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Date

August 20, 1976

OCCUPATIONAL SEX STEREOTYPING BY CHILDREN:
CAN WE CHANGE IT?

by

ANNA KAY SECOR

A professional paper submitted in partial fulfillment
of the requirements for the degree

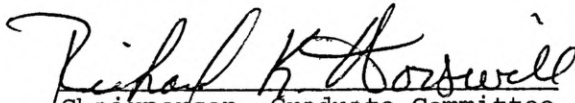
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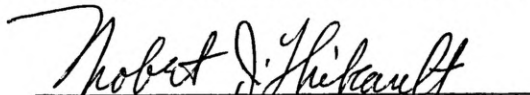
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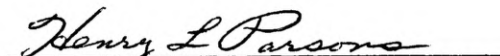
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ABSTRACT

This study attempted to investigate the degree that fifth grade children stereotype occupation according to sex in Bozeman, Montana in 1976, and whether such attitudes can be changed through a non-biased career education demonstration. Six social studies classrooms of about one hundred and fifty students at the Willson Middle School were randomly assigned to one of three treatments. Two classrooms were administered an experimental treatment and presented with non-biased career information. Two classrooms were assigned to an attention control treatment and presented with fingerprinting information with the purpose of controlling for a Hawthorne effect. Two classrooms were selected for a control treatment and received no attention or information. The researcher and a certified elementary teacher each taught one experimental classroom and one attention control classroom to control for the researcher's bias. The period of instruction for the experimental and attention control treatment groups was over a five day period. Four women whom the children had never seen administered the post-test to all the treatment groups on the same day. A chi square statistical test was used to test for significant difference among the treatment groups. The critical level of retaining or rejecting the null hypotheses was established at the $\alpha = .05$ level. The results indicated that there were significantly fewer stereotyped responses given by those children in the experimental treatment than by children in either the attention control or control treatments. There was no significant difference in the number of stereotyped responses given by the children in the attention control treatment and those in the control treatment. Finally, there was no significant difference between teachers regarding the number of stereotyped responses given by the children in the experimental and attention control treatments. The results of the study indicate that children have formed sex stereotypes of occupations by fifth grade level and that such sex stereotyping can be changed through unbiased career education. Suggestions for further study were made.

Chapter I

INTRODUCTION

Sex role stereotyping in our culture is a vehicle for placing human beings into certain molds based on their gender rather than their interests, abilities, feelings, and inclinations. Although it is difficult to differentiate the actual physiological and psychological sex differences and the differences which are primarily due to cultural influence (Maccoby, 1974), sex differences caused by sex role stereotyping may limit growth and development of human beings.

Our culture produces sex role stereotyping which begins at a very early age, is reinforced on all levels of society, and can have long term, devastating effects, especially for women. These effects may mean that many women will never find encouragement or opportunity to define and develop their potential or discover their limitations.

As a result of sex role stereotyping, women are particularly limited in education and career choice and training. Traditionally, women have been restricted to very limited career choices, and the restriction has been based on gender rather than interest and ability. Many occupations are sex specific. That is, they have been traditionally considered appropriate for one sex only. Effects of occupational stereotyping are evident at an early age and can result in wasted potential, possible contributions, and individual frustration. According to Steele, although all of us have been preconditioned to practice

prejudicial behavior as members of a stereotyping society, such behavior can be minimized or eliminated by awareness of sex biased actions (Steele, 1974).

Sex stereotyping of occupations might be eliminated and sex biased attitudes might be changed if the school systems would implement programs for making individuals aware of biases. This study has investigated the degree to which fifth grade children stereotype occupations according to sex and determined that such stereotyping attitudes can be changed through an education program. Results of the study have been disseminated to the schools.

Statement of the Problem

The problem of this study has been to investigate the degree that fifth grade school children stereotype occupations according to sex in Bozeman, Montana in 1976, and whether stereotyping attitudes can be changed by demonstrating non biased career education materials and information.

Purpose

Sex stereotyping of occupations begins at an early age. Children in many elementary school in Montana do not have access to career programs and unbiased information. Students may eventually be guided into careers based on gender rather than interests and abilities. The researcher's interest is to demonstrate to the schools the need for career

information and programs on the elementary level, and that such needs can be effectively met.

The researcher intended to demonstrate the value and feasibility of a sexually unbiased career education program. The study has determined that a significant difference in the degree of occupational sex stereotyping exists between those students in the experimental groups who have participated in the demonstration project and those students in the attention control and control groups.

The research has identified specific factors contributing to sex stereotyping and that such conditioning affects occupational choice in children.

The information derived from the investigation will be useful to parents, teachers, administrators, and counselors in planning and implementing programs free of sex bias for children on all levels. The information may illustrate to the community the need and value of treating students, and people in general, as equal human beings. It may contribute to economic productivity and career satisfaction of Montana men and women by utilizing their skills as fully as possible regardless of their sex.

If a similar career education program were instituted, students would be helped to clarify their values, set goals, make choices using their own skills and the experiences and knowledge of their counselors, teachers, and others (Stebbins, 1975).

Questions To Be Considered

The general questions that have been answered in Chapter II are as follows:

1. What is sex role stereotyping?
2. Does sex role stereotyping influence occupational choice?
3. What are the long term effects of sex role stereotyping?

The general questions that have been answered in Chapter IV are as follows:

1. Do fifth grade children stereotype occupations according to sex roles in Bozeman, Montana in 1976?
2. Does a difference exist in the degree that children sex stereotype occupations among those children in the experimental, attention control, and control groups?
3. Can the sex stereotyping process be changed through a career education demonstration?

Procedure

The problem was investigated by first selecting one of the two teacher's fifth grade social studies classes at Willson Middle School in Bozeman, Montana. Approximately one hundred and fifty students participated in the research project. The six social studies classes were then randomly assigned to one of three experimental treatments by using a table of random numbers. Two classes were assigned to an experimental group (and presented with an unbiased career education demonstration),

two were assigned to an attention control group (and presented with the same amount of class time instruction but in fingerprinting and received no career information), and two were assigned to a control group (who received no attention or instruction, only a post-test).

The researcher (Teacher I) and a certified elementary teacher (Teacher II) each taught one experimental classroom and one attention control classroom. The treatments were randomly assigned to each classroom as follows: Period 1 - Experimental (Teacher I); Period 2 - Experimental (Teacher II); Period 3 - Attention Control (Teacher II); Period 4 - Attention Control (Teacher I); and Periods 5 and 6 - Control with no instruction and no exposure to either teacher. Each experimental and control classes were taught for five days on April 20, 21, 23, 26, and 28, 1976 and the post-test was administered on May 4, 1976.

The post-test which resembled an instrument used by Schlossberg and Goodman in 1972, was administered to all groups on the same day by four women. Pairs of the women sat at opposite ends of a long table from each other. The distance between the two pairs of women was sufficiently far enough so that verbal responses could not be heard from one end of the table to the other. One in each of the two pairs of women asked the children questions while the other one checked the appropriate responses. Students were asked to respond to sixteen drawings representing occupations; eight that are traditionally considered masculine and eight that are traditionally considered feminine.

The children were interviewed individually and each was asked his or her name and age. The post-tester explained that this was not a test, that there were no "right" or "wrong" answers and to just reply with what he or she thought.

The students were asked to respond to the sixteen drawings which were shuffled and shown randomly. The post-tester stated about the appropriate drawing that this is a person who is a doctor, or an auto mechanic, etc., or this is a person who is a nurse, etc. Can a man work here? Can a women work here? The appropriate yes or no answer was then checked.

If a child stated that a woman couldn't work in a "masculine" occupation or that a man couldn't work in a "feminine" occupation, the response was considered to be stereotyped.

Limitations

Certain factors may have limited and influenced the results of the study. These factors include obtaining parental permission, process of random selection, and the possibility of only short term effects as a result of the mini education demonstration.

Approval of the administration was granted in order to satisfy school district requirements for conducting a study in the Willson Middle School. The researcher was awarded a federal grant, however, and in order to satisfy requirements to receive the grant, it was necessary to obtain individual parental permission for each child. A

copy of the parental permission letter is attached. This letter to the parents could have influenced and limited the data collected if parents discussed occupational choice or provided career information to their children outside the classroom prior to the study or did not permit their children to participate in the study.

Another potential problem is the process of random selection. Because the researcher used a public school to draw a sample of approximately one hundred and fifty students, it was necessary to work with the social studies classrooms whose teacher was cooperative and willing to give up classroom time in order for the study to be conducted. This factor influenced how the sample population was selected and may have limited how the randomly the students are selected.

Another plausible limitation was in presentation of the unbiased mini education demonstration. The possibility exists that the effect the demonstration will have on the children may be short term. Even though the post-test shows significant change in children's attitudes, there is no way (within the scope of this paper) to know whether the demonstration will have any long term effects. Ideally, such a program would be implemented much earlier and reinforced on all levels of the educational system.

Definition of Terms

Terms will be defined in the text of this paper as they are used by the authors of the references cited. For this reason, there will be no definition of terms in this chapter.

Summary

It has become evident that sex stereotyping exists on all levels of society. Sex stereotyping has many effects, including limiting development and growth of human beings, particularly women. This factor especially limits women in education, career choice, and training. This study has attempted to examine the degree that elementary children sex stereotype occupations, and has determined that such sex stereotyping can be changed. If such attitudinal change is possible, men and women may be more inclined to select occupations according to interest and ability rather than gender.

Chapter II

REVIEW OF LITERATURE

This chapter will present a review of literature dealing with: Sex stereotyping - What it is; Whether sex stereotyping exists; Contributing factors to stereotyping; Whether sex stereotyping influences occupational choice; Long term effects; Whether we can measure and reverse the conditioning process.

Sex Role Stereotyping: What Is It?

Sex role stereotyping is: the process by which people are defined by their sex rather than by their thoughts, feelings, interests, abilities. It is the portrayal of people in "typical" situations as determined by their own sex, and does not allow either males or females to express the totality of their humanity (Hagar, 1974,1).

Does Sex Role Stereotyping Exist?

Sex role stereotyping according to "appropriate" roles is created and reinforced on all levels to all persons in our society. Self images and social roles are acquired and conditioned through socialization and educational processes from infancy in accordance with sex stereotypes (Senterfitt, 1974).

Children learn about sex roles very early in their lives, probably before they are eighteen months old, certainly long before they enter school. They learn these roles through relatively simple patterns. . . . We throw boy babies up in the air and roughhouse with them. We coo over girl babies and handle them delicately. We choose sex related colors and toys for our children from their earliest days. We encourage

the energy and physical activity of our sons, just as we expect girls to be more docile. (Senterfitt, 1974,3) from Florence How, Saturday Review, 1971.

Girls are treated as if they were made out of weaker materials from infancy to adulthood and are required at school and at home to be quiet and passive. The behavioral traits needed to be successful in our economy, however, are ego strength and assertiveness. Although girls are rewarded in the classroom for passivity, their future opportunities are restricted. Feminine traits are not necessarily bad, but women are conditioned to exhibit traits which our society does not economically value highly (Steele, 1974).

Sexism begins at an early age and exists everywhere, but school policies that do not permit boys to take homemaking (or that assign boys to "Bachelor Living" classes) or girls to take industrial arts, limit and discriminate against both sexes by segregating according to sex. Boys and girls are treated differently by teachers. Sex-role stereotypes are rampant in textbooks. Sex traits are well established when children come to school, and the schools reinforce these traits and traditional sex roles, therefore, limiting children's opportunity to choose in work, education, and life. (Steele, 1974).

The Contributing Factors to Sex Stereotyping

Sex role has been created by our larger culture and is made of a list of "cultural prescriptions" which are used to condition the child by significant figures in his or her life.

Parents, peers and television characters use a variety of techniques (including modeling, reinforcement, expectations, and direct teaching) to draw the child's attention to the essential parameters of his or her "appropriate" sex role. As the child incorporates early lessons in sex role identity, he increasingly views sex role as a central component of self concept and begins to more actively select and assimilate characteristics which are congruent with his emerging sex role identity (Lee, 1974,4).

Exposing young children to television and children's books reinforces the initial conditions which began at home. . . . then as a child enters school, the education system continues the conditioning and stereotyping process (Senterfitt, 1974).

One very influential factor is the instructional material used in elementary school. Sexist attitudes exist in instructional materials since personality traits are identified with sex (Hagar, Note 2).

Women are often characterized as being weak, fearful, self effacing; men are strong, assertive and independent (Hagar, 1974,3)

Hagar (1974) refers to a study of school reading materials done out of Princeton, New Jersey by a group called, Women on Words and Images, which was completed in 1972. The purpose of the study was to locate an unbiased reading series. They found more evidence of sex stereotyping and compiled their results in a pamphlet called Dick & Jane as Victims: Sex Stereotyping in Children's Readers (Hagar, Note 2).

Hagar briefly summarizes the results of the study.

On a quantitative level, 2,760 stories were studied from 134 elementary readers published by 14 different companies. Boy-centered stories outnumbered girl-centered stories by 5:2

ratio; adult male characters outnumbered adult female characters by 93:1 ratio; male biographies outnumbered female biographies by a 6:1 ratio; and male folk or fantasy stories outnumbered female folk or fantasy stories by a 4:1 ratio. Of the stories studied, women were portrayed in 26 occupations, men in 147 occupations. (Hagar, Note 2,4) The differences were maintained on qualitative level. The male-oriented stories are based on themes of 'active mastery'. Male characters exhibit traits that are positive and desirable -- traits generally considered to be necessary for survival. . . . boys are heroes, saving everything from adults to children to planes and spaceships. Girls, if at all brave, generally assist the boys to help younger children or small animals. . . . the stories whose central characters are concerned with becoming adults generally show boys growing up to become men and girls growing up to become mothers. . . . both boys and girls ridicule girls as a group for being incapable, uninteresting, silly, vain, etc. Boys show little emotion of any kind; girls show them all, in extremes. Boys spend no time concerning themselves with their appearance; girls preen constantly (Hagar, 1974,5,6,7).

Adult role models maintain the stereotypes. Necessity is the only reason mothers work. The home is where they belong. However, fathers are enjoyable and go places with their children and help solve problems (Hagar, 1974).

The authors of the Dick & Jane as Victims publication wrote an addendum the year after the study was conducted.

Following the publication of Dick & Jane as Victims, we have been in consultation with the publishers, in an effort to effect changes in school readers, as well as their instructional materials. Our efforts to make the publishers aware of the need for change have not, by and large, been heeded. Although some publishers seem to be sympathetic with our message, little action has been taken. We have reviewed and analyzed many of the newer series of the readers, which have been issued since our book was published. Even the 1973 copy-righted textbooks continue to channel our children in the same traditional

unrealistic directions, with no allowance for differences in the emotional, physical, social, and intellectual level of each child (Hagar, 1974,7).

Another factor is that the help from public school counselors in setting occupational goals or in aiding students in selecting vocational technical programs has been very minimal. The biases of our society are reflected by counselors. Sex bias inhibits their performance. They perpetually limit girls' awareness of the range of job options open to them (Steele, 1974).

Does Sex Stereotyping Influence Occupational Choice?

Evidence indicates that sex role conditioning has very early visible effect.

By the time most girls reach fourth grade they believe that they have only four occupations open to them: nurse, secretary, teacher, or mother (White as in Senterfitt, 1974,4).

Research reveals that many occupations are believed to be "appropriate" for only one sex. The sex appropriateness of many occupations are reflected by the expressed choices of students (Vetter, Note 7).

Research also indicates that girls' awareness in careers is increasing in variety, but they cannot define what a day on the job would be like. However, boys can describe in detail career activities (Seigal, 1973).

Further research shows that the United States labor force is comprised of 37 percent women who fill positions in 75 percent of such

occupations as cashiers, bookkeepers, dressmakers, nurses, school teachers, librarians, secretaries, and telephone operators. This is explained with the idea that women may feel pressured to seek properly defined occupations for females, and men may feel compelled to seek occupations defined as masculine--or women may seek marriage and motherhood since these roles are often believed to be a major goal for them (Tully as in Falk, 1974).

In essence, women comprising 37 percent of the work force, are concentrated in these fields of employment: health, teaching, and office occupations. Analysis of available data indicates that schools are operating separate vocational education programs for women on all levels. Requiring that girls enroll in traditional, female-intensive offerings, contributes to limited job opportunities and lower earnings for women graduates. Two-thirds of all secondary vocational enrollments and 55.5 percent of Vocational Education Programs are comprised of women, but they are prevalent in non-wage earning (home economics, health, and office) occupations (Steele, Note 6).

One channeling device is the Office of Guidance and Counseling. Many girls who are interested in medicine and M.D. training are encouraged to settle for being a nurse instead. Women who attempt to enter heavily dominated male professions are confronted with the difficulties often without any encouragement or suggestions on how to attain support for what will most likely be a perpetual struggle (Senterfitt, 1974).

Further limitations of women's occupational choice are evident by discrimination against women on the college level.

Girls need higher grades and higher test scores to get into colleges. Although the percentage of women undergraduates has been increasing since 1950's so that it is now 41 percent, it is still less than the percentage of women graduates we had in 1920, when girls were 49 percent of the undergraduates or in 1899 when 53 percent of all undergraduate degrees went to women (Sandler as in Yates, 1974,5,6).

In 1972, 1,487,000 girls graduated from high school compared with 1,457,000 boys. More boys than girls enrolled in higher education although 30,000 more girls were eligible than boys (Simmon and Grant as in Steele, 1974).

In 1970-71, women were awarded 40 percent of the master's degrees and only 14 percent of the doctoral degrees granted at the graduate level in all four-year colleges and universities in the United States. More men and fewer women are found in the higher level of education completed (Steele, 1974).

The researcher located four separate studies dealing with sex stereotyping. The first study was conducted in 1973 in a middle class suburb in Boston, Massachusetts where an open-ended questionnaire was administered to sixty-one second graders. The questions included (1) whether or not they had thought about what occupation they would like to enter when they "grew up"; (2) the kind of work their fathers did; and (3) what kind of work they would most like to do when they "grew up" (Siegal, 1973).

The results of this study showed distinct sex differences in occupational choice is evident by the second grade. Ninety-seven percent had thought about their future occupations. Eighty-eight percent of the boys and 76 percent of the girls answered their father's occupation correctly. The boys showed greater spread over occupational choices than the girls did, and there was very little overlay in the most preferred and least desired occupations that the boys and girls chose (Siegal, 1973).

Another investigation was conducted in three Seattle suburbs in 1971 dealing with sex stereotyping. Two hundred and ninety fifth graders (141 boys, 149 girls) took part in the study. A series of questions were designed to show whether sex stereotyping was evident based on views of employment and career patterns, social roles in the home and family, and the child's views of his or her future life as an adult. Sex stereotyping was demonstrated by both boys and girls (Iglitzin, 1972).

The results of the investigation dealing with personality traits show that approximately 90 percent of boys and girls viewed boys as fighting more, and close to 75 percent of boys and 85 percent of girls saw girls as kinder (Iglitzin, 1972).

The findings of the study dealing with their future lives indicated sex stereotyping. Girls wanted to be teachers, artists, stewardesses, nurses, and veterinarians, while boys expressed a desire to be

craftsmen, engineers or scientists, professionals (doctors, lawyers, dentists), sportsmen, and pilots (Iglitzen, 1972).

This study indicated that the degree of traditional sex stereotyping of the major roles in society is very strong by fifth grade (Iglitzen, 1972,24).

The authors believe that the most significant result indicated that girls' views were consistently less stereotyped than the boys' (Iglitzin, 1972).

Another study was conducted in 1972 to determine the degree which elementary school children stereotype occupations according to sex. All the students in kindergarten and sixth grade responded to twelve drawings, representing work settings of six occupations traditionally considered masculine and six traditionally considered feminine.

A child's response was considered to be stereotyped when the child said, 'No, a man could not work here' about one of the feminine occupations, or 'No, a women could not work here' about one of the masculine occupations (Schlossberg, 1972, 267).

The results indicated that there was no significant differences between stereotyped roles as held by the kindergarden than those held by the sixth graders (Schlossberg, 1972).

Clearly the issue was not that they felt a woman's place was in the home, but rather that it was in certain specified occupations. By contrast, they did not feel that men had to be similarly limited (Schlossberg, 1972,269).

Another study was conducted in 1975 in Southcentral Michigan in three school districts each representing rural, suburban, and central

city locations. Fifteen girls and fifteen boys at the ages of six, eight, and ten years, at each of the locations, were selected according to a stratified random sample. Photographs depicting fifteen sex stereotyped occupations were used to measure the occupational role views of the children. One of three responses was possible for each occupation: male, female, or both. A score of one was given for a sex stereotyped response and a score of zero was given for a response of either the opposite sex choice of the stereotypic answer or the response "both" (Scheresky, 1975).

A three-way analysis of variance indicated that there was no significant difference in the responses of the children regarding their acceptance of occupational roles for men and women among the factors of age, gender, and location. The degree of sex stereotyping was not lessened with the number of years children had spent in school (Scheresky, 1975).

Long Term Effects of Sex Role Stereotyping

The long term problem associated with sex role stereotyping can have devastating, terminal effects for women. Such effects can mean that many women will never have the opportunity or the reinforcement to explore and develop their potential or realize their limitations.

Falk, et al. (1974) states that the adolescent female experiences a series of attitudinal conflicts between the idea of success defined

in terms of education and occupational attainment and marriage and motherhood on the other (Falk, 1974).

The education and talent of women seriously are underutilized, a waste to them and a loss to society. Women who stay in the labor market continuously earn only two-thirds the amount earned by men in the same occupation. . . . the higher the average earnings for an occupational group, the fewer the number of women who are employed in that group. Women tend to be clustered in those occupations which pay the least (McCune in Steele, 1974,99).

Yates (1974) reports similar findings and states that women are not paid equal pay for equal jobs and are channeled into the lowest paying jobs. In institutions of higher learning women are still paid consistently less than men who have the same qualifications, experience, and rank (Yates, 1974).

Few special explanations or concepts have been devised to deal with the special problems of the career development of women. . . . special problems exist for them as opposed to men and . . . most of the masculine based tests and theories fail to really provide a useful vehicle for the understanding of the career development of women (Osipow as in Falk, Note 1,13).

Can This Conditioning Process Be Changed?

One important prerequisite to reversing this sex role stereotyping of occupations conditioning process is to measure the degree of stereotyping. As stated earlier, it is evident from research that children come to school with sex role stereotypes clearly ingrained. One place such stereotypes can be changed is in the school system, preferably as early as possible.

Educational materials should portray women and men in non-traditional roles and occupations. . . . curricula should emphasize career awareness and exploration and cooperative work experience programs. . . . counselors should increase their knowledge and experience of the work world in order to inform female students about the wide range of job opportunities available, particularly in higher paying, male-intensive occupations. . . . USOE Guidelines should be disseminated to enforce Federal Laws guaranteeing full equality for female students and staff in education (Steele, 1974,6,8).

Attitudinal or overt behaviors which indicates the superiority of one sex over another must be avoided by teachers. Attitudes and behaviors of teachers, like the rest of society, need to change (Steele, 1974,6).

As members of a stereotyping society, all of us have been preconditioning to practice prejudicial behavior, which can be eliminated by awareness of sex biased actions (Steele, 1974,90).

Summary

Sex role stereotyping is created by our larger culture, is learned at home at an early age, and exists on all levels of society. Contributing factors to sex stereotyping include parents, teachers, counselors, instructional materials, television, and peers and are accomplished through expectation, reinforcement, modeling and direct teaching (Lee, 1974).

Many occupations are believed to be "appropriate" for only one sex indicating that sex stereotyping does influence occupational choice (Vetter, 1974). Men and women both feel compelled to seek

occupations defined appropriately as masculine and feminine, respectively (Steele, 1974). The entrance requirements of colleges and universities are more stringent for women than for men, and fewer women are enrolled in institutions of higher learning, although more women are eligible (Yates, 1974). Women who work, comprising 37 percent of the work force, are concentrated in jobs with limited job opportunities and paying the lowest wages (Steele, 1974).

Studies conducted by Schlossberg (1972, Iglitzin (1972), Siegal (1973), and Scheresky (1975) report the occupational attitudes of elementary school children and the degree to which they sex stereotype occupations. The studies indicate that sex stereotyping does influence occupational attitudes and choice.

Long term effects of sex role stereotyping for women can mean less opportunity to develop interests and abilities, less education, (Steele, 1974) more occupational limitations, less pay than men for equal jobs and equal qualifications (Yates, 1974), and attitudinal conflicts between job success and marriage and motherhood (Falk, 1974).

Sex role stereotyping should be altered within the school system. Institutional materials should be revised to alleviate sex biased attitudes, teachers and counselors should reflect attitudes and information that are equally fair to both sexes, and Federal Laws guaranteeing equality to females should be enforced (Steele, 1974).

Chapter III

PROCEDURES

The researcher investigated the degree that fifth grade school children stereotyped occupation according to sex in Bozeman, Montana in 1976, and whether stereotyping attitudes can be changed through a non sex biased career education demonstration. In this chapter the researcher will present: a description of the population that was researched along with the sampling procedure; controls of contaminating variables; procedures used to evaluate the data collected for this investigation; an explanation of the method of organizing data; statements of the statistical hypotheses which have been subjected to systematic testing; and the method of analyzing the data with an explanation of precautions which have been taken to assure accuracy of the data analysis.

Population Descriptions and Sampling Procedures

The population was the entire fifth grade of Willson Middle School in Bozeman, Montana in spring of 1976. A sample of six classrooms of fifth grade social studies students was selected with the cooperation of the classroom teacher. One of the three experimental conditions (1) experimental, (2) attention control, and (3) control was randomly assigned to each of the six classrooms.

A table of random numbers was used to assign experimental conditions to the classrooms. The experimental conditions were assigned

numbers one through three. As these numbers (1-3) appeared in the table of random numbers (reading across row one from left to right), the numbers were assigned to each of the six sample groups. If a number appeared more than twice, the next appropriate number was assigned to the group.

Experiment Design and Treatment

The research design included two experimental (treatment) groups, two attention control groups, and two control groups. One of each of these two groups was treated by this researcher and the other one by a certified elementary teacher.

The experimental groups received a sex free biased career education demonstration and a post-test. The attention control groups received attention and instruction in fingerprinting (without career information) and a post-test. The control groups received only a post-test. The experimental group children were presented with three sets of photographs depicting men and women in non-traditional occupational settings. The children were asked: what the person was doing; what kind of skill they thought such an occupation would require; how much training or school was necessary to work in that occupational role; who they usually thought of as doing that particular job, a man or a woman; if there was any reason why a man or woman couldn't do this job if he or she had the proper skills or training.

One film entitled "Free To Be You and Me" was shown and two filmstrips entitled "Job and Gender," and "Women's Work-Choice and Challenge" were shown over four days, showing part I on one day and part II on the next day.

Questions from the film and filmstrip manuals were presented to the students before and after each film and filmstrip.

The unbiased career demonstration was presented to one-third of the total sample, that is the two experimental groups which were intact classrooms. The experimental and attention control groups instruction took place over a five-day period. The five instructional days were: April 20, 21, 23, 26, and 28. The post-test was administered to all groups five days after the last education demonstration on May 4, 1976.

Contaminating Variables and Controls

One possible contaminating variable could have been the researcher's bias and belief in the career information. To control for this a certified elementary teacher taught one experimental group and one attention control group and the researcher taught one experimental and one control.

Another possible means of contamination might have been the researcher administering the post-test. To control for this variable, four women who had never been exposed to the children administered the post-test.

Another possible variable could have been that the post-test results of the two experimental groups could have been influenced by the attention given in presenting the career demonstration. To control for this variable (the Hawthorne effect), two attention control groups were given the same amount of instruction as the experimental groups in fingerprinting but received no career information.

Another potential contaminating factor may have been the process of random selection. Because the researcher used a public school to draw a sample of approximately one hundred and fifty students, it was necessary to work with classrooms whose teacher was cooperative and willing to sacrifice class time in order for the study to be conducted. One of the two social studies teachers agreed to allow his six social studies classes to participate in the research. Each of the six classrooms were then randomly assigned to one of the three experimental treatments by using a table of random numbers.

Method of Collecting Data

Schlossberg and Goodman developed an instrument in 1972 (Schlossberg, 1972) to measure the degree that children stereotype occupations according to sex. The researcher modified this instrument by changing several of the occupational titles and adding four titles and used it as a post-test. The post-test was administered to all groups of students on an individual basis in a room separate from the classroom by

four women five days after the last career education demonstration. The results of children who had been absent during the presentation of any of the demonstrations (career information and fingerprinting) were not included in the statistical analysis.

The instrument consisted of sixteen drawings of people in occupations, eight that are traditionally considered masculine and eight that are traditionally considered feminine. The sixteen occupational illustrations on the post-test were: secretary, nurse, waitress, seamstress, hairdresser, flight attendant, operator, librarian, auto mechanic, doctor, repairman, train engineer, chef, butcher, welder, and deep sea diver.

Two of the post-testers talked to each child for a minute and asked each his or her name and age. The post-tester also explained that this was not a test and that there were no "right" or "wrong" answers and to just answer according to how he or she thought. One of the two sets of women asked the questions and one recorded the response.

The students were asked to respond to twelve drawings of eight occupations traditionally considered masculine and eight occupations traditionally considered feminine. The cards with the drawings were shuffled and shown to each child in random order. The post-testers stated (about the appropriate drawings) that this is a person who is a doctor, or an auto mechanic, etc., or this is a person who is a nurse

or a waitress, etc. Can a man do this job? Can a woman do this job? The appropriate yes or no answer was checked in the block next to the name of the occupation. The children were not able to see the sheet the post-testers were checking (Schlossberg, 1972). A copy of the instrument is attached.

If a child stated that a woman couldn't work in a 'masculine' occupation or that a man couldn't work in a 'feminine' occupation, the response was considered to be stereotyped. Only the stereotyped responses were counted and used.

Statistical Hypotheses

The statistical hypotheses were set up to compare the post-test scores of the three treatment groups. Post-test scores were compared to determine the difference in the number of stereotyped responses among those children in the experimental, attention control, and control groups. The post-test scores were compared also to determine whether there was a difference in the two teachers.

From the questions in Chapter I evolved the following statistical hypotheses:

1. $HO_1: E = AC = C$
 $HI_1: E < AC = C$
2. $HO_2: E = AC$
 $HI_2: E < AC$

3. $HO_3: E = C$
 $HI_3: E < C$
4. $HO_4: AC = C$
 $HI_4: AC \neq C$
5. $HO_5: T_1E = T_2E$
 $HI_5: T_1E \neq T_2E$
6. $HO_6: T_1AC = T_2AC$
 $T_1AC \neq T_2AC$

Analysis of Data

All the null hypotheses were tested by applying a chi square to analyze the post-test scores of the three treatment groups. The post-test scores were added by hand and then examined for significant differences among the groups.

The $\alpha = .05$ level of significance was selected as a basis for retaining or rejecting the null hypotheses. This value is relatively useful in guarding against both Type I and Type II errors.

Summary

A sample of six classrooms of students was selected from the Willson Middle School fifth grade and those six intact classrooms were randomly assigned to one of three experimental treatments. The three treatments were: an experimental group (those who received an unbiased career education demonstration); an attention control group (those who received a fingerprinting education demonstration but no career

information); and a control group (those students who received no information or attention).

An instrument previously used by Schlossberg and Goodman (Schlossberg, 1973) served as a model for the instrument used by the researcher as a post-test. The researcher changed some of the occupational titles and added four titles.

The post-test was administered to all the children in each treatment group on an individual basis. The responses of those children who were absent during any one lesson of the career or fingerprinting demonstration were not included in the statistical analysis.

A chi square statistical test was used to analyze the null hypotheses. The $\alpha = .05$ level of significance was selected to determine whether the null hypotheses were retained or rejected.

The data were compiled by hand and rechecked to assure accuracy. Computation of statistical data was performed by a computer.

Chapter IV

INTRODUCTION

In this chapter the researcher will present the results of the study described in the preceding chapter. The null hypothesis from Chapter III are restated and statements of acceptance or rejection are made based upon the data presented. The questions from Chapter I and restated and answered. A brief summary of the results of the study concludes this chapter.

Results

The post-test scores of the three treatment groups were computed to determine whether there was a significant difference in the number of stereotyped responses of those children who received unbiased career information; those children who received attention and instruction but no career information; and those children who received no attention or instruction. The post-test scores were also tested to determine whether there was a significant difference in teachers and whether the researcher's bias influenced the instruction.

A chi square statistical test was applied to test for significant difference among the groups. The critical level of retaining or rejecting the following null hypotheses was established at the $\alpha = .05$ level.

The first null hypothesis (H_{01}) was stated as follows:

There will be no significant difference among the post-test scores (that is, the number of stereotyped responses) of those children in the experimental group and the attention control group and the control group.

The computed test for significance yielded a chi square value of 198.521 which is beyond the critical values of chi square at the $\alpha = .05$ level for $df = 2$ (chi square = ± 5.99), and therefore, the first null hypothesis was rejected. The results of the comparison showed significantly fewer stereotyped responses by the children in the experimental group who received career information than the children in the attention control and control groups.

The first question from Chapter I was:

Do children in fifth grade stereotype occupations according to sex roles in Bozeman, Montana in 1976?

Rejecting H_{01} indicated that children do stereotype occupations according to sex roles by the fifth grade in Bozeman, Montana in 1976.

The second null hypothesis (H_{02}) was stated as follows:

There will be no significant difference between the post-test scores (number of stereotyped responses of those children in the experimental group and those in the attention control.

The computed test for significance yielded a chi square value of 185.898 which is beyond the critical values of chi square at the $\alpha = .05$ level for $df = 1$ (chi square = ± 3.84), and therefore, the second null hypothesis was rejected. The results of the comparison indicated that significantly fewer stereotyped responses were given by the children in the experimental group who received unbiased career

information than the children in the attention control group who received attention but no career information. The results also indicated that the fewer number of stereotyped responses given by the experimental group children was attributed to the career information and not the attention they were given.

The third null hypothesis (H_{0_3}) was stated as follows:

There will be no significant difference between the post-test scores of those children in the experimental groups and those children in the control group.

The computed test for significance yielded a chi square value of 199.394 which is beyond the critical values of chi square at the $\alpha = .05$ level for $df = 1$ (chi square = ± 3.84), and therefore, the third null hypothesis was rejected. The results of the comparison showed that there were significantly fewer stereotyped responses given by the experimental group children than the control group children.

The fourth null hypothesis (H_{0_4}) was stated as follows:

There will be no significant difference between the post-test scores of those children in the attention control group and those in the control group.

The computed test for significance yielded a chi square value of 2.780 which is within the critical values of chi square at the $\alpha = .05$ level for $df = 1$ (chi square = ± 3.84), and therefore, the fourth null hypothesis was retained. The results of the comparison indicated that there was not a significant difference between the number of stereotyped response given by the children in the attention

control group and the children in the control group, neither of whom received career information.

The second question from Chapter I was:

Does a difference exist in the degree that children sex stereotype occupations among those children in the experimental, attention control, and control groups?

The results of the hypothesis testing of the comparisons of groups indicated that there was a significant difference among the number of sex stereotyped responses obtained from the three treatment groups. The children in the experimental group gave significantly fewer sex stereotyped responses than the other two treatment groups while a comparison of children in the attention control and control groups showed no difference in the number of stereotyped responses.

The third question from Chapter I was:

Can this conditioning process of sex role stereotyping of occupations by children be changed by a non biased, career education demonstration?

Rejecting H_{0_1} , H_{0_2} , and H_{0_3} indicated that there were significantly fewer stereotyped responses on the post-test by the children in the experimental group who received career information than the children in the attention control and control groups who did not receive career information. Retaining H_{0_4} showed that there was no significant difference between the post-test scores of the attention control group and the control group. These comparison results indicated that the

sex role stereotyping process can be changed through non biased career education information.

The fifth null hypothesis (H_{0_5}) was stated as follows:

There will be no significant difference between the post-test scores of the children taught by Teacher I (certified elementary teacher) and those children taught by Teacher II (Researcher) in the experimental groups.

The computed test for significance yielded a chi square value of 2.623 which is within the critical values of chi square at the $\alpha = .05$ level for $df = 1$ (chi square = ± 3.84), and therefore, the fifth null hypothesis was retained. The results of this comparison showed no significant difference between the number of stereotyped responses given by the children in the experimental group taught by Teacher I and the number of stereotyped responses given by the children in the experimental group taught by Teacher II.

The sixth null hypothesis (H_{0_6}) was stated as follows:

There will be no significant difference between the post-test scores of the children in the attention control group taught by Teacher I (certified elementary teacher) and the scores of the children taught by Teacher II (Researcher) in the attention control group.

The computed test for significance yielded a chi square value of .003 which falls within the critical values of chi square at the $\alpha = .05$ level for $df = 1$ (chi square = ± 3.84), and therefore, the sixth null hypothesis was retained. The results of this comparison showed no significant difference between the number of stereotyped

responses given by children in the attention control group taught by Teacher I and the number of stereotyped responses given by children in the attention control group taught by Teacher II.

Summary

Some generalizations can be made despite the limitations of this study. By the time children reach fifth grade level, they have formed sex role stereotypes for occupations. Generally, such sex role stereotyping indicates that fifth grade children perceive that certain occupations are masculine and others are feminine.

Post-test results of approximately one hundred and fifty fifth graders who were placed in one of three treatment groups were compared. This comparison determined that there were significantly fewer stereotyped response from those students in the experimental group who received unbiased career information than those students in the attention control and control groups who received no career information. The results of this comparison indicated that the fewer number of stereotyped responses given by the children in the experimental group is a result of receiving career information and not a result of receiving or not receiving attention.

The post-test results of the children in both the experimental and attention control groups receiving instruction from Teachers I and II were compared. This comparison determined that there was no

significant difference in the responses of the children taught by the two teachers. The results of this comparison showed that the lack of significant difference in the number of stereotyped responses from the two experimental groups was a results of non biased career information and not the researcher's bias.

Chapter V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The problem of this study was to determine the degree that fifth grade students stereotype occupations according to sex in Bozeman, Montana in 1976, and whether such attitudes can be changed with a non biased, career education demonstration. Six social studies classrooms of about one hundred and fifty students at the Willson Middle School were randomly assigned to one of three treatments. Two classrooms were administered an experimental treatment and presented with non biased career information. Two classrooms were assigned to an attention control treatment and presented with fingerprinting information with the purpose of controlling for a Hawthorne effect. Two classrooms were assigned to a control treatment and received no attention or information. The researcher and a certified elementary teacher each taught one experimental classroom and one attention control classroom to control for the researcher's bias. The period of instruction for the experimental and attention control treatment groups was for five days. Four women whom the children had never seen administered the post-test to all the treatment groups on the same day. A chi square statistical test was used to test for significant differences among the treatment groups. The critical level of retaining or rejecting the null hypotheses was established at the $\alpha = .05$ level.

The results showed that sex stereotyping of occupations is clearly established by the time children reach fifth grade. There were significantly fewer stereotyped responses given by those children in the experimental treatment than by children in either the attention control or control treatments. There was no significant difference in the number of stereotyped responses given by children in the attention control and control treatments. Finally, there was no significant difference between teachers regarding the number of stereotyped responses given by the children in the experimental and attention control treatments.

Conclusions

The study results have determined that significantly fewer stereotyped responses were given by the children who received the experimental treatment than the children who were assigned to the attention control and control groups. These results have also determined that there was no significant difference in teachers. This evidence concludes that sex stereotyping of occupations by children is clearly established by fifth grade. The evidence also showed that such occupational sex stereotyping attitudes can be changed. The data results showed that this change was not caused by special attention since the attention control treatment groups received the same amount of attention in fingerprinting information and lessons. The change was not a result of the researcher's bias and belief in the positive effects career information since a certified elementary teacher presented the

same unbiased career information lesson plans as the researcher with no significant difference in responses given by the children in both groups. The evidence indicates that the change in occupational sex stereotyping attitudes was a result of non biased career information.

Some of the comments and answers to questions during the study has caused the researcher to believe that the attitudinal change was intellectual and not emotional. Most of the children in the experimental group seemed to have no problem stating that a woman could be a fire fighter or a truck driver or that a man could be a house husband or a nursery school teacher during the career demonstration. However, when each child was asked, during the demonstration, to consider how he or she would feel about telling their parents or friends about a decision to pursue a non traditional occupation, many stated that he or she would not care to do that but it was okay for someone else to have such a job. Such comments might have been indications that children could comprehend the logic of a person feeling free to pursue any choice of job, and therefore, the children could make the intellectual change, but that they did not seem to make an emotional change.

One limitation mentioned in Chapter III was that it was not possible within the scope of this paper to determine whether the change in attitudes is permanent or temporary. The post-test was administered five days after the last classroom presentation and the stereotyping

attitudinal change was evident, but the researcher has made no arrangements to conduct further follow-up.

Many comments that were made to the four women conducting the post-test indicated that the children (including the children in the experimental treatment) seemed to have different ideas about the capabilities of men and women. Some of the comments included: "Well, a woman could be a doctor if she had special training"; "A woman could be an auto mechanic if she were really strong"; "A woman could be a welder if she had the right skills"; and "A man could be a nurse if he wanted to." Such qualifying comments seemed to indicate that children (including those who were exposed to non biased career information) believed that men were born with the knowledge and skills necessary for most jobs and that women must try to acquire such qualities.

One way to insure that children in Bozeman, Montana would have the opportunity to be exposed to non biased career information would be for elementary schools to incorporate such information as part of the classroom curriculum for every elementary grade level. Such a program might permit adequate exposure and reinforcement to allow for children to make a long term, emotional transition regarding occupational sex stereotyping. Such a transition might widen the scope for children in considering career choices.

Recommendations for Further Research

The results of this study lead the researcher to make the following recommendations.

1. It is suggested that similar studies to this one be conducted in the future.

2. It is suggested that in future similar studies that students at different ages be checked to determine the degree of occupational stereotyping.

3. It is suggested that in future similar studies, lower elementary grades be included to determine the degree of sex stereotyping attitudes and whether those attitudes can be changed.

4. It is suggested that in future similar studies that the researcher try to determine how and when children learn to stereotype occupations according to sex.

5. It is suggested that in future similar studies elementary reading materials should be reviewed to determine whether they depict occupational sex stereotypes.

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APPENDIX

1212 South Willson Ave.
Bozeman, Montana 59715
April 5, 1976

Dear Parent,

I am a graduate student at Montana State in education, and I plan to do my professional project in the Middle School in Bozeman. The project will include: Assessing whether boys and girls have formed stereotyped occupational choices by the fifth grade; Discussing student's career ideas with them; Presenting career information; And determining whether career information can be expanded. I plan to assess all the occupational attitudes of students in the selected fifth grade classes. I will not be able to present the career information to all of the students in the project.

I have received permission and support from the administration to conduct the project, but I need to obtain your permission for each child individually in order to receive a federal grant which I have been awarded to help me carry out the project.

I would very much appreciate your cooperation. If you have any questions, feel free to call me at 587-0897 after 5:00 p.m. .

Sincerely,

Ann Secor
Ann Secor

_____ has my permission to participate in
the project.

Signature

QUESTIONNAIRE ON OCCUPATION IDENTIFICATIONFEMININE ROLES

	<u>Man</u>		<u>Woman</u>	
	Yes	No	Yes	No
Secretary	_____	_____	_____	_____
Nurse	_____	_____	_____	_____
Waitress	_____	_____	_____	_____
Seamstress	_____	_____	_____	_____
Hairstylist-Beautician	_____	_____	_____	_____
Flight attendant	_____	_____	_____	_____
Operator	_____	_____	_____	_____
Librarian	_____	_____	_____	_____

MASCULINE OCCUPATIONS

Auto mechanic	_____	_____	_____	_____
Doctor	_____	_____	_____	_____
Repairman	_____	_____	_____	_____
Train engineer	_____	_____	_____	_____
Chef	_____	_____	_____	_____
Butcher	_____	_____	_____	_____
Welder	_____	_____	_____	_____
Diver	_____	_____	_____	_____

Name _____

Age _____