planning Card.

Hypothesis 4: There is no significant difference in traditional or nontraditional interest choices of female students between the female role model and no role model groups as measured by the COPS interest inventory.

Hypothesis 5: There is no significant difference in attitude toward role models between the female role model and no role model groups as measured by the Attitude Assessment Scale.

Statistical Analysis

Although Campbell and Stanley (1963) recommend the use of a t-test as the simplest form of statistical analysis for a Posttest-Only Control Group Design, this does not take into account the population from which the sample is drawn. Parametric statistics are used appropriately when the population is normally distributed. The t-test is based on
such an assumption. Nonparametric tests "are not dependent on the distributions of the populations from which the data are drawn" (Anderson, Ball, Murphy and Associates, 1973, p. 262). Since the population for the present study was a self-selected group and could not be assumed to be normally distributed, and used nominal data and independent samples, the use of a Chi-square test was most appropriate. This statistical test answered the question, "Is there a significant difference between the observed and the expected frequencies of the two groups?" If the data analyzed differed significantly from that expected by chance, then the treatment could be viewed as making a difference. The Chi-square statistic was analyzed through use of the SPSS (Statistical Package for the Social Sciences Computer Program).

**Summary of Methodology**

The sample for the study was high school girls who had selected to take a one-semester course in career decision making and was conducted at Warwick High School in Newport News, Virginia. The Posttest-Only Control Group design was used. The subjects were randomly assigned to two groups, one experimental and one control, and the groups were randomly assigned to treatment.

Treatment was exposure to female role models in nontraditional careers over an eight session period of time. Five methods of measurement were used: 1) Selecting occupations from the 120-item JOB-O occupational selection list, 2) Choosing brochures from a display of career brochures, both traditional and nontraditional, 3) Reviewing and updating the Career and Educational Planning Care, 4) Taking the COPS Interest Inventory, and 5) Stating preferences on the Attitude
Assessment Scale. Results of all measurements were used and the data were analyzed by using a Chi-square test which determined if the treatment made a significant difference.
Chapter 4

Results

This study was undertaken to examine the effects of role modeling as a technique in counteracting sexual stereotyping in occupational selection using high school girls as subjects. Each of the five specific hypotheses and the statistical results for each are presented in this chapter.

Hypothesis 1

Hypothesis 1 states that there is no significant difference in the traditional or nontraditional occupational selections of female students between the female role model and no role model groups as measured by the posttest of the occupational selections list.

A Chi Square test of significance was performed to determine if there was a significant difference between the observed and expected frequencies of the two groups. The expected frequencies for each cell were 30. The observed frequencies for Group 1 of 38 traditional and 22 nontraditional choices were compared with the expected frequencies. Group 1 made 22 nontraditional choices while Group 2 made 5. An analysis of the data indicates a highly significant difference (p = .002) does exist in the occupational list selections of the two groups. One can conclude that the differences between groups were attributed to more than chance, and the role model treatment could be considered effective.

Table 1 presents the statistical summary of the two groups regarding the choice of occupations from a list of occupational titles. Null hypothesis is rejected at the .05 level.
Table 1

CHI SQUARE ANALYSIS OF QUESTION

Select 3 occupations from the list of job titles you would choose for yourself in the future.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>TRADITIONAL</th>
<th>NONTRADITIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (N=20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Model</td>
<td>38</td>
<td>22</td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Role Model</td>
<td>55</td>
<td>5</td>
</tr>
</tbody>
</table>

CHI SQUARE = 13.84
DEGREES OF FREEDOM = 1
SIGNIFICANCE = .0002
Hypothesis 2

Hypothesis 2 states that there is no significant difference in the traditional or nontraditional brochure selection of female students between the female role model and no role model groups as measured by the posttest selection of brochures. That is, subjects in Group 1 will not, after treatment, show a significant difference from Group 2.

Expected frequencies of each cell, 30, were compared with the observed frequencies. Observed frequencies for Group 1 were 31 traditional and 29 nontraditional choices. Group 2 had 37 traditional and 23 nontraditional choices. Analysis of the data indicate no significant difference exists in the brochure selection of the two groups. Group 1 did choose more nontraditional brochures, 29, as compared with 23 from Group 2 but not to a significant degree. It can be concluded that the role model treatment was not more effective since differences can be attributed to chance.

Table 2 presents the statistical summary of the two groups regarding the choice of brochures. Null hypothesis is accepted at the .05 level.
Table 2

CHI SQUARE ANALYSIS OF QUESTION

Choose 3 brochures representing occupations you would choose for yourself in the future.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>TRADITIONAL</th>
<th>NONTRADITIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (N=20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Model</td>
<td>31</td>
<td>29</td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Role Model</td>
<td>37</td>
<td>23</td>
</tr>
</tbody>
</table>

CHI SQUARE = 1.2217

DEGREES OF FREEDOM = 1

SIGNIFICANCE = .26902
Hypothesis 3

Hypothesis 3 states that there is no significant difference in the traditional or nontraditional career and educational planning of female students between the female role model and no role model groups as measured by the posttest completion of the Career and Educational Planning Card.

A comparison of the expected frequencies of each cell, 10, with the observed frequencies show Group 1 with 12 traditional and 8 nontraditional choices and Group 2 with 18 traditional and 2 nontraditional choices. An analysis of the data indicates a trend toward significance (p=.06) between the choices of the two groups on the Career and Educational Planning Card. Group 1 made 8 nontraditional choices as compared with 2 in Group 2. One can conclude that the role model treatment had some effect on the outcome of career choices.

Table 3 presents the statistical summary of the two groups regarding choices on the Career and Educational Planning Card. Null hypothesis is accepted at the .05 level.
Table 3

CHI SQUARE ANALYSIS OF QUESTION

Indicate your plans after high school on the Career and Educational Planning Card.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>TRADITIONAL</th>
<th>NONTRADITIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 N=20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Model</td>
<td>12</td>
<td>8</td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Role Model</td>
<td>18</td>
<td>2</td>
</tr>
</tbody>
</table>

CHI SQUARE = 3.33333

DEGREES OF FREEDOM = 1

SIGNIFICANCE = .0679
Hypothesis 4

Hypothesis 4 states that there is no significant difference in traditional or nontraditional interest choices of female students between the female role model and no role model groups as measured by the California Occupational Preference System interest inventory.

With a cell expectancy of 30, Group 1 shows 32 traditional and 28 nontraditional choices and Group 2 shows 39 traditional and 21 nontraditional choices. While an analysis of the data shows no significant difference (p=.19) between the groups on this measurement, Group 1 did make 28 nontraditional choices as compared to 21 by Group 2. One could conclude that the role model treatment was not more effective since differences can be attributed to chance.

Table 4 presents the statistical summary of the two groups regarding the three leading areas of interest on the COPS. Null hypothesis is accepted at the .05 level.
### Table 4

**CHI SQUARE ANALYSIS OF QUESTION**

Three leading areas of interest indicated by the COPS interest inventory.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>TRADITIONAL</th>
<th>NONTRADITIONAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (N=20)</td>
<td>32</td>
<td>28</td>
</tr>
<tr>
<td>Role Model</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td>39</td>
<td>21</td>
</tr>
<tr>
<td>No Role Model</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CHI SQUARE = 1.6901**

**DEGREES OF FREEDOM = 1**

**SIGNIFICANCE = .19358**
Hypothesis 5

Hypothesis 5 states that there is no significant difference in attitude toward the role models between the female role model and no role model groups as measured by the Attitude Assessment Scale.

On question 1 of the Attitude Assessment Scale regarding attractiveness of the speakers, a significant difference (p = .03) is shown between Groups 1 and 2 in the areas of agreement and undecided. Both groups agree with the statement, but Group 2 who had the classroom teacher as the speaker is more decided and in stronger agreement with the statement.

Question 2 found in Table 6 showed a significant difference (p = .01) between Groups 1 and 2 on how clearly the speakers spoke. Group 1 disagreed significantly that the speakers did not speak clearly. This indicates that the role models in Group 1 spoke more clearly.

Question 3 found in Table 7 showed a significant difference (p = .02) between the two groups. Group 2, the no role model group, found the classroom teacher easier to understand.

Question 4 found in Table 8 showed no significant difference between the two groups in their feeling that the speakers were enthusiastic and interesting. Both groups were in strong agreement with the statement.

Question 5 found in Table 9 showed no significant difference (p = .66) between the two groups on their attitude concerning how they felt about themselves doing the jobs described. Both groups felt very positive and agreed that they could do the things which the speakers described about their jobs.
Question 6 shown on Table 10 dealt with whether or not the speakers were boring. A significant difference (p.=.01) was found between the two groups. Group 1 disagreed more with the statement and indicated the role model speakers were not boring. Group 2 where the classroom teacher acted as the speaker was equally divided on the five choices from strongly agree to strongly disagree.

Question 7 shown on Table 11 dealt with whether or not the speakers knew much about their jobs. No significant difference (p.=.10) was found between the two groups on this statement. Both groups disagreed with the statement indicating that they felt that the speakers did know much about their jobs.

Question 8 found on Table 12 related to how the participants felt about the speakers liking their jobs. No significant difference (p.=.51) was reported between the two groups. Nineteen of the participants in Group 1 agreed or strongly agreed that the speakers seemed to like their jobs. Sixteen of the participants in Group 2 indicated they felt the same way. Therefore, both groups were positive in their responses.

Question 9 on Table 13 dealt with whether or not the speakers knew much about their jobs. It is a repeat of question 7 found on Table 11. Participants in both groups responded in a similar manner. Four members of Group 2 agreed both times that the classroom teacher did not know much about the jobs she described while no members of Group 1 expressed that response. Fifteen members of Group 1 disagreed with the statement the first time it was listed and twenty disagreed the second time. Fifteen members of Group 2 disagreed the first time while sixteen disagreed the second time. There was no significant difference (p.=.09) on
the second statement between the two groups. Both groups continued to
feel that the speakers and the classroom teacher knew much about the
jobs described.

Question 10 shown on Table 14 related to how well the speakers
described their jobs. There was no significant difference (p.=.35)
between the two groups on the statement. Both groups felt that the
speakers described their jobs very well. There were nineteen members
in Group 1 in agreement and seventeen in Group 2.

Question 11 found on Table 15 related to whether or not group
members felt that listening to the speakers was a waste of time. Nine­
teen members of Group 1 and eighteen members of Group 2 disagreed with
the statement. Therefore, there was no significant difference (p.=.73)
between the groups.

Question 12 found on Table 16 dealt with whether or not the
speakers explained why their jobs were called nontraditional. Agreement
with the statement was indicated by fourteen members of Group 1 and ten
members of Group 2. Three members of Group 1 were undecided and three
disagreed. Three members of Group 2 were undecided and seven disagreed.
There was no significant difference (p.=.23) between the two groups.
Both groups were more positive than negative about the statement.

Question 13 shown on Table 17 related to whether or not the group
members felt that the speakers looked at them as they spoke. Nineteen
members of Group 1 agreed with the statement while only one member dis­
agreed. Sixteen members of Group 2 were found in the two agreement
categories while four were undecided or disagreed. A significant dif­
ference (p.=.02) was reported between the two groups with Group 1 in
more agreement.
Question 14 shown on Table 18 dealt with whether or not the speakers felt their jobs were important. Nineteen members in both groups disagreed that the speakers did not seem to feel that their jobs were important. Both groups felt that the speakers did feel their jobs were important. No significant difference ($p = .54$) was reported.

Question 15 shown on Table 19 dealt with whether or not the group members could remember what jobs the speakers held. Thirteen members of Group 1 disagreed that it was difficult to remember while nine members in Group 2 expressed the same disagreement. Seven members of Group 1 were undecided or agreed that it was difficult to remember while eleven members of Group 2 were undecided or in disagreement with the statement. There was no significant difference ($p = .59$) between the two groups on the statement although Group 1 expressed the most positive responses.

Question 16 shown on Table 20 dealt with whether or not the speakers described the activities they actually did on the job. Eighteen members of Group 1 and sixteen in Group 2 expressed positive responses by disagreeing with the negative statement. No significant difference ($p = .53$) was reported. Null hypothesis is accepted at the .05 level.

Question 17 shown on Table 21 presented the feelings of the group members in relation to hearing some of the speakers again. Fifteen members of Group 1 and thirteen in Group 2 agreed that they would like to hear some of the speakers again. There was no significant difference ($p = .44$) between the two groups on the statement. Null hypothesis is accepted at the .05 level.

Question 18 shown on Table 22 dealt with whether or not the group members felt that they would enjoy doing some of the jobs described by
the speakers. Both groups were rather evenly divided on this statement. Ten members of Group 1 indicated agreement and ten undecided or disagreement. Members of Group 2 indicated the same responses. No significant difference (p=.81) was reported between groups. Null hypothesis is accepted at the .05 level.

Question 19 shown on Table 23 relates to whether or not group members learned about some jobs they were not familiar with before. Both groups indicated a positive response to the statement with nineteen members of Group 1 and eighteen members of Group 2 agreeing that they had learned about some new jobs. No significant difference (p=.74) between groups was reported. Null hypothesis is accepted at the .05 level.

Question 20 shown on Table 24 dealt with how the group members felt about the speakers' interest in talking to them. Both groups indicated complete agreement that the speakers were interested in talking to them by disagreeing with the statement in its negative form. There was no significant difference (p=1.000) between the groups. Null hypothesis is accepted at the .05 level.

Tables 5 through 24 present the statistical summaries of the two groups regarding the 20 questions on the Attitude Assessment Scale. Null hypothesis is rejected for numbers 1, 2, 3, 6, and 13. Null hypothesis is accepted for numbers 4, 5, 7, 8, 9, 10, 11, 12, 14, 15, 16, 17, 18, 19 and 20. Rejection and acceptance were based on the .05 level of significance.
Table 5

CHI SQUARE ANALYSIS OF QUESTION 1

The speakers were attractive.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (N=20)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Role Model</td>
<td>0</td>
<td>10</td>
<td>9</td>
<td>1</td>
<td>0</td>
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<tr>
<td>Group 2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Role Model</td>
<td>4</td>
<td>13</td>
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</table>

CHI SQUARE = 8.84585

DEGREES OF FREEDOM = 3

SIGNIFICANCE = .0314
CHI SQUARE ANALYSIS OF QUESTION 2

The speakers did not speak clearly.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
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<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
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<tr>
<td>Role Model</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Group 2</td>
<td>3</td>
<td>3</td>
<td>2</td>
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<tr>
<td>No Role Model</td>
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</table>

CHI SQUARE = 12.94545

DEGREES OF FREEDOM = 4

SIGNIFICANCE = .0115
Table 7

CHI SQUARE ANALYSIS OF QUESTION 3

The speakers used many words I did not understand.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
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</thead>
<tbody>
<tr>
<td>Group 1 (N=20)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Role Model</td>
<td>1</td>
<td>12</td>
<td>1</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Group 2</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>No Role Model</td>
<td>1</td>
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<td>2</td>
<td>12</td>
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</table>

CHI SQUARE = 11.35854

DEGREES OF FREEDOM = 4

SIGNIFICANCE = .0228
Table 8

CHI SQUARE ANALYSIS OF QUESTION 4

The speakers were enthusiastic and interesting.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
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<td></td>
</tr>
<tr>
<td>Role Model</td>
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<td>16</td>
<td>3</td>
<td>0</td>
<td>0</td>
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<tr>
<td>Group 2</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Role Model</td>
<td>5</td>
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**CHI SQUARE = 4.43309**

**DEGREES OF FREEDOM = 3**

**SIGNIFICANCE = .2179**
### CHI SQUARE ANALYSIS OF QUESTION 5

The speakers described things about their jobs that I can do.

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<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
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<td></td>
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<tr>
<td>Role Model</td>
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<td>12</td>
<td>4</td>
<td>2</td>
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<tr>
<td>Group 2</td>
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<td></td>
<td></td>
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<tr>
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</table>

CHI SQUARE = 2.37681

DEGREES OF FREEDOM = 4

SIGNIFICANCE = .6668
Table 10

CHI SQUARE ANALYSIS OF QUESTION 6

The speakers were boring.

<table>
<thead>
<tr>
<th>GROUPS</th>
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<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
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</thead>
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<td>Group 1 (N=20)</td>
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<td>2</td>
<td>15</td>
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<tr>
<td>No Role Model</td>
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<td>2</td>
<td>5</td>
<td>4</td>
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</table>

CHI SQUARE = 12.3333
DEGREES OF FREEDOM = 4
SIGNIFICANCE = .0150
Table 11

Chi Square Analysis of Question 7

The speakers did not know much about their jobs.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
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<tbody>
<tr>
<td>Group 1 (N=20)</td>
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<td></td>
</tr>
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<td>Role Model</td>
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<tr>
<td>Group 2</td>
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<tr>
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</tbody>
</table>

Chi Square = 6.05263

Degrees of Freedom = 3

Significance = .1091
Table 12

CHI SQUARE ANALYSIS OF QUESTION 8

The speakers seemed to like their jobs.

<table>
<thead>
<tr>
<th>GROUPS</th>
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<th>AGREE</th>
<th>UNDECIDED</th>
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<th>STRONGLY DISAGREE</th>
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<tr>
<td>Role Model</td>
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<td>1</td>
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</table>

CHI SQUARE = 2.30263
DEGREES OF FREEDOM = 3
SIGNIFICANCE = .5120
Table 13

CHI SQUARE ANALYSIS OF QUESTION 9

The speakers did not know much about their jobs.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
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<td>Group 1 (N=20)</td>
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<tr>
<td>Role Model</td>
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<td>Group 2</td>
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<td>No Role Model</td>
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CHI SQUARE = 4.8000

DEGREES OF FREEDOM = 2

SIGNIFICANCE = 0.0907
Table 14

CHI SQUARE ANALYSIS OF QUESTION 10

The speakers described their jobs very well.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
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<tr>
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<td>Role Model</td>
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<td></td>
</tr>
<tr>
<td>Group 2</td>
<td>6</td>
<td>11</td>
<td>1</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>No Role Model</td>
<td></td>
<td></td>
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</tbody>
</table>

CHI SQUARE = 3.25926

DEGREES OF FREEDOM = 3

SIGNIFICANCE = .3534
### Table 15

**CHI SQUARE ANALYSIS OF QUESTION 11**

Listening to the speakers was a waste of time.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 (N=20)</td>
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</tr>
<tr>
<td>Role Model</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>10</td>
<td>9</td>
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<tr>
<td>Group 2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No Role Model</td>
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<td>1</td>
<td>8</td>
<td>10</td>
</tr>
</tbody>
</table>

**CHI SQUARE = 1.27485**

**DEGREES OF FREEDOM = 3**

**SIGNIFICANCE = .7351**
Table 16

CHI SQUARE ANALYSIS OF QUESTION 12

The speakers explained why their jobs were called nontraditional.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
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<tbody>
<tr>
<td>Group 1 (N=20)</td>
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<td>13</td>
<td>3</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Role Model</td>
<td>2</td>
<td>8</td>
<td>3</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

CHI SQUARE = 5.52381

DEGREES OF FREEDOM = 4

SIGNIFICANCE = .2376
Table 17

CHI SQUARE ANALYSIS OF QUESTION 13

The speakers looked at us as they spoke.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
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<td>Role Model</td>
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</tr>
<tr>
<td>Group 2</td>
<td>5</td>
<td>11</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>No Role Model</td>
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</table>

CHI SQUARE = 9.46667

DEGREES OF FREEDOM = 3

SIGNIFICANCE = .0237
Table 18

CHI SQUARE ANALYSIS OF QUESTION 14

The speakers did not seem to feel that their jobs were important.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
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</tr>
<tr>
<td>Role Model</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>12</td>
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<tr>
<td>Group 2</td>
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<td></td>
</tr>
<tr>
<td>No Role Model</td>
<td>0</td>
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<td>0</td>
<td>8</td>
<td>11</td>
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</table>

CHI SQUARE = 2.11014

DEGREES OF FREEDOM = 3

SIGNIFICANCE = .5499
Table 19

**CHI SQUARE ANALYSIS OF QUESTION 15**

It is difficult to remember what jobs the speakers had.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
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<td>Group 1 (N=20)</td>
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<td></td>
</tr>
<tr>
<td>Role Model</td>
<td>1</td>
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<td>10</td>
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<tr>
<td>Group 2</td>
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<tr>
<td>No Role Model</td>
<td>2</td>
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<td>2</td>
<td>5</td>
<td>4</td>
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</table>

**CHI SQUARE = 2.80952**

**DEGREES OF FREEDOM = 4**

**SIGNIFICANCE = .5902**
Table 20

CHI SQUARE ANALYSIS OF QUESTION 16

The speakers did not describe the activities they actually did on the job.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
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<td>Group 2</td>
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<td>0</td>
<td>9</td>
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</table>

CHI SQUARE = 3.11930

DEGREES OF FREEDOM = 4

SIGNIFICANCE = .5381
## CHI SQUARE ANALYSIS OF QUESTION 17

*I would like to hear some of the speakers again.*

<table>
<thead>
<tr>
<th></th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
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<tr>
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<td>3</td>
<td>0</td>
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<td><strong>Group 2</strong></td>
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**CHI SQUARE = 3.68889**

**DEGREES OF FREEDOM = 4**

**SIGNIFICANCE = .4497**
Table 22

CHI SQUARE ANALYSIS OF QUESTION 18

I think I would enjoy doing some of the jobs the speakers described.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
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</thead>
<tbody>
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<tr>
<td>Role Model</td>
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<td>5</td>
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<tr>
<td>Group 2</td>
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<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>No Role Model</td>
<td>3</td>
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<td>3</td>
<td>4</td>
<td>3</td>
</tr>
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</table>

CHI SQUARE = 1.56111

DEGREES OF FREEDOM = 4

SIGNIFICANCE = .8158
Table 23

CHI SQUARE ANALYSIS OF QUESTION 19

I learned about some jobs that I was not familiar with before.

<table>
<thead>
<tr>
<th>GROUPS</th>
<th>STRONGLY AGREE</th>
<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group 1 N=20</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Role Model</td>
<td>6</td>
<td>13</td>
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<td>Group 2</td>
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<td></td>
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<td></td>
<td></td>
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<td>7</td>
<td>11</td>
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CHI SQUARE = 1.24359

DEGREES OF FREEDOM = 3

SIGNIFICANCE = .7426
### Table 24

CHI SQUARE ANALYSIS OF QUESTION 20

The speakers did not seem to be interested in talking to us.

<table>
<thead>
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<th>AGREE</th>
<th>UNDECIDED</th>
<th>DISAGREE</th>
<th>STRONGLY DISAGREE</th>
</tr>
</thead>
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<td>11</td>
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<td>0</td>
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<tr>
<td>Group 2</td>
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CHI SQUARE = 0.0

DEGREES OF FREEDOM = 1

SIGNIFICANCE = 1.000
Chapter 5
Summary, Conclusions, Discussion, and Recommendations

An overview of the study is presented in Chapter 5 by summarizing the study, presenting the results and conclusions, discussing the implications and making recommendations for further research in the area.

The myth that some occupations are appropriate for men and others are appropriate for women has been reinforced from childhood and greatly influences the options of both sexes (Looft, 1971; Kirchner and Vondracek, 1973; Schlassberg and Goodman, 1972). This myth appears grossly exaggerated according to research by Macoby and Jacklin (1974).

Stereotyping of jobs by sex has a restricting effect on both sexes, but it has had a disproportionately negative impact on women. The need for methods to counteract occupational stereotyping is widely recognized (Steiger and Schlesinger, 1979; Monthly Labor Review, 1976). A wider base from which girls can make occupational selections is needed. This study proposes to answer the question, "Will using female role models in nontraditional careers for women affect the choice of high school girls in selecting nontraditional occupations for themselves?"

There is considerable evidence to support the theory that modeling is a forceful factor in modifying behavior and can be used effectively in many settings (Bandura, 1971; Tumangday, 1977; Smith and Lewis, 1972; Nagle, 1976; Westcott, 1979; Matheny, Anderson and Blue, 1978; Thelen, Fry, Fehrenbach and Frautschi, 1979; Galluf, 1978). The underlying
theory for the study is based on Bandura's (1971) observational learning through role modeling.

Subjects for the study were forty high school girls enrolled in a Career Decision Making course in the spring of 1982. They were randomly assigned to two groups, and the treatment was randomly assigned to one of the groups. The design follows closely the Post-test-only Control Group described by Kerlinger (1973) and Campbell and Stanley (1963).

The two groups used were designated as the experimental group (the role model group—Group 1) and the control group (no role model group—Group 2). Treatment consisted of eight sessions of thirty minutes each in which discussions of eight identified nontraditional occupations for girls were presented. In Group 1 the discussions were presented by female role models who work in nontraditional occupations. In Group 2 the same occupations were discussed by the classroom teacher without role models present. Both groups followed the same prescribed outline of topics.

Five methods of measurement were used. They were: An occupational selection list, a display of brochures, a Career and Educational Planning Card, the California Occupational Preference System interest inventory and an Attitude Assessment Scale.

Conclusions

The research hypotheses and results are summarized as follows.

Hypothesis 1

This hypothesis relates to the selecting of three job titles by Groups 1 and 2. It answers the question, "Will the role model group
(Group 1) select more nontraditional job titles than the no role model group (Group 2) to a significant degree?" Results show a highly significant difference (p.=.0002) between the two groups relating to the observed and expected frequencies of the two groups. Group 1 chose more nontraditional job titles to a significant degree.

Hypothesis 2

Hypothesis 2 relates to the selecting of three brochures describing traditional and nontraditional occupations by Groups 1 and 2. There was no significant difference (p.=.26) between the observed frequency and the expected frequency of the two groups. Group 1 chose more nontraditional brochures than Group 2 but not to a significant degree.

Hypothesis 3

This research hypothesis relates to an indication of plans after high school on a Career and Educational Planning Care. It answers the question, "Will the girls in Group 1 indicate more nontraditional plans on the planning card than girls in Group 2 to a significant degree?" There was a trend toward significance (p.=.06) between the observed and expected frequencies of the two groups. Group 1 chose more nontraditional plans than Group 2.

Hypothesis 4

Hypothesis 4 relates to the three top interest areas of the two groups as indicated on the COPS interest inventory. "Will the girls in Group 1 show more interest in nontraditional areas than those in Group 2 to a significant degree?" Results show no significant difference (p.=.19) between the observed and expected frequencies of the two groups. Group 1 did choose more nontraditional interest areas than Group 2 but not to a significant degree.
Hypothesis 5

Hypothesis 5 relates to attitude toward role models and classroom teacher between Groups 1 and 2. It answers the question, "Will the girls in Group 1 have a positive attitude toward their role models and will this attitude differ significantly from that of Group 2?" Each statement on the 20-item Attitude Assessment Scale was analyzed separately, and the results are shown in the following responses.

1. The speakers were attractive. There was a significant difference (p=.03) between the observed and expected frequencies of the two groups on this statement. Group 2 found the speaker more attractive to a significant degree.

2. The speakers did not speak clearly. There was a significant difference (p=.01) in the observed and expected frequencies of the two groups. Group 1 agreed more significantly with the statement.

3. The speakers used many words I did not understand. A significant difference (p=.02) between the observed and expected frequencies of the two groups was found. Group 1 agreed with the statement more significantly.

4. The speakers were enthusiastic and interesting. There was no significant difference (p=.21) between the observed and expected frequencies of the two groups. Both groups agreed strongly that the speakers were enthusiastic and interesting.

5. The speakers described things about their jobs that I can do. No significant difference (p=.66) between the observed and expected frequencies of the two groups was reported. Both groups agreed with the statement.
6. The speakers were boring. There was a significant difference
(p.=.01) between the observed and expected frequencies of the two
groups. Group 1 disagreed with the statement significantly.

7. The speakers did not know much about their jobs. There was no
significant difference (p.=.10) between the observed and expected fre­
quencies of the two groups. Both groups disagreed with the statement.

8. The speakers seemed to like their jobs. No significant dif­
ference (p.=.51) between the observed and expected frequencies of the
two groups was reported. Both groups agreed with the statement.

9. The speakers did not know much about their jobs. There was no
significant difference (p.=.09) between the observed and expected fre­
quencies of the two groups reported. Group 1 disagreed more strongly
with this statement.

10. The speakers described their jobs very well. No significant
difference (p.=.35) was reported between the observed and expected fre­
quencies of the two groups. Both groups agreed with the statement.

11. Listening to the speakers was a waste of time. No significant
difference (p.=.73) was reported between the observed and expected fre­
quencies of the two groups. Both groups disagreed strongly with the
statement.

12. The speakers explained why their jobs were called nontradi­
tional. There was no significant difference (p.=.23) between the
observed and expected frequencies of the two groups. Both groups agreed
with the statement. Group 1 tended to agree more strongly with the
statement.

13. The speakers looked at us as they spoke. A significant dif­
ference (p.=.02) was reported between the observed and expected
frequencies of the two groups. Group 1 agreed with the statement more significantly, although both groups agreed with the statement.

14. The speakers did not seem to feel that their jobs were important. No significant difference (p=.54) was reported between the observed and expected frequencies of the two groups. Both groups strongly disagreed with the statement.

15. It is difficult to remember what jobs the speakers had. No significant difference (p=.59) was reported between the observed and expected frequencies of the two groups. Both groups disagreed with the statement.

16. The speakers did not describe the activities they actually did on the job. There was no significant difference (p=.53) reported between the observed and expected frequencies of the two groups. Both groups disagreed with the statement.

17. I would like to hear some of the speakers again. No significant difference (p=.44) was reported between the observed and expected frequencies of the two groups. Both groups agreed with the statement.

18. I think I would enjoy doing some of the jobs the speakers described. No significance (p=.81) was reported between the observed and expected frequencies of the two groups. Both groups agreed and disagreed equally on the statement.

19. I learned about some jobs that I was not familiar with before. No significance (p=.74) was reported between the observed and expected frequencies of the two groups. Both groups agreed with the statement.

20. The speakers did not seem to be interested in talking to us. There was no significance (p=1.00) between the observed and expected
frequencies reported for the two groups. Both groups completely disagreed with the statement.

Discussion

The question addressed by this study was whether or not role modeling would be effective as a technique in counteracting sexual stereotyping in the occupational selection of high school girls. Previous research findings indicate that role modeling is an effective tool in modifying behavior and can be used in many settings (Bandura, 1971; Tumangday, 1977; Smith and Lewis, 1972; Nagle, 1976; Westcott, 1979; Matheny, Anderson and Blue, 1978; Thelen, Fry, Fehrenbach and Frautschi, 1979; Galluf, 1978). This study supports those findings. Role modeling was actually taking place in both groups of the study. Both groups had female role models. The importance of the sex of the role model has not been determined previously (Robinson, Forehle and Kurpius, 1979) nor has there been an attempt to do so in this study.

The Attitude Assessment Scale was designed to ascertain the attitude of the subjects toward the role models. Bandura (1971) proposed that the effectiveness of role modeling is based heavily on attitude. The results of the Attitude Assessment Scale indicate a very positive attitude toward the role models in both groups on every statement. The influence of the classroom teacher as a role model is recognized by the favorable attitude of the students in Group 2 toward her. Students in Group 2 found her to be more attractive than those in Group 1 found their role models.

Consideration must be given to the probability that the amount of time the teacher spent with the class helped to establish a relationship
with the students in Group 2 that was not possible for models and students in Group 1. However, a less attractive, enthusiastic, and interesting classroom teacher might have created the opposite effect. It is important to note that although the female classroom teacher appeared to have a very positive relationship with the students in Group 2 and passed on occupational information effectively, the students in Group 1 still chose more nontraditional occupations on every measurement. It could be suggested therefore, that the personality of the teacher had a distinct effect upon the results of the study. With this in mind, the results of Group 1 appear more significant than viewed at first glance. Results on measurement 1 on job titles differed to a high degree of significance (p. = .0002) and a trend toward significance (p. = .06) was found on measurement 3, the Career and Educational Planning Card.

Earlier studies indicate that even when informed about nontraditional occupations, girls continue to choose traditional occupations for themselves (Astin, 1968; Hollander and Parker, 1969; Harmon, 1971; Burlin, 1976; Rezler, 1976; Benn, 1979; Rakowski and Farrow, 1979; Verheyden-Hilliard, 1979). This study suggests that using female role models in nontraditional occupations with high school girls does tend to influence more girls to at least consider nontraditional occupations for themselves and thus reverse the trend toward traditional occupational selection.

**Recommendations**

The previous discussion points to several recommendations and implications for future study.
1. It might be important to conduct a study in which the control group received no treatment or add a third group which received no treatment.

2. It might be significant to use a male classroom teacher for Group 2 or use male role models for Group 1.

3. It would be interesting to conduct a study over a longer period of time. Occupational choice is an ongoing process and short periods of time are probably not as influential as longer ones.

4. It would be helpful to allow for a longer follow-up period which would help determine stability of occupational choice.

5. It might be interesting to conduct a study comparing the use of videotape models with real life models.
Appendix A

JOB TITLE

PLEASE PLACE A CHECK (✓) BY 3 OF THE FOLLOWING JOBS WHICH YOU WOULD
CHOOSE TO GO INTO AS YOUR FUTURE OCCUPATION.

___ ACCOUNTANT
___ ADVERTISING WORKER
___ AIRPLANE MECHANIC
___ AIR TRAFFIC CONTROLLER
___ APPLIANCE REPAIRER
___ ARCHITECT
___ ASSEMBLER
___ AUTO BODY REPAIRER
___ AUTO MECHANIC
___ AUTO PARTS WORKER
___ AUTO SALESWORKER
___ BANK CLERK/TELLER
___ BANK OFFICER
___ BARBER
___ BOOKKEEPER
___ BROADCAST TECHNICIAN
___ BUILDING CUSTODIAN
___ BUSINESS MACHINE REPAIRER
___ CARPENTER
___ CASHIER
___ CLERGY
___ COLLEGE/UNIVERSITY TEACHER
___ COMMERCIAL ARTIST
___ COMPUTER OPERATOR
___ COOK/CHEF
___ COSMETOLOGIST
___ COUNSELOR
___ DENTAL ASSISTANT
___ DENTAL HYGIENIST
___ DENTAL LAB TECHNICIAN
___ DENTIST
___ DIETICIAN
___ DRAFTER
___ ELECTRICIAN
___ ELEMENTARY TEACHER
___ ENGINEER
___ ENGINEERING TECHNICIAN
___ ENVIRONMENTAL SCIENTIST
___ FARM/RANCH WORKER
___ FIREFIGHTER
___ FLIGHT ATTENDANT
___ FORESTER
FORESTRY TECHNICIAN
HEALTH/REGULATORY INSPECTOR
HEALTH SERVICES ADMINISTRATOR
HEATING/AIR/REFRIG. MECHANIC
HOME ECONOMIST
HOTEL CLERK
HOTEL MANAGER
INDUSTRIAL MACHINERY REPAIRER
INSTRUMENT REPAIRER
INSURANCE AGENT
INTERIOR DESIGNER
IRONWORKER
LAWYER
LIBRARIAN
LIBRARY TECHNICIAN
LIFE SCIENTIST
LITHOGRAPHIC WORKER
LUMBER WORKER
MACHINIST
MAIL CARRIER
MANUFACTURER'S SALESWORKER
MARKETING RESEARCH WORKER
MATHEMATICIAN/STATISTICIAN
MEATCUTTER
MEDICAL TECHNICIAN (EMG)
MEDICAL LAB WORKER
NEWSPAPER REPORTER
NURSE, LICENSED PRACTICAL
NURSE, RN
NURSING AIDE/ATTENDANT
OCCUPATIONAL THERAPIST
OFFICE MACHINE OPERATOR
OPERATING ENGINEER
OPTOMETRIST
PAINTER
PERFORMING ARTIST
PERSONNEL/LABOR REL. WORKER
PHARMACIST
PHYSICAL SCIENTIST
PHYSICAL THERAPIST
PHYSICIAN
PILOT (AIRPLANE)
PLUMBER/PIPEFITTER
POLICE OFFICER
POSTAL CLERK
PROBATION/PAROLE OFFICER
PROGRAMMER
PSYCHOLOGIST
PUBLIC RELATIONS WORKER
PURCHASING AGENT
RADIOLOGIC TECHNICIAN
REAL ESTATE SALESWORKER
RECEPTIONIST
RECREATION WORKER
RESPIRATORY THERAPY WORKER
RETAIL SALESWORKER
SECONDARY TEACHER
SECRETARY/STENOGRAPHER
SECURITIES SALESWORKER
SERVICE STATION ATTENDANT
SHIPPING/RECEIVING CLERK
SOCIAL SCIENTIST
SOCIAL WORKER
SPEECH PATHOLOGIST
SURVEYOR
SYSTEMS ANALYST
TECHNICAL WRITER
TELEPHONE CRAFTS WORKER
TELEPHONE OPERATOR
TRUCK/BUS DRIVER
TV/RADIO SERVICE TECHNICIAN
TYPIST
URBAN PLANNER
VETERINARIAN
WAITER/WAITRESS
WELDER
WHOLESALE SALESWORKER
Please complete the following in pencil:

Name: ____________________________________________

Address: ________________________________    Telephone No.:_____________

Parents/Guardian: __________________________  Parent Work Tel.:__________

Plans After High School: ___________________________________________

List careers you would like to know about:

1) ____________________________________________  3) ____________________________

2) ____________________________________________  4) ____________________________

List Colleges/Vocational Schools in which you are interested:

1) ____________________________________________  3) ____________________________

2) ____________________________________________  4) ____________________________
Appendix C

ATTITUDE ASSESSMENT SCALE

DIRECTIONS: Indicate how much you agree or disagree with each statement by circling the appropriate letter(s).

SA - Strongly Agree
A - Agree
U - Undecided
D - Disagree
SD - Strongly Disagree

SA A U D SD 1. The speakers were attractive.
SA A U D SD 2. The speakers did not speak clearly.
SA A U D SD 3. The speakers used many words I did not understand.
SA A U D SD 4. The speakers were enthusiastic and interesting.
SA A U D SD 5. The speakers described things about their jobs that I can do.
SA A U D SD 6. The speakers were boring.
SA A U D SD 7. The speakers did not know much about their jobs.
SA A U D SD 8. The speakers seemed to like their jobs.
SA A U D SD 9. The speakers did not know much about their jobs.
SA A U D SD 10. The speakers described their jobs very well.
SA A U D SD 11. Listening to the speakers was a waste of time.
SA A U D SD 12. The speakers explained why their jobs were called nontraditional.
SA A U D SD 13. The speakers looked at us as they spoke.
SA A U D SD 14. The speakers did not seem to feel that their jobs were important.
SA A U D SD 15. It is difficult to remember what jobs the speakers had.

SA A U D SD 16. The speakers did not describe the activities they actually did on the job.

SA A U D SD 17. I would like to hear some of the speakers again.

SA A U D SD 18. I think I would enjoy doing some of the jobs the speakers described.

SA A U D SD 19. I learned about some jobs that I was not familiar with before.

SA A U D SD 20. The speakers did not seem to be interested in talking to us.
### Appendix D

**RELIABILITY TEST FOR JOB TITLES LIST**

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<th>Job Titles</th>
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<th>Second Test</th>
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<td>Second Test</td>
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\[
N = 16
\]

\[
r_{xy} = \frac{N \cdot xy - \overline{x} \overline{y}}{\sqrt{(N \cdot x^2 - (\overline{x})^2)(N \cdot y^2 - (\overline{y})^2)}}
\]

\[
r_{xy} = \frac{16(163) - 47(49)}{\sqrt{16(153) - (47)^2}(16(191) - (49)^2)}
\]

\[
r_{xy} = \frac{2608 - 2303}{\sqrt{(2448 - 2209)(3056 - 2401)}}
\]

\[
r_{xy} = \frac{305}{\sqrt{156545}} = 395.657
\]

\[
r_{xy} = \frac{305}{395.657} = .7708
\]
Appendix E

JOB TITLES CATEGORIZED AS TRADITIONAL OR NONTRADITIONAL FOR FEMALES

N ACCOUNTANT
N ADVERTISING WORKER
N AIRPLANE MECHANIC
N AIR TRAFFIC CONTROLLER
N APPLIANCE REPAIRER
N ARCHITECT
N ASSEMBLER
N AUTO BODY REPAIRER
N AUTO MECHANIC
N AUTO PARTS WORKER
N AUTO SALESWORKER
T BANK CLERK/TELLER
N BANK OFFICER
N BARBER
T BOOKKEEPER
N BROADCAST TECHNICIAN
N BUILDING CUSTODIAN
N BUSINESS MACHINE REPAIRER
N Carpenter
T CASHIER
N CLERGY

N COLLEGE/UNIVERSITY TEACHER
T COMMERCIAL ARTIST
N COMPUTER OPERATOR
N COOK/CHEF
T COSMETOLOGIST
T COUNSELOR
T DENTAL ASSISTANT
T DENTAL HYGIENIST
T DENTAL LAB TECHNICIAN
N DENTIST
T DIETICIAN
N DRAFTER
N ELECTRICIAN
T ELEMENTARY TEACHER
N ENGINEER
N ENGINEERING TECHNICIAN
N ENVIRONMENTAL SCIENTIST
N FARM/RANCH WORKER
N FIREFIGHTER
T FLIGHT ATTENDANT
N FORESTER
<table>
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<tr>
<th>N FORESTRY TECHNICIAN</th>
<th>T NEWSPAPER REPORTER</th>
</tr>
</thead>
<tbody>
<tr>
<td>N HEALTH/REGULATORY INSPECTOR</td>
<td>T NURSE, LICENSED PRACTICAL</td>
</tr>
<tr>
<td>N HEALTH SERVICES ADMINISTRATOR</td>
<td>T NURSE, RN</td>
</tr>
<tr>
<td>N HEATING/AIR/REFRIG. MECHANIC</td>
<td>T NURSING AIDE/ATTENDANT</td>
</tr>
<tr>
<td>T HOME ECONOMIST</td>
<td>T OCCUPATIONAL THERAPIST</td>
</tr>
<tr>
<td>T HOTEL CLERK</td>
<td>N OFFICE MACHINE OPERATOR</td>
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<tr>
<td>N HOTEL MANAGER</td>
<td>N OPERATING ENGINEER</td>
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<tr>
<td>N INDUSTRIAL MACHINERY REPAIRER</td>
<td>N OPTOMETRIST</td>
</tr>
<tr>
<td>N INSTRUMENT REPAIRER</td>
<td>N PAINTER</td>
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<tr>
<td>N INSURANCE AGENT</td>
<td>T PERFORMING ARTIST</td>
</tr>
<tr>
<td>T INTERIOR DESIGNER</td>
<td>N PERSONNEL/LABOR REL. WORKER</td>
</tr>
<tr>
<td>N IRONWORKER</td>
<td>N PHARMACIST</td>
</tr>
<tr>
<td>N LAWYER</td>
<td>N PHOTOGRAPHER</td>
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<tr>
<td>T LIBRARIAN</td>
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<td>T LIBRARY TECHNICIAN</td>
<td>T PHYSICAL THERAPIST</td>
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<tr>
<td>N LIFE SCIENTIST</td>
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<td>N PLUMBER/PIPEFITTER</td>
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</tr>
<tr>
<td>T MEDICAL TECHNICIAN (EMG)</td>
<td>T PURCHASING AGENT</td>
</tr>
<tr>
<td>T MEDICAL LAB WORKER</td>
<td>N RADIOLOGIC TECHNICIAN</td>
</tr>
</tbody>
</table>
N REAL ESTATE SALESWORKER
T RECEPTIONIST
T RECREATION WORKER
T RESPIRATORY THERAPY WORKER
T RETAIL SALESWORKER
T SECONDARY TEACHER
T SECRETARY/STENOGRAPHER
T SECURITIES SALESWORKER
N SERVICE STATION ATTENDANT
N SHIPPING/RECEIVING CLERK
N SOCIAL SCIENTIST
T SOCIAL WORKER
T SPEECH PATHOLOGIST
N SURVEYOR
N SYSTEMS ANALYST
N TECHNICAL WRITER
N TELEPHONE CRAFTS WORKER
T TELEPHONE OPERATOR
N TRUCK/BUS DRIVER
N TV/RADIO SERVICE TECHNICIAN
T TYPIST
N URBAN PLANNER
N VETERINARIAN
T WAITER/WAITRESS
N WELDER
T WHOLESALE SALESWORKER


## Appendix F

### RELIABILITY TEST FOR BROCHURES

<table>
<thead>
<tr>
<th>Brochure Choice</th>
<th>$X$</th>
<th>$Y$</th>
<th>$XY$</th>
<th>$X^2$</th>
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<td>17.</td>
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</tr>
<tr>
<td>18.</td>
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<td>4</td>
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<tr>
<td>19.</td>
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<tr>
<td>20.</td>
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<tr>
<td></td>
<td>57</td>
<td>57</td>
<td>229</td>
<td>229</td>
<td>247</td>
</tr>
</tbody>
</table>

$N=19$
\[ r_{xy} = \frac{N \left( \sum xy - \sum x \sum y \right)}{\sqrt{N \left( \sum x^2 - \left( \frac{\sum x}{N} \right)^2 \right) \left( \sum y^2 - \left( \frac{\sum y}{N} \right)^2 \right)}} \]

\[ r_{xy} = \frac{19(229) - 57(57)}{\sqrt{19(229) - 3249} \left( 19(247) - 3249 \right)} \]

\[ r_{xy} = \frac{4351 - 3249}{\sqrt{4351 - 3249} \left( 4693 - 3249 \right)} = \frac{1102}{\sqrt{1102} \left( 1444 \right)} = \frac{1102}{1591288} \]

\[ r_{xy} = \frac{1102}{1261.426} = 0.873 \]
## Appendix G

**BROCHURES CATEGORIZED AS TRADITIONAL OR NONTRADITIONAL FOR FEMALES**

<table>
<thead>
<tr>
<th>Program</th>
<th>Traditional/Nontraditional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art</td>
<td>Traditional</td>
</tr>
<tr>
<td>Accounting</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Automotive Technology</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Automotive Analysis and Repair</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Business Administration</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Clerical Studies</td>
<td>Traditional</td>
</tr>
<tr>
<td>Data Processing</td>
<td>Traditional</td>
</tr>
<tr>
<td>Electricity</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Electronics Servicing</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Engineering</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Electrical/Electronics</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Food Service Management</td>
<td>Traditional</td>
</tr>
<tr>
<td>Heating, Air Conditioning and Refrigeration</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Human Services Associate</td>
<td>Traditional</td>
</tr>
<tr>
<td>Machine Tool Operations</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Management</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Marine Science</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Mechanical</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Medical Laboratory Technician</td>
<td>Traditional</td>
</tr>
<tr>
<td>Merchandising Management</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Nursing</td>
<td>Traditional</td>
</tr>
<tr>
<td>Occupational Safety and Health Technology</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Philosophy and Religion</td>
<td>Nontraditional</td>
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</table>
Secretarial Science

Welding

Traditional

Nontraditional
Appendix H

CAREER AND EDUCATIONAL PLANNING CARD

CATEGORIZED AS TRADITIONAL OR NONTRADITIONAL FOR FEMALES

<table>
<thead>
<tr>
<th>Occupation</th>
<th>Traditional/Nontraditional</th>
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<tbody>
<tr>
<td>Accounting</td>
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</tr>
<tr>
<td>Business Administration</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Computer Operator</td>
<td>Traditional</td>
</tr>
<tr>
<td>Cosmetologist</td>
<td>Traditional</td>
</tr>
<tr>
<td>Counselor</td>
<td>Traditional</td>
</tr>
<tr>
<td>Dental Assistant</td>
<td>Traditional</td>
</tr>
<tr>
<td>Engineer</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Fashion Buyer</td>
<td>Traditional</td>
</tr>
<tr>
<td>Journalist</td>
<td>Traditional</td>
</tr>
<tr>
<td>Law Enforcement</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Mass Media</td>
<td>Traditional</td>
</tr>
<tr>
<td>Meatcutter</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Medical Technician</td>
<td>Traditional</td>
</tr>
<tr>
<td>Music</td>
<td>Traditional</td>
</tr>
<tr>
<td>Nurse</td>
<td>Traditional</td>
</tr>
<tr>
<td>Pharmacist</td>
<td>Nontraditional</td>
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<tr>
<td>Physician</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Psychologist</td>
<td>Traditional</td>
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<td>Ranching</td>
<td>Nontraditional</td>
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<td>Sales Clerk</td>
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<td>Secretarial</td>
<td>Traditional</td>
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Appendix I

RELIABILITY TEST FOR CAREER AND EDUCATIONAL PLANNING CARD

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<td>Y</td>
<td>XY</td>
<td>x^2</td>
<td>y^2</td>
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<td>1</td>
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<td>2.</td>
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<td>1</td>
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<td>1</td>
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</table>

N=14

\[ r_{xy} = \frac{N \cdot xy - \bar{x} \cdot \bar{y}}{\sqrt{(N \cdot x^2 - (\bar{x})^2)(N \cdot y^2 - (\bar{y})^2)} } \]

\[ r_{xy} = \frac{14(18) - 14(14)}{\sqrt{14(22) - (14)^2(14)(20) - (14)^2}} \]

\[ r_{xy} = \frac{252 - 192}{\sqrt{(308 - 196)(280 - 196)}} = \frac{56}{\sqrt{112(84)}} = \frac{56}{9408} = 0.577 \]

ST = 0.577

96.994
### Appendix J

**INTEREST AREAS ON THE CALIFORNIA OCCUPATIONAL PREFERENCE SYSTEM**

**CATEGORIZED AS TRADITIONAL OR NONTRADITIONAL FOR FEMALES**

<table>
<thead>
<tr>
<th>Field</th>
<th>Traditional/Nontraditional</th>
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<tbody>
<tr>
<td>Science (Professional)</td>
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</tr>
<tr>
<td>Science (Skilled)</td>
<td>Traditional</td>
</tr>
<tr>
<td>Technology (Professional)</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Technology (Skilled)</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Consumer Economics</td>
<td>Traditional</td>
</tr>
<tr>
<td>Outdoor</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Business (Professional)</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Business (Skilled)</td>
<td>Traditional</td>
</tr>
<tr>
<td>Clerical</td>
<td>Traditional</td>
</tr>
<tr>
<td>Communication</td>
<td>Nontraditional</td>
</tr>
<tr>
<td>Arts (Professional)</td>
<td>Traditional</td>
</tr>
<tr>
<td>Arts (Skilled)</td>
<td>Traditional</td>
</tr>
<tr>
<td>Service (Professional)</td>
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</tr>
<tr>
<td>Service (Skilled)</td>
<td>Traditional</td>
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Appendix K
CONSENT FORM

Dear Parent of ____________________________

A study is being conducted through the Career Decision Making Classes to determine if having speakers from the community will increase the choice of occupations for students. It would be greatly appreciated if you would sign this form and return it by your student to the Career Decision Making Class.

Thank you,

Nancy Helms
Director of Guidance

I give permission for my student ____________________________
to participate in the study described.

Parent's Signature

NH/gmc
REFERENCES


Ashby, M. S., & Wittmaier, B. C. Attitude changes in children after exposure to stories about women in traditional or nontraditional occupations. *Journal of Educational Psychology*, 1978, 70 (6), 45-49.


Burlin, F. D. Sex-role stereotyping: Occupational aspirations of female high school students. School Counselor, 1976, 24 (2), 102-08.


Fortner, M. L. Vocational choices of high school girls: Can they be predicted. Vocational Guidance Quarterly, 1970, 18, 203-06.


(Psychological Abstracts, 1978, 59, (2), No. 8302.)

Goldstein, R. L. Effects of reinforcement and female career role models on the vocational attitudes of high school girls. (Doctoral dissertation, Boston University, 1975, 36 (3-A), 1304.)


Harmon, L. W. The guidance needs of women. The Ohio State University, Columbus, Ohio: National Center for Research in Vocational Education, 1979.


Scott, K. P., & Feldman, S. Children’s reactions to textbook stories in which females are portrayed in traditionally male roles. *Journal of Educational Psychology*, 1979, 71, 396-402.


State Board of Behavior Sciences. State board of professional counselors Regulations of the board. Published in Richmond, Virginia, 1977.


Vita

Nancy Anne Eddins Helms

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Birthplace: Rockingham, North Carolina

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1980-1982 The College of William and Mary in Virginia
Williamsburg, Virginia
Certificate of Advanced Graduate Study in Education
Doctor of Education in Counseling

1968-1972 The College of William and Mary in Virginia
Williamsburg, Virginia
Master of Education in Guidance and Counseling

1957-1959 The College of William and Mary in Virginia
Williamsburg, Virginia
Bachelor of Arts in History

1956-1957 East Carolina University
Greenville, North Carolina

Professional Experience:

1972-1982 Newport News Public School System
Newport News, Virginia
High School Counselor and Director of Guidance

1960-1972 Newport News Public School System
Newport News, Virginia
Elementary and Secondary Social Studies Teacher
Abstract

THE EFFECTS OF ROLE MODELING AS A TECHNIQUE IN COUNTERACTING SEXUAL STEREOTYPING IN THE OCCUPATIONAL SELECTION OF HIGH SCHOOL GIRLS

Nancy E. Helms

The College of William and Mary in Virginia, July 1982

Chairman: Professor Fred L. Adair

Stereotyping of jobs by sex has a restricting effect on both sexes, but it has had a disproportionately negative impact on women. The need for methods to counteract occupational stereotyping is widely recognized (Steiger and Schlesinger, 1979; Monthly Labor Review, 1976). Since role modeling has been found in many settings to be a forceful factor in modifying behavior, Bandura's (1971) observational learning through role modeling formed the rationale for the study. This study proposes to answer the question, "Will using female role models in nontraditional careers for women affect the choice of high school girls in selecting nontraditional occupations for themselves?"

Forty high school girls enrolled in a Career Decision Making course were randomly placed in two groups. Group 1 consisted of twenty girls who received information about specific nontraditional occupations for women from women role models who worked in those occupations. Group 1 was referred to as the experimental group, while Group 2 which consisted of twenty girls who received the same occupational information from the classroom teacher, was referred to as the control group.

After treatment which covered eight sessions of thirty minutes each, the two groups were administered the following measurements: an occupational selection list, a display of brochures, a Career and Educational Planning Card, the California Occupational Preference System interest inventory, and an Attitude Assessment Scale. Data were analyzed using a Chi square test of significance.

Results were as follows:

1. Subjects in Group 1 chose more nontraditional occupations than those in Group 2 to a significant (p.=.0002) degree on the occupational selection list and approached significance (p.=.06) on the Career and Educational Planning Card. Group 1 chose more nontraditional occupations on all measurements although not to a significant degree on all measurements.

2. The Attitude Assessment Scale indicated a highly favorable attitude toward all role models. The influence of the classroom teacher as a model was recognized.

3. Role modeling was found to be effective as a technique in counteracting occupational stereotyping in high school girls.

Recommendations for further research in this area are included.