THE EFFECTS OF FEMALE ROLE MODELS ON OCCUPATIONAL EXPLORATION AND ATTITUDES OF ADOLESCENTS

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ABSTRACT

THE EFFECTS OF FEMALE ROLE MODELS ON
OCCUPATIONAL EXPLORATION AND
ATTITUDES OF ADOLESCENTS

By

Elizabeth Archer Dodson

This study investigated the comparative effects of three types of vocational materials on eleventh- and twelfth-grade students. Three treatment booklets were designed, one using single career female models, one using dual career female models, and one using standard occupational materials. Single career model refers, in this study, to a female model pursuing a career in the labor market, but not fulfilling the responsibilities of a mother and homemaker. Dual career model refers to a female model pursuing a career in the labor market while concurrently serving as a homemaker and mother.

Each booklet contained five occupational briefs covering the fields of personnel, dentistry, drafting, engineering, and machining. Using photographs and written autobiographical material, the single career booklet described how each of five models chose her occupation and the satisfactions she finds in it. The

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dual career booklet described how each model chose her occupation and her experience in combining home, family, and career. Both booklets also described the occupations under consideration using material from the Occupational Outlook Handbook. More lengthy excerpts from this volume were used for the standard occupational materials booklet. An active control booklet was also used. It contained two articles on the labor force from which all references to sex of worker or specific occupations had been deleted.

Three criterion measures were used to test effects of the experimental treatment booklets: atypicality of occupational choice, for women, or atypicality of future wife's occupation, for men; a test of career salience (likelihood of combining homemaking and labor force participation) or a test of future wife's career salience, and, finally, a measure of occupational exploration defined by sending a post card to an address provided with the treatment booklets.

The hypotheses concerning females predicted that female role models, and especially dual career female models, would be more effective for increasing the atypicality of occupational choice, career salience, and occupational exploration of eleventh- and twelfth-grade girls than standard occupational materials. Two hypotheses concerning males proposed that exposure to female role models could affect the attitudes toward

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future wife's career of high school males. The final hypothesis concerning males predicted that exposure to standard occupational materials containing male models would be most effective in encouraging high school males to engage in occupational information-seeking behavior.

The treatments were administered to eleventh- and twelfth-grade social studies students at New Berlin High School, New Berlin, Wisconsin.

Multivariate analyses of covariance using planned comparisons were used to test for significant differences. Univariate analyses were included within the multivariate analyses. Answers to a six-question pretest were used as the covariate. No significant differences were found among groups for either males or females at the chosen alpha level of .05.

The failure to support the hypotheses stated in this exploratory study suggests that several more specific background investigations need to be done before another investigation of this breadth is attempted. Questions need to be answered concerning the most useful media for presenting vocational information to high school students; characteristics of models most powerful with high school students; ways to use most effectively the dependent variables of

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career choice, career salience, and pre-addressed post cards; and alternative strategies for broadening girls' occupational exploration.

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Elizabeth Archer Dodson

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CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

Problem

Forty percent of all women are presently members of the labor force. Nine out of ten high school girls will work outside the home at some time in their lives. These girls will spend an average of 25 years as workers (Women's Bureau, 1971). Despite these realities most high school girls do not realize that outside work will occupy a major part of their lives and they do not plan for work or careers. Girls who do plan to work are likely to prepare themselves in a traditionally "feminine" occupational area. This study addresses the problem: How can counselors help girls to do more realistic life planning and vocational-educational decision making?

In the past, girls have had few role models who might have spurred them to consider roles other than that of homemaker (Keniston & Keniston, 1964; Hansen, 1972; Feingold, 1972). This study addresses the problem: What kinds of role models are most useful in influencing girls to do more realistic life planning?

Since the beginnings of vocational theory as a separate field in psychology, theorists have realized that influential background factors, stages of maturation, and career patterns are different for men and women. But the major vocational theorists have concentrated their research efforts on those who are in the majority in the work force. This study addresses a too often slighted area of vocational research, the "problem" of women's distinct vocational development.

In the last three years, occupational materials, particularly geared to girls, have begun to be designed and circulated (Thoni, Tennyson, Klaurens, & Hansen, 1970; Vetter & Sethney, 1971; Emma Willard Task Force on Education, 1971), but these units are limited because most of the activities which they suggest are for group or classroom use. For example, they emphasize role playing of occupations and group discussions of sexist employment practices. It is not clear how they might become part of a high school curriculum, for they are not directly related to usual high school classes. Their career education slant makes them most suited to elementary school use where one teacher oversees a student's total program and can integrate study of the world of work with other subjects. This study involves the development of career materials for girls which use an individual format. These materials would not need to

be presented in the classroom, but could be available in career libraries and guidance offices. Thus, this study addresses the problem of the lack of appropriate career materials for girls.

Purpose

The purpose of this study is: (a) to develop occupational materials using two types of female role models, (b) to evaluate the effect of these materials on occupational exploration, attitudes, and choice of eleventh- and twelfth-grade girls, and (c) to evaluate the effect of these materials on occupational exploration and attitudes toward future wife's occupation of eleventh- and twelfth-grade boys.

Review of the Literature

The background literature which supports the study encompasses three bodies of research: vocational development, sex-role learning, and social model learning.

At the time that the following review was made, there was no source which attempted a comprehensive survey of theory and research regarding women's vocational development. Hence, in preparation for the study, the investigator attempted to summarize available sources in this area. Although a literature review (Matthews, Feingold, Berry, Weary, & Tyler, 1972) has subsequently been published, the two summaries do include

and emphasize different material. In order to present the foundation upon which this study was built, a summary of theory and research on women's vocational development is presented here. Most of the studies cited are directly relevant to the present investigation. However, several studies are included so that the review will be comprehensive.

Vocational Development

Women have been neglected by vocational theorists and researchers. There is no systematized theory of women's vocational development. However, several trends and controversies in regard to feminine vocational development have emerged. This review will consider five trends which are relevant to the present study, as well as two authors who have presented sets of postulates which might serve as frameworks for research. The trends to be discussed are: life style planning, importance of high school years, importance of men's perceptions, career patterns, and the hypotheses of deviance or enrichment.

Life style planning.--This study addresses the problem: How can counselors help girls do more realistic educational-vocational planning? The literature suggests that women must consider life styles rather than careers. For this reason, the study focuses on two feminine life

styles which might be considered by adolescent girls. Ginzberg, Berg, Brown, Herma, Yohalem, and Gorelick (1966) appear to have been the first to discuss two aspects of life style planning. First, in deciding on a career women should not only focus on choosing an occupation, but also on the kinds of roles they desire as homemakers and mothers. They need to consider a total life style rather than a job alone. Second, women feel all their plans must be made on a contingency basis, for after marriage they may not have control over numerous life circumstances. Thus, in planning, women seek a high degree of occupational flexibility. Ginzberg arrived at these conclusions on the basis of a 1963 study of women who had completed at least one year of graduate work at Columbia. The women were chosen from all departments of the university except engineering and dentistry. Of those chosen 311 cooperated in answering an extensive questionnaire. On the basis of their answers Ginzberg hypothesized four basic feminine life styles (meaning attitudes and values not behavior) and the concept of contingency with its three underlying orientations of time perspective, fixity, and stance.

The four life styles were as follows:

1. Individualistic: "Women whose underlying attitudes and preferences indicate a striving after autonomy . . . "

2. Influential: " . . . women whose major drive is to influence people and events."

3. Supportive: " . . . women whose lives are geared to helping and supporting others. Some find expression for these needs and desires inside their homes, others outside in their work and volunteer activities."

4. Communal: " . . . women who direct their time and energy toward improving some part of the community. Their commitment frequently is to a religious, idealogical or political system."

Influential types were most likely to be labor force workers, followed by individualistic and communal types. Supportive types were least likely to be working.

Ginzberg's basic concept involves the primary difference between the planning of males and females. Whereas men know from childhood that they will have careers and can plan accordingly, the large majority of educated women want marriage and children and therefore feel that they must make all their plans on a contingency basis. Once she marries and has children, a woman has little control over many circumstances in her life. Thus, in her planning, she seeks a high degree of occupational flexibility. Ginzberg feels that a process of confrontation and response is imbedded in the concept of contingency.

The resolutions women reach in this process will vary according to the three basic orientations toward themselves and the outside world:

1. Time perspective: a continuum from decisions geared to the near future to decisions geared toward long-term objectives and goals.
2. Fixity: a continuum from a specific choice of working for a known objective in a particular field to an interest in working in general.
3. Stance: a continuum from an active approach to resolving problems which interfere with work to a passive stance, with no strong inclination toward work, but willingness to respond to circumstances and conditions.

Thus, the Ginzberg group attempted to conceptualize the unique aspects of feminine career choice. Two concepts, life style planning and contingency planning, seem to be the most useful aspects of their description. The idea of life style planning suggested the use of life style models. The models in the dual career booklet used in the present study are both life style and career models.

Importance of the high school years.--The years in which vocational planning is of most importance to girls was a consideration in planning this study. The

Ginzberg group pointed to the middle school and early high school years as the time when male and female vocational development differs and women's vocational interests no longer develop naturally.

In order to identify the process of vocational choice in its "purest" form, Ginzberg and his colleagues first chose to study a group of highly privileged boys whom they felt would be relatively unhampered by constraints of reality in their choice (Ginzberg, 1951). Later, wanting to establish the generality of their theory, this research team considered a group of underprivileged boys and a group of women. In this latter study, ten Barnard College students were interviewed intensively. The researchers found that girls' and boys' development was quite similar through the first two parts of what they called the Tentative Period. In the Interest Stage (about 11 years or so), a child begins to consider activities in terms of the potential they hold for intrinsic enjoyment. In the Capacity Stage, students consider their ability as well as likes and dislikes in their vocational deliberations. But at this point the two sexes begin to differ in vocational development, and by the Transition Stage (about age 17 or 18) girls are very much oriented toward marriage, rather than vocations.

Matthews and Tiedeman (1964) have also suggested that the high school years are crucial ones. Finding a drop in career commitment from junior to senior high school, they concluded that the imminence of the possibility of marriage seems to affect the relationship between attitudes toward career, marriage, and life styles. They considered the high level of career commitment in junior high school to be a pseudo-career drive. Thus, two research teams have pinpointed the high school years as crucial times of change in girls' vocational development.

The structure of our educational system also makes these years important to all students, for choice of high school course may be a crucial factor in determining life career. For these reasons, eleventh and twelfth graders were chosen as the age groups for this study.

Importance of men's perceptions.--An important consideration in planning this study was factors which influence women's career decisions. The review of the literature suggests that male friends, fiances, and husbands are the most persuasive influence for many women. As a part of the Harvard studies in Career Development, in which they found women's "pseudo-career drive," Tiedeman and Matthews also focused on the

dependence of life style upon attitudes toward career and marriage. They used a cross-sectional sample of women, ages 11 to 26, who had attended the same junior high school over a 15-year period. After comparing scores for each subject on a set of attitude scales with her plans for education, career, and marriage, Tiedeman and Matthews concluded that the effects of attitudes toward career and marriage on life style differ in three different developmental stages. They also felt there were five themes present in their data, two of which they described as follows:

1. It appears that many girls and women structure their lives on the premise that males view the female's use of her intelligence with distaste and that it is therefore wise to accept this situation if one wishes to marry. . . . This attitude would be an important deterrent to the realization of self through employment.

2. A second major theme in the effect of attitude upon life style occurs through the attitudes toward both homemaking and the presumably dominant position of men. . . . Perhaps they are a corollary of the first theme: i.e., when women perceive that males take a dim view of the expression of women's intelligence they feel inferior to men intellectually and adopt (perhaps defensively) a realm of their own, homemaking. (Matthews & Tiedeman, 1964, p. 382)

Thus, Tiedeman and Matthews' work pointed to the importance of women's perceptions of men's attitudes in career planning. One of the tenets of this study is that in order for women to think differently about career planning, men must think differently about

career planning for women. Tiedeman and Matthews are one of the research groups which support this idea.

In a study conducted in 1965 and 1966 (Nelson & Goldman, 1969) the boys queried favored wives' working in hypothetical situations, but completely rejected the dual role for their own wives. Almost all boys wanted a single career (homemaker) wife, while only half of the girls looked forward to this status. An investigation done in 1965 (Kaley, 1971) also found significant differences in men's and women's attitudes toward the professional married woman's ability to cope adequately with home and work roles. The investigator concluded that negative attitudes toward the professional woman's dual role are an indication of why few women prepare themselves for and pursue professional careers. She feels that until education includes principles of individual need and fulfillment through careers for both men and women, few women will enter professions.

A 1971 study (Hawley, 1971) examined the hypotheses that men's views play an important, although often unrecognized, part in the careers women choose. The researcher found that women's perceptions of male views of the feminine ideal differed significantly depending upon (a) the career group to which they belonged and (b) whether or not they were married. Women in traditionally feminine occupations tended to think men

view behavior in a sex-linked way as appropriately male or female, but women outside this career group did not see men as viewing behavior as sex-linked.

In a study of Stanford University women students, Katz (1968) found that the largest single influence in women's occupational decisions was their husbands, fiances, and boyfriends. Male friends were rated as more influential than parents, teachers, or female friends. Of these women, 83% also said they would give their husbands priority in decision making after marriage.

Katz feels that men closely tie occupational decision making to the search for identity. But a woman strongly ties the search for identity to her search for "the" man and her relationship with him.

All of the foregoing discrepancies between male and female views of the working wife, support the idea that if women are going to consider dual roles, men must also consider them.

Career patterns.--One of the problems in past research has been an oversimplification of women's career patterns. The study attempts to overcome this difficulty by focusing on a pattern which has not commonly been studied, the dual career. Patterns have often been divided into two: housewife versus career woman. Because of the many ways of combining work and

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marriage, women are said to have five (Fogarty, Rapoport, & Rapoport, 1971), seven (Super, 1957), or twelve (Mulvey, 1963) distinct career patterns. Super was the first to begin distinguishing among the various patterns. He proposed a seven-part classification system, as follows:

1. Stable homemaking career pattern: marrying while in or shortly after leaving school or college and having no significant work experience.
2. Conventional career pattern: working for several months or years and then becoming a full-time homemaker.
3. Stable working career pattern: entering the work force on leaving school or college and starting a career which becomes a life work.
4. Double-track career pattern: going to work, marrying and continuing with a double career of working and homemaking.
5. Interrupted career pattern: working, then homemaking with a return to working (while or instead of homemaking) when children are old enough to be left.
6. Unstable career pattern: working and homemaking and a continuing vacilation between the two.

7. Multiple-trial career pattern: working in a succession of unrelated jobs, with stability in home, resulting in the individual having no genuine life work.

Although Super gave specific attention to women only in suggesting the seven career patterns, his idea of self-concept implementation through career seems to be applicable to both sexes and has generated numerous studies of women (Englander, 1960; Kibrick & Tiedeman, 1961; Morrison, 1962; Brophy, 1959; Andersen & Olsen, 1965).

In writing The Psychology of Careers, Super was well aware of the limited opportunities and discrimination encountered by women in the work force. Although he mentions the limitation which feminine gender imposes on career motivation and stresses the difficulty of vocational development for all such "handicapped individuals," Super does not specifically integrate his awareness of these social realities into his theorizing on self-concept. But, in delineating women's seven career patterns, Super began a line of thought which has been continued and developed by other writers (Mulvey, 1963; Fogarty, et al., 1971). Although this study does not include all possible career patterns, it focuses on one pattern (dual career) which has not commonly been studied. It is a beginning departure from

the oversimplification of the housewife-worker dichotomy which may be responsible for some of the confusion of results of studies on women.

Deviance and enrichment hypotheses.--The final trend covered in this review is not directly related to the study. However, it is an important issue in the literature on women's vocational development. This trend has been to regard girls with career interests as deviant. Although these girls have sometimes been more politely called "pioneers," the stigma of abnormality has been laid on those with career aspirations. Two sociologists, Almquist and Angrist (1971), have attempted to change the traditional "deviance hypothesis" (girls with career interests have impaired relationships with their mothers, don't date, etc.) to an "enrichment hypothesis" which maintains that girls with career interests have had enriching personal and educational experiences not available to other girls. This change of emphasis should be a healthy one for girls being studied and counseled.

Are career-oriented girls and homemaking-oriented girls really different in personal characteristics? And are these characteristics distinguishable in the high school years? These are the questions most frequently asked in the deviance-enrichment controversy. Rezler (1967) is an example of one who has found significant

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differences between "traditionals" and "pioneers" among high school girls. On the other hand, Harmon (1970) examined pre-college Strong Vocational Interest Blank profiles and was unable to find any differences between groups of "career committed" and "noncommitted" women. Thus, she suggests that women who become career committed do so after high school graduation.

Although this study is not specifically directed toward solving the questions of deviance versus enrichment or pre-college versus post-college career commitment, these issues are related to the purpose of this study. Girls need enriched career education and counseling, and they need this experience early in their education in order that they may make vocational decisions and plans from a realistic view of the world of work and of the life styles open to them.

Although there are apparent trends in the literature on feminine vocational development, there is not as yet a satisfactory theory of women's careers. However two writers, Zytowski and Psathas, have proposed frameworks which might serve as foundations for research. These approaches are included not because the present study follows directly from them, but because they are the only attempts at theory building in the area of women's vocational development.

Zytowski.--This writer used the work of Ginzberg, Matthews and Tiedeman, Risch and Beymor, and Super, in addition to his own observations, to formulate nine postulates which might serve as a beginning for a theory of career development for women. The postulates are stated by Zytowski as follows:

1. The modal life role of women is described as that of the homemaker.
2. The nature of the woman's role is not static, it will ultimately bear no distinction from that of men.
3. The life role of women is orderly and developmental, and may be divided into sequences according to the prominent task in each. (For example, stages might be pre-school, school, young wife, childbearing, pre-school children, children in school, children marry, empty nest, widowhood.)
4. Vocational and homemaker participation are largely mutually exclusive. Vocational participation constitutes departure from the homemaker role.
5. Three aspects of vocational participation are sufficient to distinguish patterns of vocational participation: age or ages of entry, span of participation, and degree of participation.
6. The degree of vocational participation represented by a given occupation is defined as the proportion of men to the total workers employed in the performance of that job.
7. Women's vocational patterns may be distinguished in terms of three levels, derived from the combination of entry age(s), span and degree of participation, forming an ordinal scale.
8. Women's preference for a pattern of vocational participation is an internal event, and is accounted for by motivational factors.
9. The pattern of vocational participation is determined jointly by preference (representing motivation) and by external, situational and environmental, and internal, such as ability, factors. (Zytowski, 1969, pp. 662-664)

Zytowski ends an article on his nine postulates by expressing " . . . the hope that altered social

expectations and technological innovation will ultimately result in the obsolescence of this entire scheme." Zytowski's formulation is useful because it integrates several diverse theoretical trends. The premises of the present study are not in agreement with the first and fourth of Zytowski's postulates, but in trying to draw together several streams of thinking on women, Zytowski has performed a service.

Psathas.--This author (1968), like Zytowski, proposes a number of factors operative in women's occupational choice which might serve as a framework for systematic research. Psathas, however, takes a sociological approach. He criticizes developmental theories which focus on the psychological act of choosing and, thus, ignore the social and economic factors which affect the choice. He feels that the setting within which choices take place have an important influence on the choice and should be emphasized. The following factors operative in a sociological approach are discussed by Psathas:

1. The motivational significance of "extrinsic" and "intrinsic" rewards may differ between men and women.
2. Individual choice involves a series of decisions. Selection, by employers, is also a complex

process of decisions determining the chances that an occupational choice may be actualized. The conditions of the labor market and individual knowledge of these conditions affect choice and selection factors.

3. The relationship between sex role and occupational role has a major influence on entry of women into the work force. Important to the relationship between sex role and occupational entry are: (a) the intention to marry, (b) time of marriage, (c) reasons for marriage, (d) husband's economic situation, (e) husband's attitude toward his wife's working.

4. A woman will perform, or plan to perform, in both a marital and career role if: (a) the husband has a positive attitude toward his wife's working, (b) the husband shares in child care and/or housework, (c) when children are in school, (d) when she has continued to work after marriage, (e) when she has specialized education or has reached a high level of job competence.

5. The location of a family in the income bracket provides an economic setting, which will determine the level at which the daughter will enter the work-world. When parental resources are great, values and the congruence between

self-concept and occupational characteristics may play a major role in choice. When family resources are barely adequate, "objective" factors will be barriers to choice. With given levels of income, the chance of a girl pursuing a career which requires lengthy preparation, will depend on the number of male siblings, their ages and birth order in relation to the girl.

6. If income is held constant, the education and occupations of parents will provide a model for the child.

7. A major point of reference for the motivational system of an individual is his value system. Family and social class groupings are the major source of individual value orientations.

8. Aspirations for mobility are a value operative in occupational and mate selection. Occupations can provide opportunities for contacts with eligible males. The prestige rating of an occupation must be considered from the perspective of the girl (in comparison to her social class background) and the perspective of the potential mate.

9. The alleged rationality of occupational choice is a myth. Those choosing an occupation have imperfect knowledge of the number and types of roles available and of means of training and entry. In addition, the occupational market is not characterized by perfect competition.

Psathas' description of the relationship between sex role, occupational entry, and conditions for dual careers (factors 3 and 4) comes closer than any of the reviewed approaches to accounting for the phenomenon of feminine career choice which is of concern in this study. These factors support the contentions of this study that marriage and career are not mutually exclusive, but that marital aspirations and male perceptions are singularly important in feminine role choice.

Sex-Role and Occupational Stereotyping

The study approaches the problem that when women do plan for careers, they usually choose within a narrow range of traditionally feminine occupations. Other careers are regarded as exclusively male provinces. This occupational stereotyping seems to be closely related to sex-role learning.

Sex-roles are learned by children at a very tender age. By age five or six, children have a stable gender identity which involves the reality judgment,

"I really am and always will be a girl (or boy)" (Kohlberg, 1966). This judgment is central to the development of other aspects of sex-role attitudes which eventually come to include "sex-appropriate" occupational stereotypes.

There are three theoretical approaches to sex-role development: (a) the psychoanalytic view of identification as a sudden, total, and permanent incorporation of parental images, (b) social learning theory, which emphasizes teaching, reward, punishment, generalization, and imitation, and (c) a cognitive-developmental theory, recently proposed by Kohlberg, which claims that attitudes are not formed solely by biological instincts or cultural norms, but by a child's cognitive organization of the social world along dimensions of sex-role (Maccoby, 1966). The latter two approaches stress the importance of observational learning of social roles and thus have the greatest potential for research. These two theories will be described briefly.

Social learning theory.--According to social learning theory (Mischel, 1966) the acquisition and performance of sex-typed behaviors can be described by the same learning principles used to analyze any behaviors. Sex-typed behaviors are ones which usually elicit different rewards for one sex than for the other.

The first step in acquisition of these behaviors is observational or imitation learning, from live or symbolic models. This learning can take place without direct reinforcement to the observer, but the learning may be facilitated by: (a) a neutral relationship between observer and model, (b) a powerful social agent and a willingness to reward, and (c) observed or inferred consequences of the model's behavior.

Social learning does not deny intrapsychic processes, but discriminable antecedent events, not hopes and fears, are the referents used to predict and analyze behavior. "Normal" sex-role patterning is the result of learned conformity to cultural norms. "Abnormal" patterns are a result of behavior learned from deviant models or failure to learn because of poor teaching or lack of reinforcement. Sex-role identity is a product, rather than a cause, of social sex-role learning.

Cognitive-developmental theory.--Kohlberg's (1966) cognitive-developmental view, in contrast, contends that the child learns his sex and then selects his repertoire of behavior. First, there is the development of constant gender categories; second, the development of awareness of genital differences; and, third, the development of diffuse masculine-feminine stereotypes based largely on nongenital body imagery. Sex-role concepts change with age in universal ways because of universal age changes

in modes of cognitive organization. A child's concepts are the result of active structuring of his own experience. Kohlberg proposes five mechanisms by which the development of sex-role concepts leads to the development of masculine and feminine values. These are: (a) a tendency to schematize interests and to respond to new interests that are consistent with old ones; (b) a tendency to make value judgments consistent with a self-conceptual identity; (c) a tendency for prestige, competence or goodness values to be closely connected with sex-role stereotypes; (d) a tendency to see conformity to one's own role as moral, and as part of conformity to a general social and moral order, and (e) a tendency to value and imitate or model competent and prestigeous people, who are perceived as like the self.

In social learning theory, sex-role identity is a product of sex-role learning. In the cognitive-developmental view, sex-role identity is the reason for engaging in sex-role learning. Whatever its genesis, by age five or six, every child has a stable sex-role identity. With increasing age of an individual, concepts of sex-appropriate behaviors are enlarged and refined to encompass the realm of work and career. Thus, an individual is not free to choose any work role, but usually chooses according to occupational stereotypes of "sex-appropriate" work.

This study approaches the problem of occupational stereotyping by using female models in traditionally male jobs and by testing these models with both girls and boys. Many traditional divisions between "women's work" and "men's work" no longer make sense; yet, vocational materials perpetuate the stereotypes. The materials developed for this study ask girls to consider traditionally male vocations which are particularly suited to life styles of women and which are expanding occupational areas. This is accomplished through the use of social models.

Theories of Modeling and Imitation

Few experimental studies in the field of vocational choice have been reported in the literature. The work of Krumboltz and Thoresen (1964; Thoresen, Krumboltz & Varenhorst, 1967) with information-seeking behavior of high school students represents the largest and most significant thrust undertaken and has been replicated and modified subsequently by many others. All of these studies are based on the work of Bandura (1969) with modeling and imitation. The work of these investigators supports the usefulness of social models in affecting the vocational behavior of high school students. Bandura's stimulus contiguity theory asserts that contiguity of sensory stimulation is the sole

requirement for the acquisition of most forms of matching responses. In contrast to earlier theories of modeling and imitation, Bandura maintains that model learning is independent of motivation, reinforcement, and overt practice of behavior. Krumboltz and Thoresen (1964; Thoresen, et al., 1967) have found in several studies that models can be used to increase information-seeking behaviors of high school students.

Many studies of social modeling have been directed at identifying specific model characteristics which facilitate imitation. Three of these are of relevance to the present study: symbolization, competency, and sex.

Symbolic models.--Symbolic models (i.e., dolls, films, photographs, and audio tapes) have frequently been used in place of "live" or physically present models. A Bandura and Menlove study (1968) suggests that, although symbolic modeling is less powerful than live demonstrations of the same behavior, this disadvantage can be offset by using a broader sample of models. In their study children who had received a filmed multiple-model treatment performed at rates comparable to children in a similar study (Bandura, Grusec, & Menlove, 1967), who had observed a single

real-life model. In the present study multiple models will be presented through written autobiographical material and photographs.

Competency of model.--A model's competency affects his potency as a social model. Models seen by subjects as competent are more effective stimuli for matching behavior than incompetent models (Bandura, 1969). This study proposes that adolescent girls will regard a dual career (worker and homemaker) model as more competent than a single career (worker only) model. Thus, the dual career model will be a more effective social model. The foregoing hypothesis is based on the fact that female adolescents regard future marital status as the most important theme in their lives. It is the view of the experimenter that, because most females view marriage as the central focus of their lives, only when they see the possibility of combining marriage and career will they be able to seriously consider work and career plans. Thus, this study further investigates the previously studied model characteristic of competency.

Sex of model.--A third model characteristic, sex, is key in this experiment. Although sex of model has often been a factor in modeling studies, results have been contradictory (Krumboltz & Schroeder, 1965; Krumboltz & Thoresen, 1964; Thoresen, et al., 1967) and

it is not clear when same-sexed are preferable to opposite-sexed models (and vice versa). This study compares male and female models with both male and female subjects.

In summary, three model characteristics are relevant to the present study: symbolization, competency, and sex.

Role models in career development.--Several studies concerning role models have bearing on the present study. Although these modeling studies do not fall within the recent tradition of behavior modification, they support the use of role models as an important influence on career choice and attitudes.

Bell (1970) studied the relationship between the possession of role models in young adulthood and vocational performance during that same period. He used typescripts of tape-recorded interviews, which had been conducted with 142 males within Super's Career Pattern Study. The interviews took place when the subjects had been out of high school for seven years and were about 25 years old. Role model statements were tabulated and models were rated on (a) the number of statements made, (b) the apparent importance to the subject of the model, and (c) the life-sphere (occupational, family, etc.) to which the reference was made.

Subjects were compared on five criteria: equity change, occupational level, career success, internal-psychological career development, and external-socio-economic career development. Subjects who possessed "most positive" personal and occupational role models scored higher on the five criteria than did those whose role models were judged "moderate" or "least positive." Bell construes his findings to mean that role models are important to personal and vocational functioning, well into young adulthood.

A more specific use of role models as incorporated within this study was adapted from the studies of two sociologists, Almquist and Angrist (1970, 1971). They hypothesize that career aspirations of college women are explicable within a combined role model-reference group framework. For them, a role model provides a technical explication of how a role is to be performed, and may or may not motivate, influence, persuade, or reward. They believe that, in order to have career aspirations, women must have role models who illustrate how to combine marriage and career and they hypothesize that the most important model of this type is the mother. In a study of one class of women in a small co-educational university, Almquist and Angrist found support for their hypothesis that "career orientated women will more frequently have working mothers and mothers with higher

educational attainment." However, they also found that career salient women were more likely to indicate teachers or other professionals as the most important source of personal influence on their occupational choices. These faculty and occupational role models were both men and women and the authors could not ascertain from their data whether the women were models of a dual career life style or whether sex of the model was irrelevant. The authors question whether women faculty would be effective role models or whether role models at intermediary stages (such as graduate students) might be more effective examples of the possible.

Thus, Almquist and Angrist point to the importance of role models for career-oriented women. Their data indicate that the influence of highly educated and working mothers is important to career-oriented girls but that other role models are more important.

Another study (Vogel, Broverman, Broverman, Clarkson, & Rosenkrants, 1970) examined sex-role perceptions of male and female college students with reference to the students' and mothers' employment history. They found that both men and women with employed mothers perceive significantly smaller differences between masculine and feminine roles than do men and women with homemaker mothers. The women's perceptions of the sex roles were more influenced by

mother's employment than were the men's perceptions. Although this study does not specify the effect of mother's employment on women's career aspirations, it could be assumed that an expanded perception of the female role would include greater career orientation. This study, too, supports the efficacy of the idea of dual career role models as helpful to women.

The "working mother" role model in the just-cited study may have been important in reducing "home-career conflict" in their observers. Another study (Farmer & Bohn, 1970) has indicated that the level of vocational interest in women would be raised if home-career conflict were reduced. Fifty working women took the Strong Vocational Interest Blank for women twice; first, with standard instructions, and second, with experimental home-career conflict reducing instructions. After the experimental instructions, career scale scores increased and home scale scores decreased. The Farmer and Bohn study is directly related to the present study, for one of the assumptions in this study is that a dual career model would reduce ideas about home-career conflict and thus enable a female student to become more involved in the vocational selection process, rather than ignoring it because marriage is her first priority.

Summary

In summary the background literature for this study encompasses three bodies of research: women's vocational development, sex-role learning, and theories of modeling and imitation. Because the vocational development of women has been a neglected topic, it has been given most emphasis in this review. Five themes relating to women's career development have been discussed: life style planning, importance of the high school years, importance of men's perceptions, career patterns, and the hypotheses of deviance and enrichment. Two authors, Zytowski and Psathas, have proposed comprehensive frameworks for the study of women's careers. These propositions were also reviewed.

Bandura's research on the use of social models in learning was discussed, with emphasis on the model characteristics of concern in this study: symbolization, competency, and sex. Finally, a number of studies of role models, not falling within the tradition of behavior modification but supportive of the importance of models in career development, were reviewed.

CHAPTER II

EXPERIMENTAL DESIGN AND PROCEDURES

Definition of Terms

Single Career Model refers, in this study, to a female model pursuing a career in the labor market, but not fulfilling the responsibilities of a mother and homemaker.

Dual Career Model refers, in this study, to a female model pursuing a career in the labor market while concurrently serving as a homemaker and mother.

Career Salience refers to the extent to which women plan to participate in the labor force, in combination with homemaking and child-rearing. Career salience is a special type of achievement that involves a woman planning for the normative female role of wife-mother-homemaker and the additional role of labor force worker.

Overview

The primary purpose of this investigation was to test the effect of two types of female role models

(single career and dual career) on the career salience, atypicality of occupational choice and career exploration of eleventh- and twelfth-grade girls. The study also investigated the effect of female role models on occupational exploration and attitudes towards future wife's career of eleventh- and twelfth-grade boys.

The treatments were presented in the form of booklets. Both of the experimental treatments and the standard occupational materials treatment included five career briefs. The careers used were chosen to represent four distinct vocational areas: dentistry (biological sciences), engineering (physical sciences), personnel (business), and drafting and machining (technical and skilled trades). The selected careers also represented three levels of training: vocational school or A.A. (technical and skilled trades); undergraduate degree (engineering and business); and graduate work (dentistry).

Reprints from the Occupational Outlook Handbook (1972) were chosen as the standard occupational materials to be used for the standard materials group. These reprints average 1,500 to 2,000 words, and usually include one photograph. They were edited to approximately 1,350 words, with a maximum of 10% variation so that all occupational briefs were approximately the same length.

The single career treatment briefs were composed to include all of the essential information from the OOH

briefs, but also included personal information about a real life model as well as two pictures of her in a work setting. The dual career treatment briefs were composed to include the same core of occupational information in addition to personal information about the model and her experience in combining the roles of worker and homemaker. These briefs included one picture in a work setting and one at home. To ensure equivalency of models, the same woman served as both the single career and dual career models for each occupation.

Pre-organizers in the form of attention-getting headings preceded each occupational brief. Three or four multiple choice review questions to be answered in the booklet were inserted at intervals within each brief. Directions instructed the subject who had difficulty answering or felt unsure of his responses to re-read the section until he felt he had mastered the material. Thus, the two experimental booklets and the standard materials booklet consisted of five occupational briefs of one of the model types.

The fourth booklet contained two articles on the labor force which did not include either information on specific careers or references to sex-related occupational differences. This booklet was considered to be an active control group booklet. Since students within each classroom were to be assigned to the four different groups,

an active control group was preferable to a no-treatment group because this device made it possible to maintain the appearance that all students were engaged in the same activity. The control group booklet was not considered to be a treatment because the material it presented did not relate to the variables under study. That is, although control group members read material on the labor force, there was no reason to believe that this material would make their posttest responses different from what they would be had they received no treatment. The outside covers of both treatment and control booklets were of identical format, were titled "Career Education, 1973," and were designed with a space for student name and the date.

Hypotheses

Two groups of hypotheses were tested.

Hypotheses regarding females:

1. Female students receiving the dual career model treatment, in contrast with students receiving the single career model, standard materials, or active control group booklet,

    a. will choose more atypical (for women) occupations;

    b. will receive higher scores on career salience on the Angrist Life Style Index;

    c. will engage in more occupational information-seeking behavior, defined by sending a post card to an address provided with the treatment booklets.

2. Female students receiving the single career model treatment, in contrast with students receiving the standard materials or active control group booklet,

   a. will choose more atypical (for women) occupations;

   b. will receive higher scores on career salience on the Angrist Life Style Index;

   c. will engage in more occupational information-seeking behavior, defined by sending a post card to an address provided with the treatment booklets.

Hypotheses regarding males:

3. Male students receiving the dual career model treatment, in contrast with students receiving the single career model, the standard materials or active control group booklet,

   a. will choose more atypical future wife occupations;

   b. will receive higher scores on future wife's career salience on an adaptation of the Angrist Life Style Index.

4. Male students receiving the single career model treatment, in contrast with students receiving the standard materials or active control group booklet,

   a. will choose more atypical future wife occupations;

   b. will receive higher scores on future wife's career salience on an adaptation of the Angrist Life Style Index.

5. Male students receiving the standard career materials in contrast with students receiving the other three treatments, will engage in more occupational information-seeking behavior defined by sending a post card to an address provided with the treatment booklets.

Method

The experimental study involved the development of vocational materials using two types of female models and the evaluation of these materials with eleventh- and twelfth-grade students. The following basic steps were involved: (a) locating five female role models in the specified career areas and developing the two experimental booklets based on the jobs and lives of these women, (b) preparing the standard materials and active control treatment booklets, (c) describing the population to be treated, (d) collecting pretest data, (e) presenting the treatments, (f) collecting outcome data, and (g) analyzing the data.

Experimental Design

The dissertation combines two similar, but separate studies, one of females, one of males. In both, a pretest, posttest, control group design (Campbell & Stanley, 1963) was used. In both, four treatments and three outcome measures were used resulting in a 4 x 3 data matrix. The four treatments were: (a) single career female role model booklet, (b) dual career female role model booklet, (c) standard occupational materials

booklet, and (d) labor force articles booklet (active control group). The three outcome measures used were: (a) atypicality of occupational choice in answering the questions, "list the three occupations in which you are most interested at present," (for females) and "list the three occupations you would most like for your (ideal future) wife," (for men), (b) the Angrist Life Style Index for women and an adapted version of this index for men, and (c) a measure of occupational information-seeking behavior, defined by sending a post card to an address provided with the treatment booklets.

The design is an extension of one of Campbell and Stanley's "true experimental designs," the pretest-posttest, control group design. A symbolic representation of the design is presented below. R indicates random assignment of subjects to treatment group, X represents an experimental event, and O signifies the measurement process (Campbell & Stanley, 1963).

Females

First Day	Second Day
R O X_1 O	R O X_1 O
R O X_2 O	R O X_2 O
R O X_3 O	R O X_3 O
R O O	R O O

Males

First Day	Second Day
R O X_1 O	R O X_1 O
R O X_2 O	R O X_2 O
R O X_3 O	R O X_3 O
R O O	R O O

Campbell and Stanley emphasize 12 factors which can jeopardize the validity of experimental designs. Eight of these factors pertain to internal validity and four to external validity. The pretest-posttest, control group design offers the advantage of controlling for all eight of the sources of internal invalidity. The means of control for the eight variables will be considered as they apply to the present study. The simultaneity of experimental and control sessions means that maturation can be eliminated as a possible explanation of group differences. Using more than one experimenter could introduce invalidity in the form of unique intrasession histories if treatments and experimenters were confounded. However, this source of invalidity is controlled for by the random assignment of treatment materials within each of the several groups. Testing effects are controlled in that they are identical for both experimental and control groups. Instrumentation is controlled since the measuring instruments are fixed--in the form of printed tests. Regression effects

are controlled by random assignment, for the control group regresses as much as does the experimental group. Selection is controlled to the extent that randomization assures unbiased assignment of subjects to groups. Differential mortality rates are controlled by using (for one analysis of the data) all subjects who completed both pretest and posttest, including those in the experimental groups who did not receive the treatment. The assumption that no mortality biases are present is also partially checked by examining the number of those who completed the pretest, but not the posttest. The last source of internal invalidity considered by Campbell and Stanley is selection-maturation interaction. Since both of these factors are controlled for, their interaction is not of concern.

The four factors which may jeopardize external validity are: the reactive or interaction effects of testing, the interaction effects of selection biases and the experimental variable, reactive effects of experimental arrangements, and multiple-treatment interference. A pretest might increase the respondent's sensitivity to the experimental variable and make the results obtained for a pretested group ungeneralizable to unpretested groups. It might be argued that the brevity of the pretest used in the present study would mitigate against its reactivity. However, the design used does

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not control for the possibility of interaction between testing and the experimental treatments. Nor does the design control for the possibility that effects demonstrated may hold only for the unique population from which the experimental and control groups were chosen. The present study was carried out in two grades of one school. Thus it may be that the results are applicable only to eleventh- and twelfth-grade students in that particular school. To increase generalizability it would be necessary to increase the number of schools, grades, and nonschool situations in which the experiment is carried on.

The pretest-posttest, control group design does not necessarily control for reactive experimental arrangements. In the present study several techniques were employed in order to make the experiment as nonreactive as possible. Examples of these techniques are the inconspicuous random assignment in the process of distributing booklets and the booklet introductions (Appendix G) which emphasized the program, as part of the Career Education movement, but minimized its experimental nature.

The final source of external invalidity considered by Campbell and Stanley is multiple-treatment interference. This last source of invalidity pertains to multiple factor designs where interactions may

obscure the character of main effects, so that for purposes of generalization, effects should be plotted and examined.

In summary, the pretest-posttest, control group design controls for eight common sources of internal invalidity, but does not automatically provide external validity.

Schedule of Experimental Procedures

The various aspects of the experiment were completed according to the following schedule during the period February through June, 1973.

1. Models identified and their agreement to participate secured--Mid February through March 9, 1973.
2. Schools willing to participate identified--March 1-9, 1973.
3. Autobiographical materials written by role models--March 9-31, 1973.
4. Role models photographed at work and at home--March 23-24, 1973.
5. Photographs developed and printed--March 31-April 1, 1973.
6. Booklets edited, copy typed and paste-ups made--April 7-15, 1973.

7. Treatment materials field tested--April 26, 1973.
8. Field test data tabulated and treatment booklets revised--April 26-27, 1973.
9. Revised copy typed and new paste-ups made--April 28-May 7, 1973.
10. Treatments administered to subjects at New Berlin High School--May 16-17, 1973.
11. Posttest data rated--June 18-July 2, 1973.

Selection of Models

Models were sought who were in their twenties or thirties, had at least one child living at home, and were involved in one of the designated careers. These requirements were based on the commitment to use real life models and the plan that the same woman would serve as both the single and dual career models. Locating models in the Milwaukee area who fit the criteria outlined above proved to be extremely difficult. The paucity of available models made it impossible to be selective. Although it would have been preferable to be able to choose the most prestigeful from among several models, this was not possible.

Preparation of Treatment Booklets

Initial contact with the five models was made by telephone. After each woman had agreed to serve as a

model, she was sent a letter describing the type of paragraphs which she was being asked to write (Appendix A). Later each model was asked to write one additional section. The requirements for these sections (Appendix B) were delivered to the model at the time that photographs were taken. Thus, each model submitted three sections covering: (a) influences on career choice, (b) social aspects of work, and (c) the experience of combining career and homemaking.

Three photographs were taken of each model, two in her work setting, and one at home. The home pictures of models also included one or more family members.

In developing the booklets, the influences on career choice section was used in both the dual career and single career booklets. The single career booklet included the sections on social aspects of work and two pictures of each model in a work setting. In contrast dual career booklets included the sections on the experience of combining career and homemaking, one photograph taken at home and one photograph taken at work. Both booklets included identical occupational descriptions excerpted from the Occupational Outlook Handbook. The experimenter edited the model self-descriptions and the occupational descriptions so that length and content were as similar as possible. After

field testing it was apparent that the materials were too lengthy to be read in one class period and the briefs were further edited.

In developing the standard occupational materials booklet, the Occupational Outlook Handbook briefs covering the five selected occupations were edited so that all five briefs were of a length comparable with the experimental booklets. The OOH photographs were reproduced.

The active control group booklet was composed of two articles from the Monthly Labor Review, "Students and Summer Jobs" (Perrella, 1971) and "A Look at the Four-Day Workweek" (Hedges, 1970). These articles were chosen because of their interest value for high school students and relative readability. References to sex of worker or specific occupations were deleted from the articles.

Multiple choice review questions were written and inserted at intervals within each treatment booklet. The review questions were designed for two purposes. They were intended to serve as motivators to help ensure that students read the booklets. In addition, responses to them indicated which students had actually read and comprehended the material and thus had been exposed to the treatment. The use of this information in the statistical analysis will be explained in a succeeding section entitled "Review Questions."

In the introduction (Appendix G) to the booklets, the purpose of the review questions was explained as: (a) aids in reading comprehension, and (b) for later use in evaluating the readability of the booklets. Subjects were instructed to answer the questions in the text and, when they felt unsure of an answer, to re-read the preceding section.

Legal size (8 1/2 x 14) paper, folded once, was used for reproduction of the booklets. The same introduction and instructions were printed on the first page of each type of booklet. The posttest entitled "Ideas About Your Future" was printed on the last two pages of each booklet. Since the posttests were different for men and women, two different colors were used for the booklet covers as an aid in dissemination. On the inside back cover of all booklets the following message was printed: "Are you interested in getting more information about occupations? If so, fill out and send in this pre-addressed post card." Beneath this instruction a printed post card was stapled to the booklet cover.

Field Testing of Treatment Materials

The field study had two primary purposes. First, this study was to determine which of fifteen questions concerning vocational and family roles selected from the Attitudes Toward Women Scale (Spence & Helmrich, 1972) and the Maferr Inventory of Feminine Values

(Maferr Foundations, Inc., 1968), would be most useful in discriminating between conservative, moderate, and liberal attitudes toward feminine vocational roles.

The second goal of the pilot study was to determine the length of the booklets which would allow all students to receive materials and complete reading them within 45 minutes or one class period. In the final study, students were to be allowed a double class period to read the materials, but booklet length was to be adjusted so that the materials could be read in half this time.

Seventy-one female and 64 male eleventh- and twelfth-grade students from Nicolet High School in Milwaukee participated in the field study. Of the fifteen questions tested, the six with the highest variability in answers were chosen to be used for the pretest (Appendix E).

When the reading times for the four booklets had been tabulated it became clear that altering booklet length so that all students would be able to finish was not a realistic goal. For material which the slowest student could finish in 45 minutes, the majority of students would complete in 15 or 20 minutes. The slow readers composed approximately 10% of the sample of 135. Rather than severely reduce the power of the treatments by an extreme reduction in their length, it was decided

to gauge the booklet length so that 90% of the students would be able to receive their materials and to complete the pretest, treatment, and posttest within 45 minutes.

The four booklets used in the pilot study varied somewhat in length. In comparing the reading rates among the four groups there appeared to be a kind of "Parkinson's Law" in operation, for despite the variation in length approximately the same percentage of students failed to finish within each treatment group.

Description of Sample

The subjects were all eleventh- and twelfth-grade social studies students in attendance on May 16 and 17, 1973, at New Berlin High School in New Berlin, Wisconsin, a suburb of Milwaukee. The students at New Berlin are primarily the children of white, middle-class, blue-collar workers. According to a counselor 20 to 25% of each graduating class goes to college, but the majority do not.

Half of the junior and senior social studies students met on Mondays and Wednesdays. The other half met on Tuesdays and Thursdays. On the first day of the study, a Wednesday, 113 women and 114 men were given booklets. On the second day of the study 96 women and 98 men participated. Because experimental conditions were not maintained on the second day of the study,

these data were not considered usable for analysis. Only data collected on the first day of the study are analyzed in this report.

Presentation of Treatments

Prior to the study, the social studies teachers were told of the purpose of the study and the role they were being asked to perform. Teachers were presented with a set of instructions (Appendix J) which were discussed and explained.

At this time the teachers also disclosed the numbers of males and females in each of their classes so that packets of booklets could be prepared. A classroom packet was prepared by combining proportional quantities of each treatment group and then arranging the treatment groups in random order, using a table of random numbers. Thus, when the booklets were passed out by the teacher, students were automatically randomly assigned to treatment groups.

The six-question pretest was folded and placed inside the front cover of the booklet. The pretest was collected by the teachers as soon as the students had completed it.

While the booklets were being read by students, the experimenter wandered in the hall outside the classrooms where the study was being conducted in order

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to observe the conditions. On the first day satisfactory testing conditions were maintained. There was almost no interaction among students during the testing period. Unfortunately this was not true on the second day, when students encountered two major disruptions. A May tradition at New Berlin is "Senior Skip Day" when the graduating class absents itself en masse and convenes in a nearby park for an unofficial graduation celebration. The second day of the study turned out to be "Senior Skip Day." Attendance was down and spirits were high. By afternoon there were no seniors in school. A second disruption occurred on this Thursday. An announcement came over the P.A. that a street light in the parking lot was about to topple and that cars parked in the social studies parking area should be moved. Most of the teachers left their rooms to be certain that their cars were not endangered and one teacher was required to move his car. There was a great deal of chatting in the classrooms during this incident. Because of these two disruptions the usefulness of the second day's results is suspect and these data have not been analyzed in this report. The investigation was originally planned as a replicated study, with the data from the two days to be analyzed separately. It is regrettable that this plan could not be carried through.

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The Pretest

The pretest included six multiple choice questions. The options for each question were as follows: strongly agree, agree, no opinion, disagree, strongly disagree. All questions were stated so that strongly agree represented the most conservative alternative and strongly disagree the most liberal position. In scoring, values were assigned as follows: strongly agree = 1, agree = 2, no opinion = 3, disagree = 4, and strongly disagree = 5. For each subject these values were tabulated and divided by the total number of questions answered. Thus pretest scores ranged from one to five, with low numbers representing conservative attitudes and high numbers representing liberal attitudes toward feminine roles.

The Hoyt method for estimating coefficients of internal consistency (Hoyt, 1941) gives the same result as the KR_{20} formula. Hoyt analysis of variance procedures were used to examine reliability of the pretest, review questions, and posttest. The pretest scores of the 111 females who participated on the first day of the study yielded an internal consistency reliability coefficient of .70. The pretest scores of the 113 males who participated on the first day of the study yielded an internal reliability coefficient of .78.

The pretest scores were used as a covariable in analysis of covariance. The analyses will be explained in Chapter III.

The Review Questions

The review questions were inserted at intervals in the text of each booklet. In scoring the review questions, those who answered 80% of the items correctly were considered to have completed the treatment. Originally it was planned, for purposes of analysis, to discard those subjects who did not satisfactorily complete the treatment. However, because this elimination of subjects would have meant that the sample was no longer a random one, it was decided to analyze the data in two ways.

First, the data were analyzed using all subjects with scorable responses. This approach had the advantage of maintaining the random nature of the sample and, thus, the generalizability of results. The disadvantage of this data treatment was that differences among groups might be obscured by the scores of those whose poor review question performance indicated they might not have received the treatment.

Second, the data were analyzed in accordance with the original plan to eliminate from consideration those subjects who performed poorly on the review questions. Using this second method involved two disadvantages. The sample was no longer truly a random one, for a group of subjects had been removed from it and this group could not be precisely described. Eliminating subjects

also involved losing degrees of freedom and thus resulted in a higher critical value. The advantage of this second approach was that, by considering only the scores of subjects who through their review question answers indicated they had received the treatment, it had the potential for maximizing the contrast between treatment groups on the various instruments.

Because one approach maximized generalizability and the second offered the advantage of higher contrast between treatment groups, both analyses were used in order to determine if the hypotheses were supportable under both, either, or neither set of assumptions.

An item analysis was performed on the review question data for all students who participated in the study on the first day. In Table 1 are shown results of the item analysis. The reliabilities were computed according to the Hoyt analysis of variance procedure. The mean item difficulty scores are interpreted as percentages. Implications of the review question difficulty levels for the numbers of subjects who did not implement the treatments will be discussed in Chapter III in the section entitled "Implementation Index."

Outcome Measures

One of the purposes of this study was to develop materials which would encourage girls to: (a) consider a broad range of occupations, (b) become more involved

Table 1

Results of Item Analysis of Review Questions by Treatment Groups and Sex of Subject

	Number of Items	r.	Mean Item Difficulty (Percentages)
	Females		
Single Career	17	.92	90.7
Dual Career	18	.49	90.8
Standard Materials	20	.77	90.8
Control	13	.67	84.1
	Males		
Single Career	17	.77	90.6
Dual Career	18	.80	83.6
Standard Materials	20	.82	84.1
Control	13	.69	83.5

in the process of occupational exploration, and (c) consider the probability that they will be employed during one-third of their lives. The outcome measures were selected to measure whether or not the booklets had accomplished these purposes.

Career Choice

The most direct way to evaluate the range of occupations under consideration seemed to be a straightforward question. For the occupational choice measure, girls were asked to list their first three occupational choices and boys were asked their career preferences for their "ideal future wives." Occupations which contained less than 30% women, according to the Occupational Outlook Handbook, were considered to be "atypical" choices and were tabulated.

Subjects who gave no responses to the career choice question were eliminated from the study, but subjects who gave at least one response were included. For each atypical-for-women occupation listed, a subject was given one point. Thus, the range of scores on this measure was from zero to three.

The OOH contained figures for all except twelve of the occupations which were listed by subjects. The Bureau of Labor Statistics was contacted for the missing information; however, the respondent from the agency claimed these figures were not available. Under these

circumstances the twelve unlisted occupations were submitted to arbitration by a male chemical engineer, a female psychologist, and a male social scientist. This group obtained a consensus on the appropriate rating for each of the twelve occupations in question. These ratings were used in tabulating the measure of career choice.

Throughout all treatment groups, subjects who gave responses that were difficult to classify were given the benefit of the doubt in the direction of atypicality. For instance, "banking" was interpreted as indicating the higher levels of the field, typically a male domain, rather than the teller's window, a female province.

Career choice ratings were made first by the experimenter according to the Occupational Outlook Handbook figures. Later an independent rater reviewed these ratings to ensure consistency.

Four male subjects answered the wife's career choice measure with responses like, "whatever she wants" or "what would make her happy." These responses were considered to be liberal and were rated as atypical.

Measure of Career Salience

One of the purposes of the female model booklets was to encourage girls to consider the likelihood of their own future employment. Because the Angrist Life Style Index measures career salience or likelihood of

working, it was chosen as a suitable instrument for evaluating the effectiveness of the experimental booklet.

This index, constructed as a career aspirations measure for college women, is based on the assumption that college women who plan to work for reasons other than financial necessity and who imagine themselves as career women 15 years after college may be considered to be career salient (rather than only homemaker-oriented).

Hypothesizing that this distinction should be reflected in other values and aspirations, Angrist tested 27 questionnaire items representing five areas: (a) educational values and aspirations, (b) occupational aspirations, (c) work values, (d) work motivation, and (e) family aspirations. She found 11 items were significantly inter-correlated and could provide an internally consistent test. As a test of reliability, she used Heise's approach which attempts to separate test reliability and the stability of response of the respondent. Using this technique, she found reliability coefficients of .79 and .88.

Career salience was measured by the Angrist Life Style Index for female subjects. For male subjects, an adaptation of the Angrist Life Style Index was used to estimate future wife's career salience. These measures were scored according to the specifications for the original instrument, for which the score range is from

zero to 11, with high scores representing high career salience and low scores indicating a lesser likelihood of employment.

Hoyt analysis of variance procedures were used to estimate internal consistency coefficients for the posttest. In Table 2 these coefficients are reported by groups.

Table 2

Hoyt Reliability Coefficients for the Career Salience Measure

	Females	Males
Single Career	.23	.32
Dual Career	.72	.33
Standard Materials	.46	.48
Control	.32	.78
All Subjects	.51	.36

Although the Hoyt reliability coefficients were in the .70's for one treatment group of females and one treatment group of males, the coefficients for the remaining treatment groups and the coefficients for all male and all female subjects were very low. The implications of the low reliability of the career salience measure will be discussed in Chapter III in the section entitled, "Criterion Measures."

Measure of Occupational Exploration

In past studies of occupational information-seeking behavior (Johnson, 1967; LaFleur, 1970), the return of a pre-addressed post card has been used as a behavioral measure. This simple measure seemed appropriate for the circumstances of the present study, for it did not involve making requests of the teaching or counseling staff, but could be completed by students independently and tabulated by the experimenter easily. For these reasons post card requests for occupational information were chosen as a third criterion measure. Thus, sending the occupational exploration measure involved filling out a printed, pre-addressed, but unstamped, post card requesting further information on occupations. The post cards were disseminated in the treatment booklets and allowed the senders, by checking a box or filling in a blank, to request further information on careers. The post cards were addressed to "Career Information" at a pre-arranged address, where they were available for tabulation.

Few subjects responded to this measure. In total six post cards were received in the mail. Only two of these came from subjects with usable data collected on the first day of the study. However, 21 other post cards were returned by being filled out and left in the

reatment booklets. Of these, 12 came from subjects ith usable data, collected on the first day of the study. The instructions over the post card read "send in" rather than "mail in." This lack of specificity may have been confusing. For this reason both those mailed and those received by any other means were tabulated and included within the data analyses.

Statistical Procedures

The data were key punched and verified at the Michigan State University Computer Center. The statistical analysis was calculated on the Control Data 3600 Computer using a Finn program (1968) for multivariate analysis of covariance using planned comparisons. The pretest scores were used as the covariable in the analyses of covariance.

The .05 level of probability of a Type I error was established as the minimum criteria for accepting differences as significant. Results of the outcome data analyses are presented in Chapter III.

Summary

Two separate studies, one of males and one of females, are included within this investigation. Both groups received the same premeasure and were randomly assigned to one of four treatment groups; single career female role model, dual career female role model,

standard occupational materials, or active control group. The students participating in this study were eleventh- and twelfth-grade social studies' students from New Berlin High School, New Berlin, Wisconsin. Although data were collected on two days, only the data from the first day were usable and have been analyzed.

Three criterion measures were used; atypicality of occupational choice (for women) or atypicality of future wife's occupation (for men), a test of career salience or a test of future wife's career salience, and, finally, a measure of occupational exploration defined by sending a post card to an address provided with the treatment booklets.

The selection of role models, preparation of treatment booklets, field testing of treatment booklets, revision of treatment booklets, and data collection took place between February and May, 1973.

Multivariate and univariate analyses of variance with covariance were used to test for differences on the criterion variables. A significance level of .05 was established for all analyses used in the study.

CHAPTER III

RESULTS

Analysis of Data

The results of the data analyses are presented in this chapter. Two groups of hypotheses were tested. The first set concerned the differences among female subjects assigned to the four treatment groups. The second set concerned the differences among male subjects assigned to the four treatment groups.

Pretest data were collected for use as a covariate in evaluating changes occurring as a result of the treatments. Three outcome criteria were used: a career choice measure, a career salience measure, and an occupational exploration measure. Multivariate analysis of covariance using planned comparisons was employed to generate the test statistics. Only data from the first day of the study were analyzed. Because of contamination of the second day's data the more desirable original plan for a replicated study could not be carried through.

As explained in Chapter II there were advantages and disadvantages involved in using either all scorable

responses or eliminating those with poor review question performance; hence, the data were analyzed in two ways. The first analysis used all subjects who gave scorable answers on both the pretest and posttest, regardless of review question performance. In the second analysis subjects who had failed to answer or answered incorrectly more than 20% of the review questions were eliminated from consideration.

Cell sizes for the two analytic approaches are shown in Tables 3 and 4. Comparing Table 3, which includes all subjects, with Table 4, which includes only those with successful review question performance, reveals that elimination of those with poor performance resulted in a loss of 15 female subjects and 17 male subjects.

Table 3

Cell Sizes for the First Day's Treatment Groups, Including All Subjects with Scorable Answers on Both the Pretest and the Posttest

	Females	Males
Single Career	26	31
Dual Career	32	24
Standard Materials	26	21
Active Control	28	24
Total Subjects	112	100

Table 4

Cell Sizes for the First Day's Treatment Groups After Elimination of Subjects Who Failed to Answer or Answered Incorrectly Over 20% of the Review Questions

	Females	Males
Single Career	24	27
Dual Career	29	20
Standard Materials	22	18
Active Control	22	18
Total Subjects	97	83

The hypotheses concerning females were formulated to test the propositions that female role models, and especially dual career female models, are more effective for increasing the atypicality of occupational choice, career salience, and occupational exploration of eleventh- and twelfth-grade girls than standard occupational materials. The cell means by treatment for each of the dependent variables using all scorable data are shown in Table 5. In Table 6 are shown the cell means by treatment for each of the dependent variables after elimination of those who performed poorly on the review questions.

Table 5

Cell Means for Career Choice Scores, Career Salience Scores and Occupational Exploration Scores of Females Using All Subjects With Scorable Data

Variable	Treatment			
	Single Career Model	Dual Career Model	Standard Materials	Control Group
Career Choice Score	.692	1.094	.654	.643
Career Salience Score	6.077	6.687	6.538	6.214
Occupational Exploration Score	.077	.031	.038	.036

Table 6

Cell Means for Career Choice Scores, Career Salience Scores and Occupational Exploration Scores of Females After Elimination of Subjects Who Failed to Answer or Answered Incorrectly Over 20% of the Review Questions

Variable	Treatment			
	Single Career Model	Dual Career Model	Standard Materials	Control Group
Career Choice Score	.708	1.103	.682	.682
Career Salience Score	6.125	6.793	6.682	6.182
Occupational Exploration Score	.083	.034	.045	.045

Career choice scores range from zero to three. A zero score indicates that a female subject gave no "atypical" occupational choices, while a score of three indicates that a subject gave the maximum possible number of nontraditional career choices. Occupations considered to be atypical for women were those in which less than 30% of the workers are female.

Scores on the career salience measure range from zero to eleven, with high scores representing high career salience or likelihood of working. Scoring of this measure was according to the specifications of the instrument's author. The final score appearing in Table 5 is occupational exploration, a dichotomous variable. A score of one signifies that a subject returned a post card and a score of zero indicates that she failed to return a post card.

Inspection of the two tables of cell means for females reveals that, as hypothesized, the mean career choice score of the dual career treatment group exceeded that of all other treatment groups. Also as predicted, the mean for the dual career group on career salience was greater than that of all other groups. It had been hypothesized that the career salience mean of the single career group would be higher than that of the standard materials and active control groups. However, as indicated in Tables 5 and 6, the single career group mean

was less than that of the other groups. As hypothesized, the mean occupational exploration score of the single career group exceeded that of the standard materials and active control groups. However, contrary to prediction, the occupational exploration score mean of the dual career group was less than those of all other groups. It must be emphasized that the directionality of these means is peculiar to the present study and no generalization can be made to any other studies or to a replication of the present study. It must also be emphasized that the differences described above are absolute differences between means and not statistically significant differences.

Two hypotheses concerning males were formulated to test the proposition that exposure to female role models could effect the attitudes toward future wife's career of high school males. The final hypothesis concerning males was formulated to test the proposition that exposure to standard occupational materials containing male models would be most effective in encouraging high school males to engage in occupational information-seeking behavior. The cell means by treatment means for each of the dependent variables using all scorable data for males are shown in Table 7. In Table 8 are shown the cell means by treatment means for each of

Table 7

Cell Means for Wife's Career Choice Scores, Wife's Career Salience Scores and Own Occupational Exploration Scores of Males Using All Subjects with Scorable Data

Variable	Treatment			
	Single Career Female Model	Dual Career Female Model	Standard Material	Control Group
Wife's Career Choice	.742	.708	.476	.208
Wife's Career Salience	4.613	4.958	4.000	5.000
Occupational Exploration Score	.097	.042	.143	.167

Table 8

Cell Means for Wife's Career Choice Scores, Wife's Career Salience Scores and Own Occupational Exploration Scores of Males After Elimination of Subjects Who Failed to Answer or Answered Incorrectly Over 20% of the Review Questions

Variable	Treatment			
	Single Career Model	Dual Career Model	Standard Materials	Control Group
Wife's Career Choice	.741	.700	.500	.222
Wife's Career Salience	4.630	5.100	4.278	5.222
Occupational Exploration Score	.074	.050	.167	.167

the dependent variables when subjects with poor review question performance have been eliminated.

The wife's career choice measure used with male subjects, like the career choice measure for females, ranges from zero to three. Likewise, the wife's career salience measure has the same score range, from one to eleven, as the career salience measure for females. The occupational exploration measure used for males is also rated in the same way as the one for females. Inspection of the two tables of cell means for males reveals that, as hypothesized, the mean wife's career choice scores of the single career and dual career groups were higher than those of the standard materials and active control groups. However, contrary to prediction, the wife's career choice mean of the dual career group was smaller than that of the single career group. Differences between means for the measure of wife's career salience were not as predicted, for the mean of the active control group exceeded that of all other groups. For the occupational exploration measure, as hypothesized, the standard materials mean was higher than those of the female model groups, but contrary to prediction, this mean was less than that of the control group. It must be emphasized that the directionality of these means is peculiar to the present study and no generalization can be made to a replication of the study or to any other study. It must also be

noted that the differences described above are absolute differences between means and not statistically significant differences.

Statistical Tests for Hypotheses

Planned comparisons' multivariate analysis with covariance, using data for all subjects with scorable responses, was first used to test for significant differences. An alpha level of .05 was established. This level was used in considering the multivariate analyses. Included within each multivariate were univariate analysis for each dependent variable. In making decisions regarding the significance of these univariate analyses, the overall alpha level of .05 was divided. Thus when three univariate analyses were included within a multivariate analysis the alpha level for each univariate was .017. When two univariates were included, the alpha level for the univariates was .025.

The results of these analyses are shown in Tables 9 through 13. No differences were found among groups for the two comparisons made for females, nor the three comparisons made for males.

After the total group of first-day subjects with scorable data had been analyzed, those subjects who had not successfully completed 80% of the review questions were eliminated from consideration and the data were

Table 9

MANCOVA Comparing Means of Females in the Dual Career Group With Means of Females in the Other Three Treatment Groups on the Three Dependent Variables Career Choice, Career Salience, and Occupational Exploration (Hypothesis 1)

Multivariate				
df = 3, 105	F-Ratio = 1.684		p < .175	
Univariate				
Variable	Between MS	Univariate F	p less than	Significance
Career Choice	3.806	4.751	.032	Not Signif.
Career Salience	3.301	.674	.413	Not Signif.
Occupational Exploration	.013	.293	.589	Not Signif.

Table 10

MANCOVA Comparing the Means of Females in the Single Career Group with the Means of Females in the Standard Materials and Active Control Groups on the Dependent Variables, Career Choice, Career Salience, and Occupational Exploration (Hypothesis 2)

Multivariate				
df = 3, 105	F-Ratio = .376		p < .770	
Univariate				
Variable	Between MS	Univariate F	p less than	Significance
Career Choice	.044	.054	.816	Not Signif.
Career Salience	2.327	.475	.492	Not Signif.
Occupational Exploration	.020	.445	.506	Not Signif.

Table 11

MANCOVA Comparing the Means of the Dual Career Group of Males with the Means of the Three Other Groups of Males on the Two Dependent Variables of Wife's Career Choice and Wife's Career Salience (Hypothesis 3)

Multivariate				
df = 2, 94	F-Ratio = .421		p .657	
Univariate				
Variable	Between MS	Univariate F	p less than	Significance
Wife's Career Choice	.535	.851	.359	Not Signif.
Wife's Career Salience	.008	.002	.964	Not Signif.

Table 12

MANCOVA Comparing the Means of Males in the Single Career Group with the Standard Materials and Active Control Groups on the Two Dependent Variables Wife's Career Choice and Wife's Career Salience (Hypothesis 4)

Multivariate				
df = 2, 94	F-Ratio = 2.525		p .086	
Univariate				
Variable	Between MS	Univariate F	p less than	Significance
Wife's Career Choice	2.315	3.679	.058	Not Signif.
Wife's Career Salience	4.217	1.085	.300	Not Signif.

Table 13

Univariate Analysis for Comparing the Male Standard Materials Group with All Other Groups on Occupational Exploration (Hypothesis 5)

df = 1, 95				
Variable	Between MS	Univariate F	p less than	Significance
Occupational Exploration	.045	.453	.503	Not Signif.

again analyzed using analysis of covariance with planned comparisons. This procedure was employed because it had the advantage of providing higher contrast between means by including only subjects who had actually received the treatment. The results of these analyses appear in Tables 14 through 18. Again, no significant differences were found among groups for either males or females.

Implementation Index

An inspection of the numbers of subjects who did not answer or answered incorrectly over 20% of the mastery questions revealed that these subjects did not seem to be proportionately distributed among treatment groups. Likewise, an inspection of the subjects who did not complete or gave incomplete data on the posttest revealed that these subjects did not seem to be proportionately distributed among treatment groups.

Table 14

MANCOVA Comparing Means of Females in the Dual Career Group with Means of Females in the Other Three Treatment Groups on the Three Dependent Variables Career Choice, Career Salience and Occupational Exploration (Hypothesis 1, Selected Subjects)

Multivariate				
df = 3, 90	F-Ratio = 1.331		p < .269	
Univariate				
Variable	Between MS	Univariate F	p less than	Significance
Career Choice	3.132	3.729	.057	Not Signif.
Career Salience	3.040	.562	.455	Not Signif.
Occupational Exploration	.015	.301	.584	Not Signif.

Table 15

MANCOVA Comparing the Means of Females in the Single Career Group with the Means of Females in the Standard Materials and Active Control Groups on the Dependent Variables, Career Choice, Career Salience, and Occupational Exploration (Hypothesis 2, Selected Subjects)

Multivariate				
df = 3, 90	F-Ratio = .353		p < .787	
Univariate				
Variable	Between MS	Univariate F	p less than	Significance
Career Choice	.036	.043	.836	Not Signif.
Career Salience	2.811	.520	.473	Not Signif.
Occupational Exploration	.018	.350	.556	Not Signif.

Table 16

MANCOVA Comparing the Means of the Dual Career Group of Males with the Means of the Three Other Groups of Males on the Two Dependent Variables of Wife's Career Choice and Wife's Career Salience (Hypothesis 3, Selected Subjects)

Multivariate			
df = 2, 77	F-Ratio = 2.74	p < .761	
Univariate			
Variable	Between MS	Univariate F	p less than	Significance
Career Choice	.357	.547	.462	Not Signif.
Career Salience	.097	.023	.880	Not Signif.

Table 17

MANCOVA Comparing the Means of Males in the Single Career Group with the Standard Materials and Active Control Groups on the Two Dependent Variables Wife's Career Choice and Wife's Career Salience (Hypothesis 4, Selected Subjects)

Multivariate			
df = 2, 77	F-Ratio = 2.081	p < .132	
Univariate			
Variable	Between MS	Univariate F	p less than	Significance
Wife's Career Choice	1.771	2.709	.104	Not Signif.
Wife's Career Salience	4.952	1.174	.282	Not Signif.

Table 18

Univariate Analysis for Comparing the Standard Materials Group of Males with All Other Groups of Males on Occupational Exploration (Hypothesis 5, Selected Subjects)

df = 1, 78				
Variable	Between MS	Univariate F	p less than	Significance
Occupational Exploration	.090	.909	.343	Not Signif.

Consequently, an implementation index was formed composed of those subjects who for some reason did not implement the treatment. Numbers of subjects with incomplete data or poor mastery question performance are reported in Table 19.

Because of the apparent difference in proportions of those subjects who did not implement the treatment, a test was done to determine if these differences in proportions were statistically significant. A Chi Square Test of Homogeneity was performed. The degrees of freedom for the test were three, the critical value was 7.80 at the alpha level of .05. For women the χ^2 value was 3.885 and for men 5.070.

Because neither the male nor the female Chi Square value reached the critical value established, the null hypothesis was not rejected. In view of these

Table 19

Subjects with Incomplete Data or Poor Mastery Question Performance

Item	Single Career	Dual Career	Standard Materials	Active Control
	Women			
Unscorable	0	0	0	1
Missed Over 20% of Review Questions	2	3	4	6
At Least 80% of Review Questions Answered Correctly	24	29	22	22
Total Exposed to Treatment	26	32	26	29
	Men			
Unscorable	2	2	7	3
Missed Over 20% of Review Questions	4	4	3	6
At Least 80% of Review Questions Answered Correctly	27	20	18	18
Total Exposed to Treatment	33	26	28	27

results no conclusions were drawn concerning the proportionality of subjects who did not implement the treatments.

The item analysis data for the review questions were examined to determine if the difference in proportions of subjects who did not implement the treatment might be due to differences in the difficulty of review questions in the four treatments. The mean item difficulty levels for the review questions are reported in Table 1. The figures for mean item difficulty may be interpreted as percentages. It would not be expected that the differences of six or seven percentage points between the most and least difficult sets of review questions would make a practical difference between tests. However, the four treatments with more difficult review questions are in fact the groups with the highest proportions of subjects who did not implement the treatments. These groups include the control group for females and the dual career, standard materials, and control groups for males. Thus, there does appear to be a relationship between higher test difficulty and failure to implement the treatment. Further investigation of this relationship is not central to the present study. However, a future investigator might consider either further exploration of this relationship or standardization of difficulty levels prior to treatment administration.

Summary

Five hypotheses were formulated and tested. Two of these concerned females and the remaining three pertained to males. Although the hypotheses for females constituted a separate study from the hypotheses for males, the dependent variables for the two were similar. They involved measures of career choice, career salience, and occupational exploration.

Although some absolute differences in means of the four treatment groups on the three dependent measures were observed to be in the direction hypothesized, no significant differences were found among the groups, when analysis of covariance using planned comparisons was employed.

Implications of this experiment's results are discussed in Chapter IV.

CHAPTER IV

SUMMARY AND CONCLUSIONS

Summary

The purpose of this investigation was to assess the effects of two kinds of experimental vocational materials, using dual career and single career female role models, as compared with standard vocational materials and an active control group. The treatments were presented in the form of booklets which were read in a single sitting of about 30 or 40 minutes. The single career and dual career booklets were highly similar. Both contained five occupational briefs and presented real life models through written autobiographical material and photographs.

Included within this investigation were two separate studies, one of females and the other of males. The dependent variables for the two groups were similar. The study of females investigated the effects of the four different treatment booklets on three measures, career choice, career salience, and occupational exploration. The study of men considered the effects of the

same four treatment booklets on measures of future wife's career choice, future wife's career salience, and subject's occupational exploration.

Five hypotheses were stated. The first hypothesis predicted that the dual career treatment would be more effective than all others in producing high scores on the dependent variables for girls. Hypothesis 2 predicted that the single career treatment would be better than the standard materials and active control treatments in producing high scores on the dependent variables for girls. The last three hypotheses concerned boys. The third hypothesis stated that the dual career treatment would be better than all other treatments in producing high scores on the measures of wife's career choice and wife's career salience. Hypothesis 4 predicted that the single career treatment would be more effective than the standard materials and active control treatments in producing high scores on the wife's career choice and wife's career salience measures. The final hypothesis predicted that the standard materials treatment would be more effective than all other treatments in encouraging boys to send in post cards requesting occupational information.

Data were collected on May 16th and 17th at New Berlin High School, New Berlin, Wisconsin. It was planned that the data from the second day would be

analyzed separately and considered as a replication. Unfortunately, on the second day experimental conditions were not maintained. Hence, only the first day's data are analyzed and considered.

Multivariate analysis of covariance using planned comparisons was employed to examine the data. Although none of the treatment effects were significant at the alpha level of .05, two outcomes were of interest. The p value for the univariate analysis of the comparison of the career choice scores of the dual career group with the career choice scores of the remaining groups was .032 in one analysis (Table 5) and .057 in the second analysis (Table 10). The p value for the comparison of the wife's career choice scores of the single career group with the wife's career choice scores of the standard materials and active control groups was .058 in one analysis (Table 8) and .104 in the second analysis (Table 13).

Discussion

Significant differences were not found with any of the statistical tests performed. In investigating possible explanations for the failure to find significance, five areas will be examined: hypothesis formulation, design and statistics, treatments, criterion measures, and sampling. The succeeding section will discuss

plausible explanations for the lack of significant findings, as well as possible implications of the outcomes for future research.

Hypothesis Formulation

The hypotheses serve as the foundation of a study. They serve as guidelines for the administration of treatments and the type of statistical procedures to be used for analysis. Thoughtful hypothesis formulation based on theory or research incorporates the wisdom of past experience and thus ensures economy of research effort, as well as precision of analytical procedures. These factors were taken into account in the planning of the study. The hypotheses were based on past research. Their statement in the form of specific comparisons helped maximize analytical precision. Despite the attempt to formulate sound and economical hypotheses, an explanation for the failure to find the results hypothesized may lie in misinterpretation of the literature on which the hypotheses were based. One extrapolation from the literature with room for error is the choice of eleventh- and twelfth-grade students as subjects. In pointing to the high school years as crucial ones in feminine vocational development, Ginzberg (1951) and Matthews and Tiedeman (1964) do not specify which years might be the most opportune ones for vocational

intervention. The reasoning behind the choice of eleventh- and twelfth-grade students for the study was that proximity to an important life-choice point would render them more susceptible to the influence of vocational information. There is no empirical evidence which would dispute this assumption. However, it is possible that for high school seniors, and especially noncollege-bound high school seniors in the last month of school, some sort of limit on susceptibility may have been in operation. If a sizable proportion of the seniors had firm post-graduation plans, they might not have been open to the treatment influence.

Although both eleventh- and twelfth-grade students were included in the study, grade level was not included as a factor in the design, and it was not possible to test for differences between the two grade levels. If late twelfth-grade girls are not open to vocational intervention, this factor might account for failure to find significant differences in the tests of the two hypotheses concerning females.

The first hypothesis concerning males, predicting the superiority of the dual career group in producing high scores on the wife's career dependent variables, may be unfounded. Not only were no significant differences found between the single and dual career treatments for men, but there was hardly any absolute

difference between the cell means on the future wife's career dependent variable for these two groups. Although no generalization to other groups or studies can be made on the basis of the outcomes of the study, the similarity of the single career and dual career means for the male groups does raise a question about the justification of Hypothesis 3. This hypothesis is based primarily on the finding of Vogel et al. (1970) that males who have had employed mothers perceive significantly smaller differences between masculine and feminine roles than do men with homemaker mothers. Perhaps, for males, modeling of marital status or life style is not important; perhaps, for males, one female model is as efficacious as the next in influencing attitudes toward future wife's career. The hypotheses stated for the study do not compare both female model treatments against the combination of the standard materials and control groups, yet this might have been a more productive comparison for males. It would also have been a logical comparison to make for females.

A mistake in one additional hypothesis may aid in explaining the lack of significant findings in the investigation. It was hypothesized that occupational exploration scores would be higher for females in the two female model groups, compared with the standard and control groups. For males, it was hypothesized that

occupational exploration scores would be higher for standard materials group members than for female model groups or the control group. There may be a mistake in assuming that control group members who have not received any specific occupational information will seek it less than other group members who have received information. No significant differences were found which would support this contention. However, the sizes of mean differences in the occupational exploration measure do raise this question.

Design and Statistics

An imprecise analysis of data resulting from a poorly planned design may obscure differences between treatments. The use of planned comparisons in the study provided a more precise analysis than a plain multivariate analysis. The use of the pretest as a covariate supplemented randomization procedures in eliminating initial treatment group differences. With one possible exception, there are no obvious errors in design or statistical analysis which might account for the failure to find significance.

The exception might be the use of the traditional .05 alpha level. This level may be unnecessarily restrictive for a preliminary investigation. It has been suggested that conventional levels of significance

may need to be re-evaluated, for the risk of overlooking real differences with conventional alpha levels may unnecessarily restrict the interpretation of data (Skipper, Guenther, & Nass, 1967). The present study may be the kind of experimental situation where a more liberal, nontraditional alpha level would be justified. The need for more restrictive or less restrictive alpha levels depends upon the focus of a study and its predetermined levels of meaningfulness. Because the present study is an initial effort in which both independent and dependent variables are exploratory, there is more opportunity for error and for overlooking real differences. Thus, in the present situation a less restrictive alpha level might have been justified.

Treatments

If treatments are too "weak," poorly administered, or fail to be implemented, significant differences are more difficult to obtain. Precautions were taken to ensure that these possible faults did not occur in the present study. Treatments were designed to be as long as possible within the restriction that 90% of eleventh- and twelfth-grade students be able to complete them within one class period. Comprehensive written instructions for teachers were supplemented by verbal explanation and discussion. The review questions made

it possible to determine which students had implemented the treatment and to use this information in analysis of results. Despite all these precautions, insufficient treatment strength may be a factor in the failure to find significance in the investigation.

The treatments, however strong, must be accepted as only a minor incident in the 17 or 18 years of learning history of all subjects within the study. Further, the subjects' prior exposure to employed women may have been confined to those within traditionally feminine occupations. Is it possible, then, for subjects to read about employed women in atypical occupations for a period of approximately 40 minutes and have this exposure constitute a treatment of sufficient strength?

In addition, the treatments were limited by the time and money which was available to produce them. There were many problems with the booklets produced; poor reproduction of photographs, low quality printing, and amateur layouts; which with a larger budget might have been avoided. If the booklets had been of higher quality, the treatments might have been more powerful. A medium other than the printed page, such as film or video tape, might also have made a more effective treatment.

Another way to produce a more powerful treatment in future studies might be to use live models. One

method of doing this could be to introduce a speaker or speakers through differing written instructions. The introductory instructions might, for example, be of two types, dual career and single career, and would attempt to influence students to perceive the speaker or speakers in different ways. An alternative method for using live models might be to use classrooms or schools, rather than students, as the smallest independent experimental unit. Such a design would require extensive administrative coordination, but it might be possible if sponsored by the guidance or career education office of a state or a large public school system.

A sample of eleventh- and twelfth-grade high school students was needed for this study. Since a total population rather than a volunteer sample was desired, the length of the treatments had to be determined by the length of time which students could be available. In the case of the New Berlin students this was one double class period. The fact that the treatments were administered on only one day and for only one double class period on that day was certainly a limiting factor in the study. The treatments may have been too brief and their presentation too ordinary to produce a significant difference between treatment groups.

If future study is to be done using such short-term treatments, an investigation should be made of

effects on attitudes of short-term exposures. Methods which have been used to increase the impact of short-term treatments in other fields of research might be applicable to vocational materials. In reviewing the literature concerning attitude changes effected by short-term interventions, attention should be paid to specific characteristics of successful short-term treatments.

Assuming that the brevity of treatments was a primary reason for the failure to find significance in the present study, a totally different type of study may be warranted. One of the goals in designing the present experiment was to produce a tightly controlled and easily administered study. Maximizing control and ease of administration placed limits on treatment length and power. A totally different approach to the use of role models in feminine life planning would be to design, test out, and refine a total curriculum which incorporated female vocational role models. Although this type of study would not provide the tight control and ease of administration of the present study, it would offer the advantage of conforming to the format through which most curricular innovations are made in the schools.

Criterion Measures

A lack of validity and reliability of the measures employed in a research study may produce sufficient error variance to hide significant differences. Although the specific use of all criterion measures in the study was exploratory, two of the measures, career salience and occupational exploration, have been used successfully as research tools in the past. Although these measures seemed sufficiently valid and reliable to be used in the study, they may indeed be a direct cause of the nonsignificant results found. Despite the possible culpability of the criterion measures in the failure to obtain significant results, the use of these measures does have implications for future research.

Although career choice has often been a variable in survey research, no examples were found of a straightforward question about career interests being used as a dependent variable in an experimental study. The present study demonstrates one way in which this variable can be used.

The Angrist Life Style Index was developed on a college population and had been used exclusively at that level. In addition it had been used solely with females. Ideally, this instrument should have been tested and revised for use with high school students

and especially with men before being used in the present study. Reliability coefficients of internal consistency for this measure were presented in Table 2. Had these coefficients been estimated at the time of the field test, it would have been clear that this instrument, when used with a high school population, was not sufficiently reliable to be used as a criterion measure. Using this instrument for purposes other than those for which it was designed and with a group distinct from that on which it was standardized may have been a factor in the failure of this study to produce significant differences among treatment groups.

The third criterion measure in this study was also used in a slightly different way than in previous investigations. In the past the return of a pre-addressed post card as a criterion measure has been used in studies of information-seeking behavior, where this behavior was modeled. The present study was different in that occupational models were used, but they did not model information-seeking behavior. Whereas in one prior study (Johnson, 1967), a return rate of 25 to 50% on post cards was found. The return rate per treatment group in the present study varied from 3 to 7% for females and from 4 to 16% for males. With the poor rate of return found in the present study, the

post card measure was not a sensitive enough one to detect differences between treatment groups.

However, the present study does not suggest that the post card measure is without potential as a criterion variable outside of the specific area of information-seeking behavior. In view of the differing purposes of the study as compared with prior studies using post cards, the lower rate is somewhat understandable.

The overall lower rate of return may be explained by the study's lack of specific modeling of information-seeking behavior found in prior studies. However, this explanation cannot account for the reversal in the proportions of male and female respondents found in the Johnson study. In that study an attempt was made to offer information on "nonsexed" careers requiring less than four years of college. Lab technician and X-ray technician are examples of two of the occupations used in the Johnson study. The present study offered further information on the occupations covered in the three experimental booklets as well as blanks to fill in for special requests. The lower rate of return for girls was probably due to the offering of information on "male" occupations. Thus, this study suggests that the occupations listed on the post card may be an important factor in the rate of return for pre-addressed post cards.

On the basis of the data analyses which included all subjects with scorable answers, there was a .33 correlation between the pretest and the career choice for females dependent variable and a .26 correlation between these two measures for males. For career salience there was a .27 correlation with the pretest for females and a .22 correlation for males. The regression analyses for all of these correlations were significant at the .05 level. Since the pretest is predictive of a part of the variance of the measures of career choice and career salience, these variables or refinements of these variables, used either separately or together, do have potential for future research.

Sample

Initial differences among treatment groups may obscure treatment results. However, it is unlikely that the nonsignificant results in the study are due to initial group differences. Two techniques, random assignment of subjects to treatment groups and analysis of covariance using the pretest as the covariate, were used to ensure that treatment effects were not confounded by initial group differences.

Choice of a sample population reasonably representative of the total population of interest is important for maximizing generalizability. When only one school is

used as in the present study, it is impossible to pick a school whose students are representative of all high school students. New Berlin students were characterized as the children of middle-class, blue-collar workers. It is possible that the socio-economic background of the New Berlin students could have been a factor in the failure to find significant results. Although there is no evidence to support the idea of differential efficacy of the treatments with different socio-economic groups, this factor could be involved.

Unique features of the population of New Berlin High School may account for the failure to find significance. Three of the occupations covered in the experimental booklets required college graduation. The small proportion of New Berlin students who plan to attend college may have limited the students' ability to respond to these occupations and thus to the treatment booklets.

A second limiting factor stemming from the sample is the inability to eliminate uncontrolled variables from influencing subjects during the administration of treatment materials. Teachers were asked to ensure that there was no communication among students during the treatment and all teachers reported that experimental conditions were maintained. But even with good teacher cooperation, it is impossible to ensure that no

communication transpired between 15 or 16 high school students seated in the same classroom for 45 minutes on a warm spring day, after being given an assignment that was not going to count as a grade.

Conclusion

The study presented here was an attempt to examine the effects of three treatments of vocational materials and an active control group with eleventh- and twelfth-grade students. No experimental study of comparable scope has been reported in the literature. Despite the failure to support the hypotheses stated, observations made from this exploratory effort may assist those who wish to pursue this line of research. The study was an outgrowth of interest in the process of career choice and the special problems of women in career planning, exploration, and implementation. Because no significant differences were found between treatment groups, no conclusions could be drawn concerning the effects of female models on the occupational attitudes and exploration of adolescents. However, the study has made clear that several more specific background investigations need to be done before another investigation of this breadth is attempted. Following are some of the questions which need to be answered in order to provide a foundation for a study such as this one.

1. What medium or combination of media is most effective for presenting vocational information to high school students?

2. It has been suggested that women with established careers and families are too far removed from high school students to be good vocational models and that women still in student or training roles might be more effective models. What specific model characteristics are most effective with high school students?

3. What is the most effective way to use career choice as a dependent variable? Might it be better to provide subjects with a list of occupations from which to choose, rather than giving them complete free choice?

4. How can career salience best be measured with high school girls and wife's career salience with high school boys?

5. Under what circumstances can post cards be used as an effective dependent variable? What steps could be taken to ensure a higher rate of return?

6. Are direct or indirect means most effective for broadening the scope of girls' occupational exploration? For example, encouraging

information-seeking behavior, rather than direct presentation of "atypical" careers, might be a better way to increase the breadth of female occupational investigation.

All of these questions are primary considerations which might be investigated before a study such as this should be replicated. If these questions were answered and consequent improvements were made in the treatments and outcome measures, it might be possible to obtain significant findings in the directions predicted in the hypotheses for women. The study suggests that the hypotheses for men might be revised.

The investigation provides initial data in two important aspects of counseling. With the advent of the Women's Liberation Movement, counselors and educators are becoming particularly concerned with the special needs and problems of women. The study investigated one approach to assisting women with vocational planning. At present, career education is being emphasized as an important and neglected aspect of education. The study investigated one technique of career education at the high school level. It remains for future research to provide more conclusive information.

APPENDICES

APPENDIX A

Letter to Models (Sample)

March 9, 1973

_____
_____
_____

Dear _____:

I really appreciate your agreeing to be a role model for my study of vocational materials.

To review, here's what I'm asking you to do:

(1) Edit the enclosed description of _____ so that you feel it gives a satisfactory description of the field. You should retain the five topical areas (nature of the work, places of employment, training, employment outlook, earnings and working conditions) and the basic occupational facts given. But please correct any distortions or make any stylistic changes which would help give a more accurate view of careers in _____.

(2) Write a section of about 200-250 words (one double-spaced typewritten page) introducing yourself and telling how you chose _____ as a career. Please include childhood and adolescent interests, abilities, and personality characteristics which you feel were important in your choice of _____.

(3) Write a section of about 200-250 words on your experience in combining marriage or family life with your particular career. Are there any characteristics of _____ which in your opinion make it especially easy or difficult to combine with homemaking?

The two sections which you write from scratch will precede the edited occupational description in the final layout.

I'll be contacting you to set up times on March 23rd and 24th when it would be convenient for pictures to be taken. If you've finished writing, great, if not I'll try to pick up your work on the 30th or 31st.

In the meantime, if you have any questions, please call me either at work (224-7172) or at home (344-0359).

Again, thank you very much for your help. I'm really excited about this research and I appreciate your willingness to help me with my project.

Sincerely,

Archer Dodson
Counselor

APPENDIX B

Second Note to Models

March 22, 1973

Gretchen Brue, Georgia Felger, Susan McCrary, Barbara Meyer, Joanne Nault and Kathleen Schweitzer

I feel bad about increasing my original request of you--but here goes!

Would you write one additional section of about the same length as the other two (200-250 words) covering any or all of the following topics?

1. The social atmosphere of your work: What kinds of relationships do you have with colleagues/co-workers/patients/clients/trainees? Is this an important source of satisfaction for you?

2. Job related activities: What kinds of associations, conventions or training programs have you participated in as a result of your work? If you haven't participated in any of these activities, are there any which you're considering becoming involved in? Could you describe these?

3. What you value and enjoy most about your work: Of the following work values; opportunity for social relations, a sense of mastery and achievement, variety of interesting activities, independence, monetary rewards, recognition by others and opportunities for leadership; which are most important to you? Specifically, in what way do you get this satisfaction through your work?

If you can get your writing to me by March 31st, that would be great.

Again, thank you very much for your help.

Archer

APPENDIX C

Form I, For Field Testing Pretest Items

Name_____ Date_____

ATTITUDES TOWARD WOMEN

The statements listed below describe attitudes toward the role of women in society. There are no right or wrong answers, only opinions. Please express your feelings about each statement by checking one of the boxes.

1. Women should take increasing responsibility for leadership in solving the intellectual and social problems of the day.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

2. Vocational and professional schools should admit the best qualified students, independent of sex.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

3. Sons in a family should be given more encouragement to go to college than daughters.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

4. It is only fair that male workers should receive more pay than women even for identical work.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

5. There are some professions and types of businesses that are more suitable for men than women.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

Appendix C. Continued

6. The intellectual leadership of a community should be largely in the hands of men.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

7. On the average, women should be regarded as less capable of contribution to economic production than are men.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

8. There are many jobs in which men should be given preference over women in being hired or promoted.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

APPENDIX D

Form II, For Field Testing Pretest Items

Name_____ Date_____

MARRIAGE ROLES SURVEY

Please indicate your opinion on these items by checking one of the boxes. There are no right or wrong answers, only opinions.

1. An ambitious and responsible husband does not like his wife to work.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

2. A woman who works cannot possibly be as good a mother as the one who stays home.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

3. Marriage and children should come first in a woman's life.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

4. Single women need personal success, but all a married woman needs is her husband's success.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

5. A working mother can get along as well with her children as can a mother who stays at home.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

6. A woman should have interests outside the home.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

Appendix D. Continued

7. Women should be concerned with their duties of child-rearing and house tending, rather than with desires for professional and business careers.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

APPENDIX E

Survey for Men
(Or Survey for Women)

Please indicate your opinion on these items by checking one of the boxes. There are no right or wrong answers, only opinions.

1. The intellectual leadership of a community should be largely in the hands of men.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

2. On the average, women should be regarded as less capable of contribution to economic production than are men.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

3. There are many jobs in which men should be given preference over women in being hired or promoted.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

4. Marriage and children should come first in a woman's life.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

5. Sons in a family should be given more encouragement to go to college than daughters.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

6. Women should be concerned with their duties of child rearing and house tending, rather than with desires for professional and business careers.

☐ strongly agree ☐ agree ☐ no opinion ☐ disagree

☐ strongly disagree

APPENDIX F

Angrist Life Style Index

1. As far as you can tell now, do you plan to continue your education after receiving a bachelor's degree:

Yes, graduate school	1
Yes, professional school	2
Yes, other training	3
No, I do not plan to continue	4

2. How important do you think the following feature of an occupation has been or will be in influencing your choice of a field of work? Circle 1, 2, 3, 4, or 5 to indicate the degree of importance this work feature has for you.

Provides freedom from close supervision

Completely unimportant	1
Not so important	2
Somewhat important	3
Quite important	4
Very important	5

Below are some conditions under which women work. Rate yourself on these by speculating how you might feel about holding a job after marriage and graduation from college. Circle 1, 2, 3, 4, or 5 according to whether you would want to work under each condition.

3. No children; husband's salary adequate

Definitely not	1
Probably not	2
Undecided	3
Probably would	4
Definitely would	5

4. One child of pre-school age; husband's salary adequate

Definitely not	1
Probably not	2
Undecided	3
Probably would	4
Definitely would	5

Appendix F. Continued

5. One child of pre-school age; husband's salary not adequate

Definitely not	1
Probably not	2
Undecided	3
Probably would	4
Definitely would	5

6. Two or more children of pre-school age; husband's salary not adequate

Definitely not	1
Probably not	2
Undecided	3
Probably would	4
Definitely would	5

7. Two or more children of school age; husband's salary adequate

Definitely not	1
Probably not	2
Undecided	3
Probably would	4
Definitely would	5

8. Two or more children of school age; husband's salary not adequate

Definitely not	1
Probably not	2
Undecided	3
Probably would	4
Definitely would	5

9. Children have grown up and left home; husband's salary adequate

Definitely not	1
Probably not	2
Undecided	3
Probably would	4
Definitely would	5

10. Assume that you are trained for the occupation of your choice, that you will marry and have children, and that your husband will earn enough so that you will never have to work unless you want to. Under these conditions, which of the following would you prefer (circle one):

Appendix F. Continued

To participate in clubs or volunteer work	1
To spend time on hobbies, sports or other activities	2
To work part-time in your chosen occupation	3
To work full-time in your chosen occupation	4
To concentrate on home and family	5
Other (explain briefly)	

11. Fifteen years from now, would you like to be:

A housewife with no children	1
A housewife with one or more children	2
An unmarried career woman	3
A married career woman without children	4
A married career woman with children	5
Other: What?	6

APPENDIX G

Introduction and Instructions

For Career Booklets

INTRODUCTION

Perhaps the newest trend in education today is that of Career Education. The idea behind the program is that learning about the world of work, careers and life styles should be a part of the school curriculum from kindergarten through grade twelve. Because career choice is a developmental process, rather than an isolated decision, schools should facilitate rather than ignore it.

New materials are being developed to be used in Career Education in the Milwaukee area. The booklets and surveys which you will be using today are part of these materials. Several different booklets have been distributed. Although the booklets differ somewhat, they all have to do with the world of work and are designed to stimulate your thinking about your present or future work roles.

INSTRUCTIONS

Inserted within the text of this booklet are "mastery questions". Please answer these by making a mark in one of the boxes in the booklet. The questions have two purposes; first, to aid you in evaluating your reading comprehension and later to aid in evaluating the readability of the booklets. The answers to all questions are in the text. If you are unsure of your answers, please re-read the preceding section before going on.

As you read, try to project into the future and think about the kind of work and life style you might want to have in the next ten years. This may not be easy for you to do, but please try to project yourself into the future as much as possible.

Parts of the materials in these booklets are reprinted in edited form from either the 1972-73 Occupational Outlook Handbook or the Monthly Labor Review.

Please turn the page and begin reading.

APPENDIX H

Posttest For Women

IDEAS ABOUT YOUR FUTURE

Please answer the following questions which concern the kind of jobs and life style you would like in the future. Work quickly. Give your first impressions, rather than deliberating about your answers.

1. List the three occupations in which you are most interested at present.
   1._____ 3._____
   2._____

In the following question you are asked to try to imagine your ideal future husband.

2. List the three occupations which you would most like for your future husband.
   1._____ 3._____
   2._____

3. As far as you can tell now, do you plan to continue your education after receiving your high school diploma?
   - ☐ Yes, college
   - ☐ Yes, college and graduate school.
   - ☐ Yes, college and professional school.
   - ☐ Yes, other training.
   - ☐ No, I do not plan to continue school.

4. Providing freedom from close supervision is one feature of an occupation. How important do you think this feature will be in influencing your choice of a field of work?
   - ☐ Completely unimportant.
   - ☐ Not so important
   - ☐ Somewhat important
   - ☐ Quite important
   - ☐ Very important

5. Assume that you are trained for the occupation of your choice, that you will marry and have children, and that your husband will earn enough so that you will never have to work unless you want to. Under these conditions, which of the following would your prefer?
   - ☐ To participate in clubs or volunteer work.
   - ☐ To spend time on hobbies, sports, or other activities
   - ☐ To work part time in your chosen occupation
   - ☐ To work full time in your chosen occupation
   - ☐ To concentrate on home and family

6. Fifteen years from now, would you like to be:
   - ☐ A housewife with no children
   - ☐ A housewife with 1 or more children
   - ☐ An unmarried career woman
   - ☐ A married career woman without children
   - ☐ A married career woman with children

Appendix H. Continued

Below are some conditions under which women work. Rate yourself on these by speculating how you might feel about holding a job after marriage. Put a check in one of the boxes to indicate the probability of your working under each condition.

7. No children; husband's salary adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

8. One child of pre-school age; husband's salary adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

9. One child of pre-school age; husband's salary not adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

10. Two or more children of pre-school age; husband's salary not adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

11. Two or more children of school age; husband's salary adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

12. Two or more children of school age; husband's salary not adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

13. Children have grown up and left home; husband's salary adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

APPENDIX I

Posttest For Men

IDEAS ABOUT YOUR FUTURE

Please answer the following questions which concern the kind of job and family life style you would like in the future. Work quickly. Give your first impressions rather than deliberating about your answers.

1. List the three occupations which most interest you at present.

1._____ 3._____
2._____

In the following questions you are asked to try to imagine your ideal future wife and the kind of life style you would like to follow.

2. List the three occupations you would most like for your wife.

1._____ 3._____
2._____

3. Would you want your future wife to continue her education after receiving her high school diploma?

- ☐ Yes, college
- ☐ Yes, college and graduate school
- ☐ Yes, college and professional school
- ☐ Yes, other training.
- ☐ No, I would not want her to continue

4. Having freedom from close supervision is one feature of an occupation. How important would you want this work feature to be in influencing your future wife's choice of occupation?

- ☐ Completely unimportant
- ☐ Not so important
- ☐ Somewhat important
- ☐ Quite important
- ☐ Very important

5. Assume that your future wife is trained for an occupation which appeals to you. You have children and you earn enough so that your wife does not have to work unless she wants to. Under these conditions, which of the following would you prefer for her?

- ☐ To participate in clubs or volunteer work
- ☐ To spend time on hobbies, sports or other activities
- ☐ To work part-time in her chose occupation
- ☐ To work full-time in her chosen occupation
- ☐ To concentrate on home and family

6. Fifteen years from now, would you like to be?

- ☐ Unmarried
- ☐ Married to a "housewife" with no children
- ☐ Married to a career woman without children
- ☐ Married to a career woman with children
- ☐ Married to a "housewife" with one or more children

Appendix I. Continued

Below are some conditions under which women work. Speculate on how you might feel about your future wife holding a job after marriage. Put a check in one of the boxes to indicate what you think your feelings would be about her working under each condition.

7. No children; your salary adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

8. One child of pre-school age; your salary adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

9. One child of pre-school age; your salary not adequate
   - ☐ Definitely not
   - ☐ Probably not
   - ☐ Undecided
   - ☐ Probably
   - ☐ Definitely

10. Two or more children of pre-school age; your salary not adequate
    - ☐ Definitely not
    - ☐ Probably not
    - ☐ Undecided
    - ☐ Probably
    - ☐ Definitely

11. Two or more children of school age; your salary adequate
    - ☐ Definitely not
    - ☐ Probably not
    - ☐ Undecided
    - ☐ Probably
    - ☐ Definitely

12. Two or more children of school age; your salary not adequate
    - ☐ Definitely not
    - ☐ Probably not
    - ☐ Undecided
    - ☐ Probably
    - ☐ Definitely

13. Children have grown up and left home; your salary adequate
    - ☐ Definitely not
    - ☐ Probably not
    - ☐ Undecided
    - ☐ Probably
    - ☐ Definitely

APPENDIX J

Instructions for Teachers

EXPLAIN A Career Education program will replace the regular class--the materials which will be distributed are ones which are being developed specifically for the Milwaukee area. There are two parts:

1. A short survey which is stuck inside the front cover of the booklets
2. The booklet, which includes other questions to answer within the text.

Write your name and the date on the booklet cover. Then fill in the survey and put it on the corner of your desk, where I can collect it. Then go on to reading the booklet and filling in the questions. Use pencil if you have one--but if you don't, pen is okay.

During the period, if you have any questions, raise your hand and I'll come over to your desk. The break will be postponed to the end of the period--so that everyone can finish reading the booklet without interruption.

DISTRIBUTE Green booklets to men, yellow to women. (The reason for this is that some of the questions are different and the colors are to make it easier to tell the booklets apart.)

COLLECT SURVEYS

INSTRUCT Five minutes before the end of the period, if there are any students who have not finished reading, ask them to mark their place in the booklet and to go on to the final questionnaire. (Individuals who finish early will have been allowed to leave--but on an individual basis. This option will not be announced at the beginning of the period.)

COLLECT BOOKLETS

TESTING ATMOSPHERE

IT IS TERRIBLY IMPORTANT THAT:

1. There not be any interaction among students after the booklets have been distributed--i.e., talking, among students about the content of the booklets will completely invalidate the study, for the measurement will not be of what one student read but part of the treatment he received and part of another treatment.

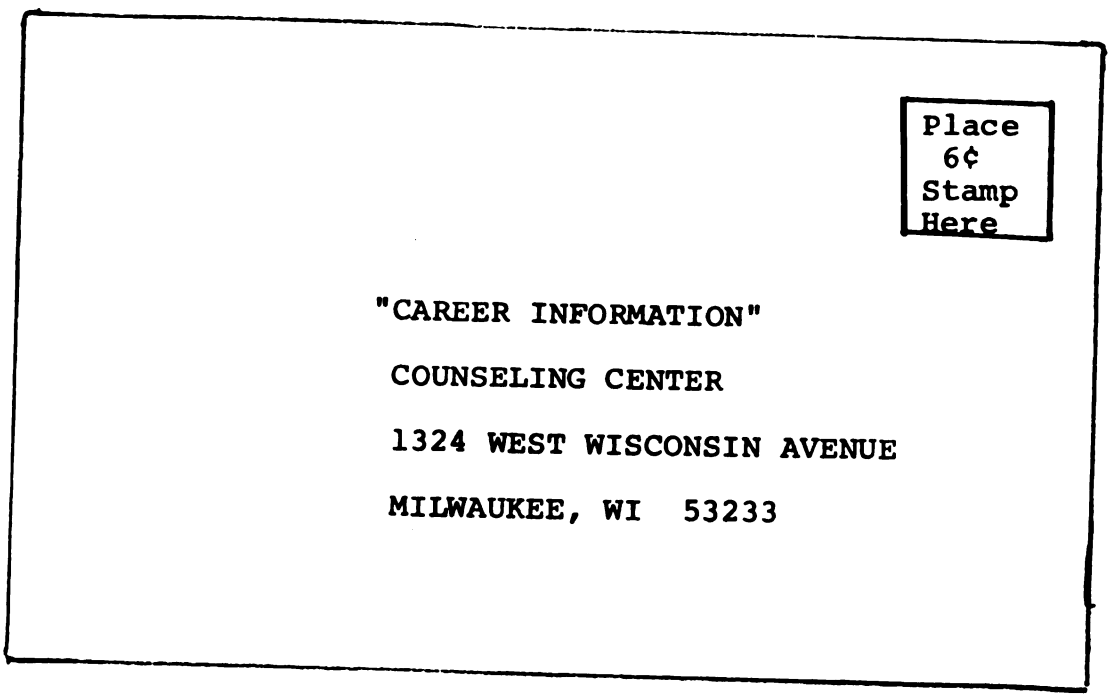
Appendix J. Continued

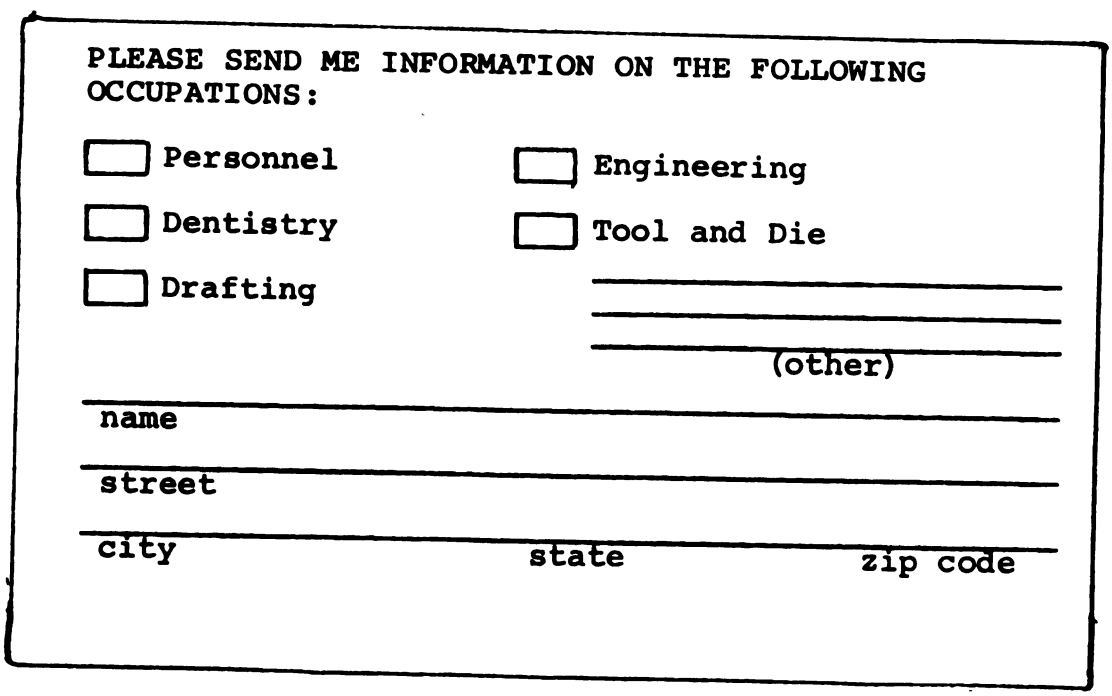
2. All students complete both the survey and the booklet--but without resorting to gestapo tactics, which by generating hostility would also invalidate the study.

I'll be in Room 211. If any problems should come up, send someone to get me and I'll come to consult. For instance, if a student should get a booklet with a page missing, send him down and I'll give him another booklet. Please don't leave the room yourself after the booklets have been distributed.

APPENDIX K

Post Card





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