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Presented in Partial Fulfillment of the Requirements for the Degree Doctor of Philosophy in the Graduate School of The Ohio State University

by

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1974

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CHAPTER I

Introduction

Background

It is well recognized that in the early school years, young boys find school to be a less successful experience than do girls. Although general intellectual functioning as measured by standardized intelligence tests do not indicate sex differences, research data consistently points out that girls learn to read at an earlier age, score higher on standardized achievement tests, make higher grades, and present fewer discipline problems to teachers than do boys. In the past, biological maturity has been posited as the most viable explanation for these existent differences exhibited by boys and girls in the early and middle childhood years. However, research of the sixties, investigating the environmental influence on cognition, achievement, and attitudes of children in the school setting, has cast serious doubt on the "biological readiness" concept in general.

In an attempt to isolate variables which may contribute to the aforementioned sex differences, research has been conducted on the influence of child-rearing practices
by parents, the influence of teachers and peers, and the influence of educational practices and materials. The focus of this study was the influence of the teacher.

The classroom teacher is plainly the most significant adult the child encounters in his school environment. Substantial research is available to support the position that certain attributes of teachers, such as attitudes, expectations, and/or treatment toward children can affect children in such areas as achievement on standardized tests, report card grades, attitudes toward school, self-concept and motivation to achieve. Enough research has been done to warrant further investigation into the possibility that particular characteristics of the teacher can facilitate or impede children's progress in school.

The present investigation was an attempt to examine the influence of the sex of the teacher as one characteristic which may contribute to the sex differences exhibited by young boys and girls in the school situation. In the following pages, a rationale has been developed to support the position that exposure to female teachers in the elementary years may be a contributing factor to the differential amount of success boys and girls find in the school situation. This study was an attempt to lend support to the above position.
Justification of the Problem

It is recognized that the sex of an individual is an important variable in many aspects of behavior, so well recognized in fact, that usually in behavioral science research, sex is included as a variable to be controlled or studied.

A behavior of particular interest to educators in the United States which has consistently shown sex differences has been that of success in school. Extensive reviews of sex differences (Maccoby, 1966; Oetzel, 1966, Sexton, 1969) dramatically point out that young boys find school to be a less successful experience than do young girls. In the words of Reese and Lipsett:

More boys than girls drop out of school and do it earlier....Boys are the trouble makers, the discipline problems, the stutterers, and the nonreaders much more frequently than girls. Teachers' grades predict girls actual achievement on standardized tests more accurately than boys -- and so on and on (1970, p. 614).

Explanations have been posited to account for the sex differences unique to the school situation. The most well-accepted explanation is based on existing knowledge of child growth and development. That is, during early and middle childhood girls in Western culture develop at a faster rate than boys; possess more biological maturity; and, therefore, adapt more readily
to the school situation. Smith (1963), a scholar in the field of reading instruction, and a proponent of this position, discussed the differences of initial reading achievement of boys and girls.

The fact that girls develop more rapidly than boys is too well established to belabor further .... If mental development accompanies physical development as it is normally supposed to do, then the teacher of young children might expect that more boys than girls in her class would have more difficulty in learning to read. Most research on the subject indicates that this is the case (p. 35).

Since the majority of child development literature indicates that children in early and middle childhood within our culture do follow this trend, it has appeared to be a viable explanation.

Paramount to any hypothesis concerning innate differences or similarities, however, is a cross-cultural analysis. In the United States, girls' achievement in reading as measured by standardized tests, exceeds boys' achievement. In Germany, the opposite appears to be true. A much cited study of reading achievement by Preston (1962), while showing American girls to be better readers than American boys, found German boys to be better readers than German girls. Incidence of retardation in reading showed the same national differences, with more German girls than boys and more American boys
than girls falling into that classification. This finding has been coupled with the fact that most teachers in those German primary grades were male. This difference has led some researchers to the belief that the process of sex-role identification may be contributing significantly to the differences between boys and girls in our culture.

Nearly all of pre-school and primary elementary school teachers in the United States are female. According to a day care survey conducted by the Westinghouse Learning Corporation (1971), only about six percent of the adults in the pre-school environment were male and most of those were in either administrative or janitorial positions. The same pattern tends to prevail in a typical elementary school. If male teachers are present, they rarely can be found teaching below fourth grade. This leads to a second explanation, environmental in nature, which counters the "biological readiness" theory. This explanation contends that the predominance of women in the early grades has resulted in a feminine orientation to American schools. Researchers such as Kagan (1971), Sexton (1969), and Brophy (1971), argue that since the teachers in the early years are primarily female, the interests, habits, attitudes and general behavior tenden-
cies of girls are more compatible to the female teacher than are those of boys. Thus, the presumed tendencies of boys to resist a feminizing influence may contribute to their higher rates of learning difficulties and behavior problems in school.

The interactive process between female teacher and pupils may thus be thought to work to the advantage of girls and to the disadvantage of boys. The literature on sex-typing indicates that children are aware of sex-appropriate interests and behaviors by the age of five. When presented with pictures illustrating sex-typed toys, objects and activities, most three-to-five-year-olds prefer those commonly identified with their sex (Brown, 1956; Fauls & Smith, 1956; and Hartup & Zook, 1960). A child, therefore, enters school with a rather clear idea of which activities are sex-appropriate and which are not.

Though appropriate sex-typing is a result of many combined factors, it is believed that its basic components are acquired through identification with and imitation of the same sex parent (Musser, Conger & Kagan, 1969). Though the same-sex parent provides the basic model, the child's world expands and peers and same-sex adults begin to influence the child's conception of appropriate sex-role and subsequent sex-typed behavior.
Children are reinforced throughout their life history for learning the sex-typed behavior of same-sex models. As Mischel observed: "Boys do not learn baseball by watching girls and girls do not learn about fashions from observing boys (1970, p. 38)."

Sex-typed behaviors are by and large learned through observation and imitation. Mischel explains:

Sex-typed behaviors, like all other social behaviors, depend to a large extent on observational learning and cognitive processes. Such learning can occur without any direct reinforcement to the learner.... Individuals learn through observation about the structure of the environment and the behavior of others. They learn not only what people do but also about the characteristics of the physical and social environment (1970, p. 29).

As observational learning is a critical element in the formation of sex-typed behaviors, it would seem likely that if young boys have no adult male models in their environment, they may begin to associate school with femininity.

Kagan (1971) taught second-and third-grade children nonsense syllables to represent objects associated with male, female, and farm. Upon mastery of the task, the children were presented with pictures of neutral school objects (i.e., desk, pencil) and objects related to a farm. More school objects were classified as feminine
than masculine by both girls and boys. Kagan stated,

It is reasonable to assume that the child's sex-role classification of the school environment governs the degree of motivation he will invest in academic tasks. For the child should be more highly motivated to master tasks that he perceives as sex-appropriate than those he views as representative of the opposite sex (p. 51).

Most of the evidence which supports the above position has been obtained by studying the effects of female teachers. These studies, which will be reviewed at length in Chapter II, seem to indicate that when attitudes and behavior toward boys and girls are examined, the female teacher tends to prefer girls to boys and is more effective with girls. Though the evidence is strong, Brophy and Good (1973) caution researchers about hasty interpretations. They believe that such differences could be explained in a different way. Their contention is that the teacher plays a well-defined role, regardless of sex, and that the female sex-role is amenable to the student role, while the male sex-role is not. Presently, research on the effects of male teachers is sparse. Brophy and Good (1973) believe that, "The question can be addressed directly only in studies which compare male with female teachers (p. 564)."

Some research has been conducted comparing the effects of male and female teachers (Bennet, 1962; Brophy
§ Laosa, 1971). Standardized achievement tests, intelligence tests, attitudinal measures, and sex-typing measures have provided the dependent variables. As men cannot usually be found in the primary grades, most of the above research has been conducted on children from fifth grade onward. The studies show little differences that can be attributed to the sex of teachers. However, by fifth grade, children's attitudes, habits and motivational patterns toward school have obviously been well established. It therefore appears that educators must reach into the beginning years of school before these patterns of behavior and attitudes have established roots in order to examine whether sex of the teacher has exerted an influence.

The present study was an attempt to explore differences exhibited by children exposed to a male teacher model and children exposed to a female teacher model. Teacher models were utilized rather than classroom teachers since male teachers in the early school years are virtually non-existent. Kindergarten children enrolled in day-care centers were selected as subjects since they had not yet been exposed to the formal public school learning situation. Performance of a cognitive
task following instruction by a teacher model was utilized as the dependent variable. Performance on the cognitive task was not intended to maintain that children's intelligence could be changed; rather it was utilized as an achievement measure. A control group was utilized to determine if the instruction itself had any effect. The scores were then analyzed to determine the effects of the teacher model condition, sex of subject, and sex of experimenter. Since earlier studies have indicated that sex of the experimenter can produce different effects on boys and girls (Stevenson, 1961; Hill & Stevenson, 1965), this was included as an independent variable in the study, though not of major interest.

It appears that there is justification in the literature to warrant further study of the effects of male teachers. This investigation was one attempt to lend support to the position that male teachers are a necessary element in the school setting.

Orientation to the Problem

Statement of the Problem

The central purpose of this study was to investigate the effects of the sex of teacher models during instruction on kindergarten children's performance of
a selected cognitive task. Within the framework of the investigation, the main effects of the sex of subject, sex of experimenter, and model condition were examined, as well as concommitant interaction effects.

Assumptions of the Study

This study was conducted on the basis of a number of assumptions which are stated as follows:

1. The sex of a child does affect his behavior toward and interactions with adults.

2. The sex of an adult does affect his behavior toward and interactions with children.

3. A child's motivation to perform a task is affected by the degree to which he views the task to be sex-appropriate.

4. The sex of an adult who presents a task to a child for completion helps to determine the sex-appropriateness of the task to that child.

5. A score on a cognitive task can be changed through instruction, but that change does not necessarily represent a change in intellectual ability.

Hypotheses Tested

The following hypotheses were posed for this study:
Main Effects

Hypothesis 1. No significant differences on the scores of the Draw-A-Man Test will be displayed between children who have been given instruction by teacher models and children in the control group who were given no instruction.

Hypothesis 2. No significant differences will be displayed between the boys' scores on the Draw-A-Man Test and the girls' scores on the test.

Hypothesis 3. No significant differences on the score of the Draw-A-Man Test will be displayed between those children who have been tested by female experimenters and those who have been tested by male experimenters.

Interaction Effects

Hypothesis 4. No significant differences on the scores of the Draw-A-Man Test will be displayed by children instructed by same-sex teacher models and children instructed by opposite-sex teacher models.

Hypothesis 5. No significant differences on the score of the Draw-A-Man Test will be displayed between children tested by experimenters of the same sex and children tested by experimenters of the opposite sex.

Hypothesis 6. No significant differences on the scores of the Draw-A-Man Test will be displayed between the children who are given instruction by teacher models of the same sex and tested by E's of the same sex and the children who are given instruction by teacher models of the opposite sex and tested by E's of the opposite sex.
Procedure of the Study

In order to test the aforementioned hypotheses, the following procedure was utilized. Six day-care centers located in predominantly white middle class neighborhoods were selected for participation. They were then assigned to be either a control group or an experimental group, with two centers being utilized as control and four being utilized as experimental. The kindergarten children in these centers were then pretested on the Draw-A-Man Test by four experimenters, two male and two female college students who had been chosen prior to the testing.

Following the initial testing, the experimenters began participating as teacher models in a class in which they had not previously acted as experimenters. At the end of a two-week intervention period, the teacher models individually instructed the children in their class on the performance of the Draw-A-Man Test. Immediately upon completion of the instruction by the teacher model, the child was tested by the same experimenter who had previously tested him. During this same period, children in the control group were tested by the same experimenter who had previously administered the test. Post-test scores of both groups were utilized to test the previously
stated hypotheses. Procedures in all experimental group classes were standardized as much as the situation would allow to focus on and thus be able to attribute differences to the manipulation of the major variable -- sex. Appropriate statistical techniques were used to determine the significance of the data.

**Scope and Limitations**

In general, this study was designed to gain information about the effects of male teachers on boys' performance of a cognitive task. Though the major purpose of this study was to examine the effects of male teachers on boys, reality dictated that both male and female children comprise the average classroom. Therefore, the effects of both male and female teacher models on both male and female children were studied.

Several limitations were imposed by the nature of the sample chosen and the procedure followed. These recognized limitations are listed below and will be accounted for in the interpretation of results.

1. The sample was drawn from primarily a middle class population; therefore, results can only be generalized to middle class children.
2. The sample was drawn from kindergarten children attending day-care centers in the summer. This implies that the principal caretaker was not in the home during the day, which is not typical of all children. This further limits the generalizability of the results.

3. The sample was small, thus producing small and unequal cells to be analyzed, thus increasing the possibility of failing to reject the null when indeed it may be false.

4. The intervention time was of short duration. This could have limited the impact of the teacher model again, increasing the possibility of failing to reject the null hypotheses when it may be false.

5. Teacher models are not classroom teachers; therefore, results could not fairly be generalized to teachers.

6. Although age, race, and socio-economic background were accounted for, intelligence, regularity of attendance, and family background were not.
Despite the aforementioned limitations, it was determined that the major factors which might have had some differentiating effect on the students' performance had been taken into account. As a consequence, it was thought that any significant differences between and among the various groups could be attributed, in large measure at least, to the variable manipulated in the study.

Definition of Terms

Certain specific terms incorporated within this study have been defined in a restricted and limited meaning. The following is a listing of those terms and their respective definitions:

Cognitive Task - A specific performance task which yields a score indicative of intellectual functioning. The task in this experiment was the Draw-A-Man Test.

Intervention - The introduction of male and female teacher models into intact kindergarten classrooms, for a period of two weeks, for one and one-half hours per day.

Kindergarten Children - Children who attended kindergarten in a day-care center and whose ages were between five years-six months, and six years-six months.

Teacher Model - An adult who performed normal teaching functions for a specified amount of time in a classroom setting.
Organization of the Report

This report is organized into five chapters. Chapter I was a general introduction to the study, a statement of the problem, the major assumptions underlying the study, the hypotheses to be tested, the procedure that was followed, some major limitations, and a definition of terms. A review of related literature and pertinent research studies, is presented in Chapter II. In Chapter III, a complete description of the procedure of the study is given. The basic findings of the study are reported in Chapter IV. Chapter V is a summary of the study and includes conclusions drawn from the findings.
CHAPTER II

Review of Related Literature

The central purpose of this study was to investigate the effects of the sex of teacher models on kindergarten children's performance of a selected cognitive task. The effects of male teacher models on male kindergarten children was of particular interest. A review of literature was made to lend theoretical and empirical support to the basic assumptions underlying the study. The review has been divided into three major sections. The first will discuss the theoretical basis for the study. The second will concentrate on research studies which demonstrate that female teachers have not been successful with young boys. The final section will review the few studies that have directly compared the effects of male and female teachers on children.

Theoretical Literature on Sex Role Identification

As noted in Chapter I, proponents of the position that exposure only to female teachers is responsible for young boys relative lack of success in the early years emanates from theories of sex role identification. The
term "identification," has come to have various meanings in the literature, with most present-day textbook authors agreeing that the term often includes and confuses process, source, and product. This review will examine the two more widely accepted theories of identification, psychoanalytic theory and social learning theory, and how each explains the acquisition of sex-typed behavior.

Psychoanalytic Theory

Identification is a concept, first introduced by Freud, which has traditionally been referred to as the process that leads a child to think, feel and behave as though the characteristics of another person belong to him. In 1960, Bronfenbrenner reviewed Freud's writings on identification and concluded that:

Freud was not asking why and how a child might learn an isolated piece of behavior from his parent. He was interested in what he felt to be a more sweeping and powerful phenomenon... the tendency of the child to take on not merely discrete elements of the parental model but a total pattern. Moreover, as Freud saw it, this acquisition was accomplished with an emotional intensity which reflected the operation of motivational forces of considerable power (Bronfenbrenner, 1960, p. 27).

For the most part, Freudian theory deals with identification as a process...a mechanism through which behaviors and motives are learned that impel a child to emulate a model. Thus, identification implies inter-
nalization and self-activation and is based on an emotional tie with the parent.

In order for a child to identify with a parent, two distinct processes must occur. The first is what Freud termed anaclitic identification. Anaclitic identification is pre-sexual in nature, and deals with the child's recovery of lost love objects. As the child is born helpless into the world, he is dependent on the mother who fulfills his basic needs. As he grows older, the child identifies with the mother and emulates aspects of mother to attempt to win back the lost love.

The second process is aggressive identification. For the male child, sexual urges toward the mother bring him into competition with his father. Resolution of the Oedipus Complex results in identification with the father, in an attempt to replace him. Freud maintained that fear of castration provides the motive for the resolution of the wish to replace the father, and thus, with the resolution, the male child enters into a latency period.

For the female child, Freud places a greater emphasis on anaclitic identification. Though the female child comes into competition with the mother for the father's love, and subsequently incorporates aspects of
the mother, Freud believed that this influence is subordinated to the anaclitic identification.

The two major outcomes of this identification process are 1) the development of the super-ego, or conscience, and 2) the development of sex-typed behaviors. Consequently, by the age of six, the child has incorporated his appropriate sex-role as a result of identification with the same-sex parent.

Social Learning Theory

Social learning theorists have steered away from the psycho-sexual explanations of the development of sex-typed behaviors and have attempted to utilize basic principles of behavioral psychology such as patterning of reward, non-reward, punishment, direct and vicarious conditioning, discrimination, generalization and observation learning. Though most research on sex differences has been guided by the Freudian concept labeled "identification," behavioral psychologists recommend the use of the term "imitative learning." However, both concepts encompass the same behavioral phenomenon, namely the tendency for a person to reproduce actions, attitudes or emotional responses exhibited by models (Bandura & Walters, 1963).
The study of imitative learning, also termed modeling, has received increased attention by psychologists in recent years. Though early attempts relied heavily on S-R principles derived from the study of lower animals such as continued reinforcement and reward and punishment (Miller & Dollard, 1941), recent researchers have focused their attention on observational learning and cognitive processes. It has long been recognized that behavior could be modified merely as a consequence of observing models, but now psychologists have developed experimental methods to study this phenomenon. The method usually consists of exposing a person to a model (filmed or live) who displays specific behaviors, attitudes or emotional responses. The degree to which the person viewing the model reproduces the modeled behavior is then measured and labeled imitative learning. Specifically, imitative learning refers to behavior modifications that result from modeling stimuli.

Based on recent research, behavioral psychologists believe that observational learning plays a critical role in the learning of sex-appropriate behaviors. Reinforcement from a child's "significant others" for behaving in sex-appropriate ways as well as environmental factors such as exposure to sex-appropriate toys and experiences
certainly have their impact. Nevertheless, observational learning is seen as the key element. Sears, Rau, and Alpert point out:

A pervasive quality such as masculinity (or femininity) receives at least some intentional reinforcement by parents and peers, of course, but the training task required for creating this kind of role conformity seems too great to permit an explanation in terms of the direct reinforcement of each of the components that compose the roles (1965, p. 2).

As in Freudian theory, the same-sex parent is viewed as the primary model from which a child learns his appropriate sex role. Research has been conducted on parental characteristics which produce imitative behavior from children. From this research, two model characteristics appear to be consistently shown as critical factors in a child's imitation of a same-sex parent: dominance and nurturance. Though they are labeled differently in different studies, the behavioral phenomena are relatively consistent. It is interesting to note these same characteristics are manifest in Freud's anaclitic and aggressive identification. The stereotype of sex-role behaviors in our society prescribe that the father is the more dominant member of the family unit. When this is not the case, disrupting effects on the male child usually result.
Heatherington (1965) investigated the effects of the sex of the dominant parent on sex-role preference, parent-child similarity, and the child's imitation of the parent. Dominance of the parent was the most critical factor in a child's imitation of the parent, despite sex. However, disruption in the formation of boy's sex-role preference and low father-son similarity was found when the mother was the more dominant parent. Parental dominance had little effect on sex-role preferences in girls or in mother-daughter similarity; however, paternal dominance was related to increased father-daughter similarity.

In another study, Mussen and Distler (1960) identified ten kindergarten boys who rated highly masculine on projective tests and ten kindergarten boys who rated least masculine. Through doll play and maternal interviews, the highly masculine boys were found to have more powerful, nurturant, and rewarding fathers than the boys who rated low in masculinity. This finding is supported by an earlier study by Payne and Musser (1956) with adolescent boys.

When Heatherington and Frankie (1967) attempted to find out which factor was the more critical for the particular sex, they found that maternal warmth was more effective in producing imitation of the mother in girls
and paternal dominance more effective for producing imitation in boys.

In a study of college age men, Moulton, et. al (1966) also found that appropriate sex-role identification was made when fathers were dominant and high in comfort-giving. Thus, it appears that greater disruption in sex-role identification appears to occur in boys when the mother is the more dominant parent. It is interesting that girls do not appear to undergo similar disruptions. Heatherington explains:

Since normal identification for girls involves sustaining and intensifying the mother-child relationship, father dominance may contribute only to cross-sex identification and do little to disrupt the girl's primary identification (Heatherington, 1965, p. 193).

It is assumed that boys are subjected to somewhat more rigid sex-role standards than girls in American culture. The feminine role is less clear than the masculine role. Thus, patterning on her father behaviorally will put a girl under less duress than a boy's patterning on his mother.

As a child's social world expands with exploration of neighborhood and school entry, peers and other adults provide additional models for the child to emulate. The imitation of social behaviors becomes an even more complex process. Selective imitation takes place, for no
child or person completely imitates another person's behavior, no matter how strong the identification. A child learns to select behaviors for imitation. As previously noted, dominance and nurturance appear to be critical factors in a child's identification with and subsequent imitation of a parent. It appears that similar dynamics operate in children's imitation of peers. Hartup and Coates (1967) found that nursery school children, with a history of frequent reinforcement from their peers imitated a rewarding peer model more than children with a history of infrequent reinforcement.

When Hicks (1965) investigated the effects of filmed aggressive peer and adult models on six-year-old children, he found that while peers had the most immediate influence in shaping aggressive behaviors, the adult male had the most lasting effect. Considering that physical aggression is considered a masculine sex-typed behavior, it is significant that the male adult model was more influential over time than the male peer. According to Miller and Dollard (1941) who outlined the major principles on imitative learning in their classic work, *Social Learning and Imitation*, advanced age, prestige and power are characteristics of models which facilitate imitative learning. Thus, the classroom teacher who possesses these characteristics would appear to be a potent model for imitation
by children. As previously noted, dominance and nurturance are significant variables in a child's imitation of a parent. Learning theory would predict that generalizability from parent to teacher would occur if teachers possess characteristics similar to parents. Since by the nature of the occupation, they possess power and traditionally play a dominant role in the classroom, the nurturant variable requires investigation. Since rewarding or nurturant models are imitated to a greater extent than non-rewarding models (Hartup & Coates, 1967; Bandura & Huston, 1961), it would appear that a rewarding teacher would facilitate imitation in children. However, when Friedman and Bowers (1971) studied the imitative verbal behavior of first-grade children in classrooms with female teachers who had a high frequency of rewarding behavior, they found that boys and girls differed significantly on their frequency of imitative verbal behavior, with girls imitating their teacher more often than boys.

Other studies utilizing filmed models also suggest that the sex of the adult is a significant variable. Stevenson, Hale and Hill (1967) showed films of male and female adults playing either supportive or neutral roles to nearly 2,000 elementary-age children. When children were asked to choose which adult they preferred, they found that both younger and older boys and girls overwhelm-
ingly chose adults of their own sex, despite the role played by the adult.

Maccoby and her colleagues (Maccoby and Wilson, 1957; Maccoby, Wilson, and Burton, 1958), have conducted research with adolescents and adults which have yielded similar results. They have found that after reviewing films, adolescents and young adults recalled better the behavior of same-sex models, especially when the models were displaying appropriate sex-typed behavior. Through the use of eye-track machines, they have also demonstrated that people pay more attention to same-sex models than opposite sex models.

Rosenblith (1959) attempted to find out if the sex of the model and/or the way the model treated the child, affected the imitation of the model by the child. In this study of kindergarten age children, Rosenblith found that male models were more effective for both sexes, though the results were significant only for girls. She also found that when the condition of attention was compared to the condition of attention followed by withdrawal of attention, girls did better with attention throughout, while boys performed better with the "attention...withdrawal of attention" condition, particularly with male models.

In another study by Rosenblith (1961), attentiveness, sex of model, and imitation on a cognitive task
and matching of colors was explored. In this study, Rosenblith found that boys imitated same-sex models more than girls. She also found that girls imitated the model that provided more attention, despite the sex of the model.

These studies tend to imply that the model characteristics of sex and dominance are important in facilitating imitative learning in young children. Such a theoretical framework suggests that a teacher by role is dominant in the classroom, who is nurturant and the same sex as the child, should produce more imitation from same-sex children than opposite-sex children.

Kagan's study (1971) indicated that second grade children viewed neutral school objects as feminine when forced to assign a gender. This was also confirmed by Brophy and Laosa (1971) for children who had finished only one year of kindergarten. Since boys in particular are highly motivated to perform sex-appropriate tasks, it appears that lack of male teachers may certainly affect their motivation to achieve in the classroom.

Female Teacher-Male Student Interactions

Recently, periodicals directed toward teachers of young children abound with articles stressing the importance of having male teachers for pre-school and primary
age children (Burtt, 1965; Kyselka, 1966; Williams, 1970; Kendall, 1972; Mendelson, 1972; Milgram, 1972; Sciarra, 1972). Some excerpts from these articles, which are directed toward a non-research oriented audience are as follows:

Male role models are essential to the healthy growth and development of the young child, but most young boys and girls in pre-school and in primary school spend many hours each day in a feminized school environment (Milgram, 1970, p. 187).

Day-care centers and baby sitters usually mean more women (Kendall, 1972, p. 358).

More...needs to be done to offer a variety of identification models and choices to pre-school children, especially boys (Sciarra, 1972, p. 190).

Men teachers for young children are being encouraged, yet a paucity of research exists in the direct comparisons of male and female teachers and the subsequent effects on young children.

A major impetus to study the effects of male teachers has come from the numerous studies which demonstrate that young boys in our culture are less successful in school than young girls (Maccoby, 1966; Oetzel, 1966, Sexton, 1969). The preponderance of female teachers in the primary grades, coupled with existing theory and knowledge of the sex-role identification process suggests that female teachers' attitudes and general behavior tendencies may be more compatible to teaching young girls than
young boys. It also follows that since the motivation to perform appropriate sex-typed behaviors is especially strong in boys, boys may resist the feminizing influence and thus do more poorly in school. There is substantial evidence to support this contention.

McNeil (1964) used programmed instruction to teach work recognition to boys and girls at the kindergarten level. After three weeks of instruction, boys' achievement exceeded that of the girls. After a year of ordinary classroom instruction by female teachers, 67 per cent of the boys had dropped in rank compared to a 27 per cent drop in rank by girls, when administered a similar task. Through interview data with the students, it was found that neither boy nor girl students perceived boys as receiving equal treatment to girls. Teachers also ranked boys as having little or no motivation to read significantly more than girls. In another study, Fletcher and Atkinson (1972) found that when children taught beginning reading by a traditional method were compared with children taught by computer-assisted instruction, the children taught by the computer-assisted instruction outperformed those taught traditionally. The results were especially marked for the boys.

Since the teachers in both studies were female, inferences regarding the influence of the sex of the teacher
would be premature without further evidence. However, they do indicate that boys learn beginning reading better from a structured non-teacher directed approach.

In an attempt to replicate part of McNeil's investigation, Slobodin and Campbell (1967) asked first grade boys and girls a variety of questions designed to determine whether they perceived differential treatment from their teachers in reading groups. The results indicated that boys were viewed as receiving more negative teacher comments than girls as well as having less opportunity to read orally than girls. Though no significant differences were found between boys' and girls' reading achievement, the findings of student perceptions is consistent with those of McNeil.

The importance of children's perceptions of their teachers' feelings toward them was demonstrated by Davidson and Lang in 1960. Two hundred-three fourth-, fifth-, and sixth-grade children, classified as good readers, were given a checklist of trait names. They were asked to rate how their teachers perceived them. The teachers then rated them on achievement and on a number of behavioral characteristics. The findings indicated that the children's perception of their teacher's feelings toward them correlated positively and significantly with self-perception. Interestingly, the more positive the
children's perception of their teacher's feelings, the better was their academic achievement and the more desirable their classroom behavior as rated by the teacher. The finding of particular interest to this study was that girls perceived teachers' feelings more favorably than did boys.

Two studies will be discussed here that have attempted to answer the question: Do female teachers actually favor girls in their classroom interactions? Meyer and Thompson (1956) investigated the frequency of women teachers' praise and blame contacts with sixth-grade children. They found that boys received more disapproving contacts than did girls. Furthermore, on a "Guess Who?" socio-metric instrument, both boys and girls nominated more boys than girls for disapproval descriptions.

More recently, Biber, Miller & Dyer (1972) studied the distribution of instructional contacts and reinforcement in four pre-school programs. The four programs were Bereiter-Engelmann, a structured academic program; DARCEE, a program emphasizing attitudes as well as abilities; Montessori, an individualized academic program; and a traditional pre-school. Girls received more instructional contact than boys in all four programs. Girls also received more positive reinforcement for instruction than
boys in every program except Bereiter-Engelmann.

The above studies do indicate a definite tendency for female teachers' attitudes and behaviors to be more positive toward and effective with girls than with boys. In addition, two studies indicate that teachers reinforce and prefer feminine behavior.

A study by Fajot and Patterson (1969) found that teachers reinforced both girls and boys for feminine behaviors and seldom reinforced masculine behaviors, even in boys. It is interesting to note that a countering peer influence was present. Both sexes reinforced sex-appropriate behaviors in the same and opposite sex peers.

Levitin and Chananie (1972) administered a questionnaire describing hypothetical children to forty female white middle-class primary school teachers. Each hypothetical child was described as performing one of three different behaviors: dependency, aggression, and achievement. In addition, male or female names were paired with the behaviors. Both achievement and dependency were the most approved behaviors regardless of the sex of the child. However, dependent and achieving girls were significantly preferred over boys described as having the same behaviors. As might be suspected, aggressive behavior was the least approved behavior despite the sex of the child. These
teachers also ranked the dependent girl and the aggressive boy as the most typical of real children they had taught.

From the above review, it would seem to follow that teachers of the same sex who exhibit nurturant warm behavior toward children would be effective models and, consequently, be more effective teachers.

The question really is: What effect does the sex of the teacher have on children's achievement in the elementary years? Do boys lack motivation to do well in school as Kagan (1971) and Sexton (1969) suggest, because they do not perceive school as a masculine activity? Does the sex of the teacher make a difference in boys' performance? If social learning theory as it applies to sex-typed behavior is accurate, boys should do better with male teachers than with female teachers. Thus far in the review, the focus has been on theoretical and empirical support for the assumptions underlying the study; the remainder of the review will be directed toward those studies which have compared the effects of male and female teachers on young children.

**Male Versus Female Teachers**

There is a paucity of research comparing the effects of male versus female teachers. Most of the research
which has been done has not concentrated on the young child. Since male teachers are not usually found in the primary grades, it is understandable that this is so. At best, findings from the various studies are contradictory.

Bennet (1966) compared the achievement growth of fifth-grade students having male teachers with those having female teachers. Self-contained classes of fifteen male teachers and sixteen female teachers were compared. Using the Stanford Achievement Test, pupils of female teachers showed greater overall achievement than pupils of male teachers, and female pupils showed more academic growth than male pupils.

Clapp (1967) compared the effects of nineteen male teachers with thirty female teachers on fifth-grade boys' reading achievements. No significant differences were noted at the conclusion of the study. In another study of fifth-grade boys, Lahaderne and Cohen (1972) met with the same results.

A study cited by Strasz et al. (1972), designed to determine the effects of the sex of a teacher experimenter upon learning, used a paired associate task as representative of learning to read sight words. Twelve teacher experimenters gave individual instruction to first- and fifth-grade children. Consistent with other research, girls
scored significantly higher than boys at both grade levels. However, teacher sex did not affect achievement.

Brophy and Laosa (1971) compared the effects of a husband-wife teacher team and a female teacher on kindergarten children. The female-taught classroom provided a typical environment, consisting largely of materials appropriate for socio-dramatic play and arts and crafts. The husband-wife classroom included many male-oriented activities and equipment, such as an obstacle course, a fort, and tools. The husband-wife team split the teaching responsibilities, with the exception that the husband read regularly aloud in a deliberate attempt to associate reading with the masculine role. The data showed small but insignificant differences on measures of sex-typing and sociometric play patterns. However, on spatial ability as measured by the Primary Mental Abilities Test, children taught exclusively by the female teacher evidenced a marked inferiority. Children in both classes associated books and reading with the female role, despite the concentrated attempt by the male teacher.

Based on the assumption that teachers' expectancies and/or students sex-role identification could operate to raise or lower performance of students, Shinedling and Pedersen (1970) studied the effects of sex of teacher and
student on children's gain in quantitative and verbal performance. Two hundred-eight fourth-grade students, who were in self-contained classes of four female and four male teachers, were tested on the California Achievement Test. Results indicated that boys, under male teachers did significantly better than any other group in quantitative performance and that they did significantly worse in verbal areas under female teachers than any other group.

Some studies have concentrated on the effect of the sex of experimenters under social reinforcement conditions. Stevenson (1961) found that with six-to seven-year-old children, male experimenters obtained higher levels of performance with girls on a simple marble dropping task and, conversely, female experimenters obtained higher levels of performance with boys. Odom (1966) utilized six-year old children in a study of social reinforcement on a complex probability learning task and supported the cross-sex effect found in six-year olds by Stevenson.

To confuse the issue, Silverman and Waite (1969), in a study of test anxiety and the effectiveness of social and non-social reinforcement in third- and fourth-grade children, found that male experimenters as contrasted to female experimenters obtained a significantly higher level of performance with both boys and girls when social reinforcement was used.
Pedersen, Shinedling, and Johnson (1968) studied the effects of sex of experimenters and sex of subjects on children's quantitative test performance. Twelve third-grade boys and twelve third-grade girls were tested a total of six times, three times by male experimenters and three times by female experimenters, on the arithmetic subtest of the Wechsler Intelligence Scale for Children. The sum of the child's score under the male experimenters and the sum under the female experimenter was used as the basis for analysis. They found that girls tested by female experimenters did significantly better than boys tested by female examiners. Also, girls performed significantly better when tested by female experimenters than when tested by males.

At best, the evidence is confusing. It is evident that if male teachers are to be advocated for young children, more substantive research needs to be done. Research with older elementary children tends to suggest that the sex of the teacher has little effect on boys' achievements, yet it could be assumed that behaviors and attitudes toward school would be firmly established by the time children reach the intermediate and upper grades. Certainly more controlled experimental studies with young children are in order before the idea is abandoned that male teachers
could have a significant positive impact on boys' achievement in the elementary years. This study was an attempt to lend such empirical evidence.
CHAPTER III

Methodology of the Study

It was the purpose of this study to investigate the effects of the sex of teacher models on kindergarten children's performance on a selected cognitive task after having received instruction from a teacher model on the task. To investigate the effects of male teachers on male children was of particular interest. The sample, experimenters, instrument, and procedures used in the study to achieve this purpose are described in the present chapter.

Sampling Procedures

Selection of Sample

In June of 1973, six day-care centers in the Columbus, Ohio area were solicited for participation in this study. The criteria for selection of the day-care centers were as follows:

1. An organized kindergarten program for five- and six-year old children.

2. Located in a predominantly white middle class neighborhood.
3. Enrollment for the summer months of at least ten to fifteen children between the ages of five years-six months and six year-six months, and the children were to be in a self-contained class, taught by a female teacher.

4. Willingness to participate in the study either as an experimental group or a control group.

The procedures for selecting the day-care centers were as follows:

Phone contact was made by the principal investigator with the directors of at least sixteen day-care centers that met criteria 1 and 2. Knowledge of these criteria was gathered from the yellow pages of the phone book and from people familiar with local day-care services. During the contact by phone, the investigator explained the purpose of the study as well as the above-mentioned criteria and then inquired into the possible interest of the center's participation in the study. As a result of the initial phone contacts, seven day-care centers expressed an interest in participating. Preliminary visits were then made to these centers by the principal investigator.

During the visits, the investigator explained the study in more detail, toured the facilities to be sure
of adequate available space for testing, met with the participating kindergarten teachers, asked for assurances that adequate numbers of children would be available, and explained the time schedule and level of involvement according to which group the particular center would be assigned.

One of the centers had misunderstood one of the criteria and did not qualify for participation and was therefore eliminated. The remaining six appeared to meet the qualifications, and arrangements were made to begin the study.

**Selection of Experimenters**

Four experimenters, two male and two female, were needed for implementation in this study. During the month of June, posters advertising the positions were posted on various areas of the campus. The criteria for the experimenters had been established and were as follows:

1. Prior satisfactory experience working with young children.
2. Two morning hours free each day for a period of six weeks.
3. Own transportation.
4. Commitment to completion of the study.
Of the four experimenters that were selected for
the study, two had master's degrees in education, one had
a bachelor's degree in special education, and the other
was a senior in home economics. All four had had ex-
perience working with young children, though none of the
four had been regular classroom teachers of kindergarten
children.

The experimenters were interviewed by the investiga-
tor as they applied. Decisions for hiring were based on
the interview plus a phone or personal contact with a
reference supplied by the applicant. Many females ap-
plied for the position but only four males. Of the four
males, only the two finally selected had the needed time
period free to participate.

Assignment of Sample and Experimenters

After the selection of the six day-care centers,
assignment to experimental and control group conditions
were made. The centers were randomly assigned to make a
control group consisting of two classes and an experimental
group which contained four.

In the control group, random procedures were utilization
to assign E's by sex to each class and to assign the
children equally by sex to the E's, such that half of the
boys and girls in each class were tested by a male E and the other half were tested by a female E. At one of the centers, the director brought three extra girls to the male E for testing though he had not been previously assigned to them. This produced an uneven number of female subjects tested by that male experimenter.

The assignment of E's to the experimental classes for testing was conducted in the same random manner as their assignment to the control group. However, as the experimental group consisted of four classes, each E tested half of two classes rather than half of one. The E's were then randomly assigned to one of the two classes in which they had not conducted any pre-testing. This final assignment was for the teacher model condition.

Posttesting was conducted by the E's on the same children to whom they had been originally assigned for pretesting. During pretesting, thirty-five boys and thirty-seven girls with a total of seventy-two children, constituted the sample. Because of attrition over a six-week period, the sample size decreased considerably. The attrition was basically attributed to absence due to summer vacations.

In Table I, a summary is given of the number of boys and girls tested for whom complete data were collected.
TABLE I
STUDENT SAMPLE SIZE BY SEX AND CONDITION

<table>
<thead>
<tr>
<th>Condition</th>
<th>Boys</th>
<th>Girls</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control</td>
<td>10</td>
<td>8</td>
<td>18</td>
</tr>
<tr>
<td>Experimental</td>
<td>16</td>
<td>23</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>26</td>
<td>31</td>
<td>57</td>
</tr>
</tbody>
</table>

Instrument

The instrument utilized in this study was the Harris version of the Goodenough Draw-A-Man Test. The Goodenough-Harris Scale's correlation with the Stanford Binet is .59 for six-year olds; the reliability for test-retest is .75. Interscorer reliability ranges from .80 to .96 (Harris, 1967). The Goodenough instrument's universality has been well documented over the past fifty years. The test consists of the E asking the child to draw a picture of a man, then a picture of a woman, and finally a self-portrait. The drawings are then scored according to established criteria. Only the man and woman drawings have been standardized on Harris' revision. Therefore, only the average of the standard score of the male and
female drawing was used for statistical analysis. Repeated practice sessions, which will be described in more detail later, yielded a final interrater reliability coefficient of .97 amongst the four experimenters.

**Procedures**

The problem to be analyzed was the immediate effectiveness of a teacher models' instruction on a given cognitive task. To study this problem, five major procedural phases were implemented.

1. Training of the experimenters.
2. Pretesting of all children.
3. Intervention of teacher models.
4. Individual instruction by teacher models to the children in their class followed immediately by posttesting by original E.
5. Posttesting of control group.

**Training of Experimenters**

The E's underwent twelve hours of training during the course of the experiment. Six hours were spent in training to administer the test and the instruction. The other six was spent in activities directly related to their teacher model tasks in the classroom.
Session 1: After a general orientation, the E's were given the standardized instructions with the scoring guide for the test with a discussion of the standardized procedures for administering and scoring the test. The E's were then paired to practice scoring two drawings which had been copied from Harris' book, *Children's Drawings as Measures of Intellectual Maturity*.

Each pair of E's had the same drawing of a man and a drawing of a woman which the other pair of E's had. They worked with their partner on each drawing. The pairs spent the remainder of the first session studying each category and coming to an agreement with their partner on how the drawing should be scored. As interscorer agreement was necessary, it was essential that the E's come to agreements on the scoring of the drawings. At the beginning of the second session, the scoring of the drawings were discussed, with each pair of E's describing why they gave or did not give credit for a particular item. The pairs were then broken up and re-paired, and the procedure was repeated with new drawings. During the following discussion, agreements began to be reached on uncertain areas of scoring. The E's were then given identical sets of four drawings to be taken home and scored individually, in order to compute an interscorer
reliability. The E's were then given specific instructions as to their responsibilities for the next phase of orientation.

During the next two days, the E's spent two hours each day at the day-care center in the class in which they were to perform as teacher models. Originally, it had been planned that they would observe and make plans with the teacher to outline specific activities to perform during the intervention period. The E's quickly found themselves being participants instead of observers, but they did make the necessary plans with the teachers.

**Session 2:** During the next session with the principal investigator, the E's returned the scored drawings and it was evident by the raw scores that interscorer agreement was not within an acceptable range. One E, whose background was special education, was consistently scoring higher. Discussion of disagreements was again held and more agreements were again reached. Four more drawings were then given to them to score again on their own.

**Session 3:** The drawings were returned the next day and the scores indicated that they would be within an acceptable range. They were then computed with an interscorer reliability of .97 which was sufficient to proceed with the pretesting phase. Also within this third session, specific activities to be used in the classroom were
discussed and there was some role-playing of administering the test. The standardized procedures for administration of the test were again reiterated to the E's.

**Session 4**: During the intervention period, another training session was held to explain and practice the instructional phase of the experiment. After the presentation of the materials and basic explanation of the standardized procedures to be used, role-playing was again utilized to provide practice. After an initial "silliness" period, the E's began practicing seriously, and the principal investigator felt all four were sufficiently ready to administer the instruction.

**Pretest**

After the initial training sessions, the E's went in pairs to their assigned schools to conduct the pretesting. Since two E's could test in one school at a time, the pretesting was completed within three days. It had been planned that any children who were absent could be tested by the E's during those last two days of that week. Attempts to test two of the children who had been absent on the day of pretesting turned out to be in vain as the children were on vacation with their parents.

After the children had been randomly assigned by sex to the E's, they were taken individually to the test-
ing areas. The teachers in each class prepared the children so that the testing would not be perceived as a threatening activity. Each E had a designated area for testing that varied from school to school, depending on the facilities. These ranged from a teachers' lounge to a corner in a basement. Despite the variability, all areas were isolated from regular noise and disturbances.

During the pretest, the E's followed in detail the standardized directions. The child first drew a picture of a man, then a picture of a woman, and lastly, a picture of himself. After the pretest, the child was accompanied by the E to his classroom. Most of the children were pleased with the drawing opportunity, and no child refused to participate.

Intervention

The purpose of the intervention was to establish a "teacher set" in the child's mind about the teacher model in the classroom. It was also intended to allow sufficient time for the teacher model and the child to become familiar with each other and for the child to form an opinion about the teacher model.

The teacher models were introduced into the classrooms by their regular classroom teacher as another teacher who would take charge of the class for awhile. The
classroom teachers explained to the children that they were to behave for the new teacher as they would for her. As the teacher models had been in the classrooms the prior week, the children were already familiar with the teacher models and the models were immediately able to assume full responsibility.

The teacher models were instructed to blend into the normal routines and activities. In line with the purposes of the intervention, it was necessary that the teacher models attempt to maintain as much as possible the previous structure of the class and to perform the same types of activities the regular classroom teacher performed.

With the variability of the situations in mind, several specific things were done to exercise control over the individual situations as well as to help fulfill the purpose of the intervention.

1. Each teacher model was in the classroom for at least one and one-half hours each morning, with only a ten minute excess being allowed.

2. Each teacher model was in each classroom as a teacher model for a total of nine days.

3. Each teacher model interacted in as natural a manner as possible. This included reprimanding interactions as well as positive interactions.
4. Each teacher model initiated at least one positive interaction containing a positive remark to each child every day. Each teacher model avoided letting a child monopolize his time.

5. Each teacher model conducted the opening exercises and was in charge of the morning snack time.

6. Each teacher model was in charge of the instructional activities for one and one-half hours. These instructional activities varied from teaching songs or demonstrating art materials to working with number concepts. Any age-appropriate activities were allowed except paper-pencil drawing. The regular classroom teacher was out of the classroom the majority of the hour and a half.

The teacher models reported that by the second day the majority of the children were calling them "teacher." Children in day-care centers normally have exposure to many adults and therefore generalize the word "teacher" to most adults they come into contact with within that setting. The teacher models had been prepared for this by the principal investigator and were instructed to post their name on the board each day and to encourage children to learn their names in addition to "teacher." At the end of the first week, the E's reported that most children were calling them by either their first or last names,
while some continued with the word "teacher." By the end of the intervention period, the teacher models reported that they felt they were in charge of the class and that they felt like the "teacher."

**Instruction and Posttest of Experimental Group**

At the end of the intervention period, each child received individual instruction on the *Draw-A-Man Test* from their teacher model. This individual instruction was followed immediately by posttesting by the E that had pretested the child. The schedules of the four E's were arranged such that each E instructed half of the children on one day, tested at another center the next day, instructed the other half another day, and again tested on the final day. For two of the E's, the schedule began with testing, ending with instruction. By the use of this schedule, the teacher model was in his particular center every other day and thus did not lose contact with the children.

The children were taken individually by the teacher models to designated areas. These areas were the same that had previously been utilized by the E's during the pretesting. The teacher models then utilized standard procedures to give the standard instruction. (See Appendix A for specific instructions.) A fifteen minute time limit was established for the instruction.
because of the fatigue factor of children this age. At the conclusion of the instruction, the teacher models had the child stretch and flex his fingers and, in general, relax or jump around for a few minutes before taking the child to the E to be tested.

Upon conclusion of the day's instruction and post-testing, the teacher model went into the classroom and personally praised each child for the pictures he had drawn for the E. This was done to help alleviate any tension the child might have felt about his performance since part of the introduction to the experimenter included a statement to the effect: "It's really important to me that you draw your best."

Each child was then tested by the E on the man and woman drawing of the Draw-A-Man Test. The standard administration procedures were again used. The self-portrait was eliminated because of the fatigue factor and because it was not being used to compute the final score.

In addition to the test, several questions were asked of the children by the E's prior to the administration of the posttest. The children were asked to explain who the teacher model was. If the child did not indicate that the teacher model was his teacher, he was then asked the simple question: "Is Mr./Mrs. ______ your teacher?" This was done to assure that a "teacher
set" had been established. In every case, the child was either able to explain that the teacher model was his teacher or to respond "yes" to the posed question.

**Posttest of Control Group**

The posttesting of the control group was carried out in essentially the same manner as the pretesting. The E's tested the same children they had pretested. They followed the standardized procedures but also eliminated the self-portrait since it was not to be used in the final scoring.

**Experimental Design and Analysis**

The experimental situation was structured to study, 1) the effects of instruction by teacher models, 2) the effects of children's performance as a function of the sex of the teacher models and sex of the children, and 3) the effects of their performance as a function of the sex of the experimenters and sex of the children. From the 2 x 2 x 3 factorial design diagrammed and presented in Figure 1, it can be noted that the cells were unequal. However, the condition of at least two observations in each cell was met.
<table>
<thead>
<tr>
<th></th>
<th>$A_1$</th>
<th></th>
<th>$A_2$</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male E's</td>
<td></td>
<td>Female E's</td>
<td></td>
</tr>
<tr>
<td>$B_1$</td>
<td>Male S's</td>
<td>Female S's</td>
<td>Male S's</td>
<td>Female S's</td>
</tr>
<tr>
<td></td>
<td>n = 2</td>
<td>n = 3</td>
<td>n = 5</td>
<td>n = 5</td>
</tr>
<tr>
<td>$B_2$</td>
<td></td>
<td></td>
<td></td>
<td>n = 15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$C_1$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction by Male Teacher Models</td>
<td>n = 2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$C_2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instruction by Female Teacher Models</td>
<td>n = 7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$C_3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Instruction by Teacher Models</td>
<td>n = 5</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

$A =$ Sex of Experimenter $a = 2$

$B =$ Sex of Subject $b = 2$

$C =$ Model Condition $c = 3$

Figure 1. Diagram of Design Arrangement with the number of subjects in each cell
The dependent variable was the posttest score on the Draw-A-Man Test. Since the cells were of unequal number, the resultant data was analyzed by an unweighted cell average fixed factor analysis of variance using cell means as single observations (Winer, 1971, p. 447).

**Summary of Chapter**

In Chapter III, the methodology of the study has been discussed. This included the sample and experimenter selection and assignment, the procedure for testing and intervention, and the design utilized to analyze the data.
CHAPTER IV

Results

The focus of this investigation was the effect of the sex of teacher models on kindergarten children's performance of a cognitive task. Specifically, it was intended to lend support to the position that young boys could perform better in a learning situation if they were instructed by male teachers. Since the theoretical assumptions to the study indicate that same sex pairings of teacher-student should produce optimal learning conditions, both male and female children with male and female teacher models were studied.

All children in the study were pretested prior to the implementation of the intervention. At the end of the intervention period, teacher models individually instructed the children in the experimental groups on the performance of the Draw-A-Man Test. Immediately upon completion of the instruction, the posttest was administered. The control group was also given the posttest, but received no instruction.

A 2 x 2 x 3 factorial design arrangement was utilized, with the resulting data being analyzed by an unweighted cell average fixed factor analysis of variance.
Significance level was set at .05. The results of the posttest data were utilized to test the hypothesis set forth in the study.

**Pretest Results**

Children in both the experimental and control groups were tested prior to the initiation of the intervention. Since only the posttest scores were used in testing the hypothesis of the study, it was necessary to analyze the pretest data to assure that no significant differences existed among the groups prior to the intervention.

Table 2 represents the pretest score means and assorted standard deviations for the $2 \times 2 \times 3$ design arrangement.

An unweighted cell factorial analysis of variance was performed on the data. The findings are summarized in Table 3.

The results of the analysis revealed no significant effects. This analysis coupled with the control procedures of random assignment of experimenters and children lends credibility to the assumption that any significant differences exhibited on the posttest scores may be ascribed to the variables manipulated in the study.
TABLE 2
MEANS AND STANDARD DEVIATIONS OF DRAW-A-MAN PRETEST SCORES OF CHILDREN CLASSIFIED BY SEX OF E, SEX OF S, AND MODEL CONDITION

<table>
<thead>
<tr>
<th>C1</th>
<th>Instruction by Male Teacher Models</th>
<th>Male S's</th>
<th>Female S's</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>B1 Male E's</td>
<td>105.75</td>
<td>97.00</td>
<td>90.20</td>
</tr>
<tr>
<td></td>
<td>B2 Female E's</td>
<td></td>
<td>17.68</td>
<td>10.73</td>
</tr>
<tr>
<td></td>
<td>SD's</td>
<td>2.47</td>
<td>17.11</td>
<td>13.79</td>
</tr>
<tr>
<td></td>
<td>N's</td>
<td>2</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>C2</td>
<td>Instruction by Female Teacher Models</td>
<td>95.43</td>
<td>95.81</td>
<td>88.25</td>
</tr>
<tr>
<td></td>
<td>SD's</td>
<td>17.11</td>
<td>17.26</td>
<td>13.79</td>
</tr>
<tr>
<td></td>
<td>N's</td>
<td>7</td>
<td>8</td>
<td>2</td>
</tr>
<tr>
<td>C3</td>
<td>No Instruction by Teacher Models</td>
<td>96.00</td>
<td>83.90</td>
<td>109.70</td>
</tr>
<tr>
<td></td>
<td>SD's</td>
<td>19.61</td>
<td>11.42</td>
<td>17.93</td>
</tr>
<tr>
<td></td>
<td>N's</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>TOTALS</td>
<td>X's</td>
<td>97.11</td>
<td>92.31</td>
<td>98.00</td>
</tr>
<tr>
<td></td>
<td>SD's</td>
<td>16.35</td>
<td>15.81</td>
<td>16.83</td>
</tr>
<tr>
<td></td>
<td>N's</td>
<td>14</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Source of Variation</td>
<td>df</td>
<td>Sum of Squares</td>
<td>Mean Squares</td>
<td>F</td>
</tr>
<tr>
<td>--------------------</td>
<td>----</td>
<td>----------------</td>
<td>--------------</td>
<td>-------</td>
</tr>
<tr>
<td>Sex of E</td>
<td>1</td>
<td>.35</td>
<td>.35</td>
<td>.01</td>
</tr>
<tr>
<td>Sex of S</td>
<td>1</td>
<td>36.23</td>
<td>36.23</td>
<td>.63</td>
</tr>
<tr>
<td>Model Condition</td>
<td>2</td>
<td>45.07</td>
<td>22.54</td>
<td>.39</td>
</tr>
<tr>
<td>Sex of E X Model Condition</td>
<td>2</td>
<td>258.94</td>
<td>129.47</td>
<td>2.26</td>
</tr>
<tr>
<td>Sex of S X Model Condition</td>
<td>2</td>
<td>124.68</td>
<td>62.34</td>
<td>1.09</td>
</tr>
<tr>
<td>Sex of E X Sex of S X Model Condition</td>
<td>2</td>
<td>37.40</td>
<td>18.70</td>
<td>.33</td>
</tr>
<tr>
<td>Error (Adj.)</td>
<td>45</td>
<td>2572.56</td>
<td>57.17</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05

\[ F_{95}(1,45) = 4.08 \]

\[ F_{95}(2,45) = 3.23 \]
Posttest Results

The results of the posttest data were utilized to test the hypotheses of the study. Table 4 presents the posttest score means and assorted standard deviations for the $2 \times 2 \times 3$ design arrangement. An analysis of variance was performed on the data. The findings are summarized in Table 5.

The results of the analysis revealed two significant effects. Specifically, the model condition main effect ($F = 3.47; \; df = 2/45; \; p < .05$), and the sex of S by model condition interaction effect ($F = 3.37; \; df = 2/45; \; p < .05$) were observed to be significant.

Interaction Effect

The cell means of the sex of S and model condition factors were graphed to determine the nature of the significant interaction. Examination of the graph (Figure 2) suggested that the model condition had relatively little impact on males. However, a significant difference between model conditions was suggested for females. Therefore, Sheffe multiple comparisons were conducted on the three pairwise model condition group means for females. Only the mean of the females given instruction from male teacher models was demonstrated to be significantly greater than the female control mean ($F = 2.75; \; df = 5/45$;
<table>
<thead>
<tr>
<th></th>
<th>A₁ Male E's</th>
<th>A₁ Female E's</th>
<th>A₂ Male E's</th>
<th>A₂ Female E's</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male S's</td>
<td>Female S's</td>
<td>Male S's</td>
<td>Female S's</td>
<td></td>
</tr>
<tr>
<td>C₁ Instruction by X's</td>
<td>100.00</td>
<td>119.33</td>
<td>110.20</td>
<td>114.20</td>
<td>112.00</td>
</tr>
<tr>
<td>Male Teacher Models</td>
<td>9.19</td>
<td>22.36</td>
<td>23.29</td>
<td>22.07</td>
<td>19.89</td>
</tr>
<tr>
<td>N's</td>
<td>2</td>
<td>3</td>
<td>5</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>C₂ Instruction by X's</td>
<td>105.00</td>
<td>97.69</td>
<td>113.50</td>
<td>106.71</td>
<td>103.77</td>
</tr>
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<td>Female Teacher Models</td>
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<td>11.49</td>
<td>18.38</td>
<td>11.91</td>
<td>13.09</td>
</tr>
<tr>
<td>N's</td>
<td>7</td>
<td>8</td>
<td>2</td>
<td>7</td>
<td>24</td>
</tr>
<tr>
<td>C₃ No Instruction by Teacher Models</td>
<td>96.8</td>
<td>83.90</td>
<td>113.10</td>
<td>89.88</td>
<td>96.58</td>
</tr>
<tr>
<td>Models</td>
<td>23.16</td>
<td>8.24</td>
<td>11.18</td>
<td>11.03</td>
<td>17.93</td>
</tr>
<tr>
<td>N's</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td>TOTALS</td>
<td>101.36</td>
<td>97.44</td>
<td>111.96</td>
<td>105.83</td>
<td>103.67</td>
</tr>
</tbody>
</table>

Mean (̅x) SD (SD's) N (N's)
## TABLE 5

**ANALYSIS OF VARIANCE OF THE DRAW-A-MAN POSTTEST SCORES OR CHILDREN CLASSIFIED BY SEX OF E, SEX OF S, AND MODEL CONDITION**

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>df</th>
<th>Sum of Squares</th>
<th>Mean Squares</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex of E</td>
<td>1</td>
<td>167.41</td>
<td>167.41</td>
<td>2.50</td>
</tr>
<tr>
<td>Sex of S</td>
<td>1</td>
<td>60.49</td>
<td>60.49</td>
<td>.90</td>
</tr>
<tr>
<td>Model Condition</td>
<td>2</td>
<td>465.67</td>
<td>232.84</td>
<td>3.47*</td>
</tr>
<tr>
<td>Sex of E X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of S</td>
<td>1</td>
<td>52.83</td>
<td>52.83</td>
<td>.79</td>
</tr>
<tr>
<td>Sex of E X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Condition</td>
<td>2</td>
<td>39.31</td>
<td>19.66</td>
<td>.29</td>
</tr>
<tr>
<td>Sex of S X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Condition</td>
<td>2</td>
<td>452.35</td>
<td>226.18</td>
<td>3.37*</td>
</tr>
<tr>
<td>Sex of E X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sex of S X</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Condition</td>
<td>2</td>
<td>43.77</td>
<td>21.88</td>
<td>.33</td>
</tr>
<tr>
<td>Error (Adj.)</td>
<td>45</td>
<td>3018.89</td>
<td>67.09</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* p < 0.05

\[ F_{.95(1,45)} = 4.08 \]

\[ F_{.95(2,45)} = 3.23 \]
Fig. 2. Linear Comparison of Cell Means of Posttest Scores of B and C Factors
Of interest, but nonsignificant was the trend for female S's to perform better for male teacher models than female teacher models.

Main Effect

The analysis of data in Table 5 showed the main effect for C to be significant. To specifically test the first hypothesis, however, a compound contrast was conducted between the combined mean of male and female teacher models \((112.00 + 103.77) / 2 = 107.89\) and the overall control group mean \(96.58\). A \(t\) of 2.01 was needed to reach significance at the \(p < 0.05\) level of confidence. Since the computed \(t\) was found to be 2.43, the combined mean representing instruction by teacher models was found to be significantly greater at the 0.05 level than the mean of the control group.

Though this statistical test technically supports the hypothesis that instruction from teacher models would produce significantly higher scores than no instruction, the graph of the interaction demonstrated that the significant difference emanated from the scores of the female S's. Negligible differences were demonstrated by the male S's per model condition (instruction from male teacher models = 107.29; instruction from female teacher models = 106.89; control group = 104.95). However, for female S's differences per model condition were quite dramatic (in-
struction from male teacher models = 116.13; instruction from female teacher models - 101.9; control group - 86.13). Thus, the scores of the female S's tended to raise the combined mean of the two experimental groups and to lower the combined mean of the control group.

Hypotheses Tested

The following hypotheses were tested in this study. They were placed in null form for purpose of statistical analysis.

**Hypothesis 1.** No significant differences on the scores of the Draw-A-Man Test will be displayed between children who have been given instruction by teacher models and children in the control group who were given no instruction.

The analysis of data in Table 5 showed the main effect for C to be significant. A compound contrast was conducted between the combined mean of male and female teacher models and the overall control group mean. The combined mean representing instruction by teacher models was found to be significantly greater at the .05 level than the mean of the control group.

Technically this hypothesis was rejected. However, examination of the interaction between the sex of S and model condition revealed that instruction per se had negligible effects on male S's. It appears that this
hypothesis is rejected on the basis of the variability of female scores per model condition.

**Hypothesis 2.** No significant differences will be displayed between the boys' scores on the *Draw-A-Man Test* and the girls' scores on the test.

Table 5 reveals an $F$ of .90 for the sex of S main effect. Therefore, this hypothesis failed to be rejected. With the balance of the design, it was anticipated that overall boys and girls should do equally well. Figure 2 demonstrates that male S's scores were relatively stable per model condition while female S's scores varied greatly. However, the high score of females given instruction by male teacher models and the low score of females in the control group tended to balance out, such that, the overall mean of female S's was not significantly different from the overall mean of male S's.

**Hypothesis 3.** No significant differences on the score of the *Draw-A-Man Test* will be displayed between those children who have been tested by female experimenters and those who have been tested by male experimenters.

Table 5 reveals an $F$ of 2.50 for the sex of E main effect. Therefore, this hypothesis failed to be rejected due to the failure to observe a significant effect for the sex of E factor. Again, with the balance of the design this finding was anticipated.
Hypothesis 4. No significant differences on the scores of the Draw-A-Man Test will be displayed by children instructed by same-sex teacher models and children instructed by opposite-sex teacher models.

The results of the analysis in Table 5 revealed a significant interaction effect between the B and C factors. A plotting of the cell means (Figure 2) indicated a trend for female S's to do better with instruction from male teacher models than with female teacher models. However, when the Sheffe test was used to compare the mean of females given instruction by male teacher models with the mean of females given instruction by female teacher models, the difference was not significant at the .95 level of confidence. A significant difference was demonstrated between the mean of females given instruction by male teacher models and females in the control group; however, this finding does not reflect on this particular hypothesis. Therefore, this hypothesis failed to be rejected.

Hypothesis 5. No significant differences on the score of the Draw-A-Man Test will be displayed between children tested by experimenters of the same sex and children tested by experimenters of the opposite sex.

Table 5 reveals an F of .79 for the A B interaction. Therefore, this hypothesis failed to be rejected due to the
failure to observe a significant interaction between the A and B factors.

**Hypothesis 6.** No significant differences on the scores of the **Draw-A-Man Test** will be displayed between the children who are given instruction by teacher models of the same sex and tested by E's of the same sex and the children who are given instruction by teacher models of the opposite sex and tested by E's of the opposite sex.

This hypothesis was not rejected because of the failure to observe a significant interaction effect ($F = .33$) among the A, B, and C factors.

**Discussion**

This study was an attempt to lend support to the position that the sex of the teacher is an important variable in the differential amount of success boys and girls have in a learning situation. It was designed specifically to test the hypothesis that same-sex pairings of teacher and student would provide optimal learning conditions.

Results presented in this chapter lend no support to the position that boys will perform better with male teacher models and girls will perform better with female teacher models. Results indicated that sex of the model
made no appreciable difference for boys. The mean of boys instructed by male teacher models (107.29) was not significantly different from the mean of boys instructed by female teacher models (106.89). On the other hand, for females, a trend to perform better for male teacher models ($\bar{x} = 116.13$) than for female teacher models ($\bar{x} = 101.90$) was exhibited; however, it did not reach significance. This, of course, is in opposition to the hypothesis of major interest to the study.

In line with the same thinking that same-sex pairings produce optimal learning conditions, a hypothesis was posed that children tested by E's of the same sex would perform better than children tested by E's of the opposite sex. No significant interaction was observed.

To maximize the effect of sex, a three-way interaction hypothesis was posed. This hypothesis was that children given instruction by teacher models of the same sex and tested by E's of the same sex would perform better than children given instruction by teacher models of the opposite sex and tested by E's of the opposite sex. This interaction also failed to reach significance.

The data from this study lends no support to the position that children will perform better when instructed by a teacher model of the same sex. However, the data
does suggest that for girls, the sex of the teacher model may be an important factor. Though significance was demonstrated only between the male teacher model condition and the control group, there was a definite trend for females to do better with teacher models of the opposite sex.

The significant interaction demonstrated between female S's performance with male teacher models and the female control group appeared to influence the findings for the model condition main effect. A control group was included in the study to affirm that instruction would produce higher scores than no instruction. This was posed as a hypothesis since it was germane to the design and methodology of the study. Technically, this hypothesis was supported by the findings; however, the relatively high scores of girls given instruction by male teacher models and the relatively low scores of girls in the control group appeared to be a major factor in this significant finding since the boys' scores were so stable. Intellectual honesty prevents the affirmation that instruction itself did make a significant difference, since this appeared to be true only for females.
CHAPTER V

Summary and Implications

Summary

The purpose of this study was to investigate the effects of the sex of teacher models on kindergarten children's performance of a selected cognitive task. To investigate the effects of male teacher models on male children was of particular interest.

The sample, selected from six day-care centers in the Columbus, Ohio area, included 57 children attending intact kindergarten classes. Randomization procedures were utilized to assign the centers to treatment groups and teacher models to experimental groups. Randomization procedures were also utilized to assign E's and S's by sex such that half of the boys and girls in each class were tested by a male E and the other half by a female E.

The task selected was the Harris version of the Goodenough Draw-A-Man Test. The pretest was first administered to all children by the E's. In the experimental groups, the pretest was followed by a two-week intervention period by the teacher models. At the culmination of the intervention period, each teacher model provided individual task instruction to each child. This was followed
immediately by the posttest which was administered by the same E who had administered the pretest. The control group was given no instruction, only the posttest.

The following hypotheses were tested in this study. They were placed in null form for purpose of statistical analysis.

**Hypothesis 1.** No significant differences on the scores of the Draw-A-Man Test will be displayed between children who have been given instruction by teacher models and children in the control group who were given no instruction.

**Hypothesis 2.** No significant differences will be displayed between the boys' scores on the Draw-A-Man Test and the girls' scores on the test.

**Hypothesis 3.** No significant differences on the score of the Draw-A-Man Test will be displayed between those children who have been tested by female experimenters and those who have been tested by male experimenters.

**Hypothesis 4.** No significant differences on the scores of the Draw-A-Man Test will be displayed by children instructed by same-sex teacher models and children instructed by opposite-sex teacher models.
Hypothesis 5. No significant differences on the score of the Draw-A-Man Test will be displayed between children tested by experimenters of the same sex and children tested by experimenters of the opposite sex.

Hypothesis 6. No significant differences on the scores of the Draw-A-Man Test will be displayed between the children who are given instruction by teacher models of the same sex and tested by E's of the same sex and the children who are given instruction by teacher models of the opposite sex and tested by E's of the opposite sex.

Findings from the unweighted cell analysis of variance of the pretest revealed no significant differences among the groups. Thus, differences on the posttest were attributed to the manipulation of the study's major variables.

Findings from the unweighted cell analysis of variance of the posttest results revealed two significant effects. Specifically, the model condition main effect ($F = 3.47; df 2/45; p < .05$), and the sex of S by model condition interaction effect ($F = 3.37; df 2/45; p < .05$) were observed to be significant.

A plotting of the cell means of the sex of S by model condition interaction revealed that the model condition had relatively little effect on the scores of
the male S's. However, there was a trend for girls to do better with instruction from male teacher models than with female teacher models though this trend did not reach significance (Figure 2). A significant difference between female S's given instruction from male teacher models and the females in the control group was demonstrated at the .05 level of confidence. This finding was in contrast to the prediction that same-sex pairings of teacher and student would produce higher scores.

The main effect of model condition was observed to be significant at the .95 level of confidence. A compound contrast was conducted between the combined mean of male and female teacher models and the overall control group mean. This was significant at the .05 level, thus confirming the first hypothesis that children given instruction would perform better than children given no instruction. Basically, this difference was attributed to the females since the model condition had limited impact on the males.

Hypothesis 1 was rejected by the findings, with the qualification that the significance was attributed to the scores of the female S's. Hypotheses 2, 3, 4, 5, and 6 failed to be rejected thus opening to question the assumptions underlying the study.
Implications

Basically this study did not support the position that same-sex pairings of teachers and students would produce optimal learning conditions. Though the sample was small, producing small and unequal cells to be analyzed, the direction of the trends in the sex of S and model condition interactions were not in favor of the hypothesis. In fact, with girls, results appeared to be more in line with the cross-sex effect which has been found in previous studies utilizing social reinforcement with six-year-old children (Stevenson, 1961; Odom, 1966). These studies investigated the effects of the sex of experimenters under social reinforcement conditions with the sex of subjects. In the above mentioned studies, cross-sex effect was displayed for male and female S's, while this study demonstrated it only for females.

Since the teacher models were in the classrooms for only an hour and a half per day for two weeks prior to the administration of instruction, it is likely that their effect on children could have been more of an experimenter than that of a teacher. Caution should be in order, however, since the cross-sex effect was not demonstrated for boys. In addition, girls performing better for male teacher models than female teacher models was only a trend and was not significant. This
same finding was made by Rosenblith (1959) when she attempted to determine if sex of the model affected imitation of the model by the child. In that study, kindergarten age children performed better for male models, though the results were significant only for girls.

Since teacher models in the present study were instructed to perform in socially reinforcing ways, it is noteworthy to attend to the findings of Hill and Stevenson (1965). They studied the effects of social reinforcement versus nonreinforcement and sex of E on the performance of adolescent girls. They found a consistent tendency for girls to perform at a higher level for E's of the opposite sex under social reinforcement conditions but to perform at a higher level for E's of the same sex under nonreinforcement conditions. Their reanalysis of three previous studies, one of which was with six year old children, produced the same pattern for both boys and girls (Stevenson, 1961).

The cross-sex trend at this age level is more consistent with Freudian theory than social learning theory. Girls responding to the male teacher model with the highest intensity underscores the Electra response.

During the intervention period of this study, male teacher models reported that many girls clung and frequently touched them physically. They also reported that
the girls would situate themselves within a close proximity of the teacher model. This reaction was not displayed by male or female S's with the female teacher models.

The fact that boys did not exhibit this same cross-sex effect is not readily explainable, yet closer examination of Freudian theory may provide clues. Freud places a much greater emphasis on anaclitic identification for the female child. As stated earlier in Chapter II, anaclitic identification is the process of attempting to win approval from love objects. Emulation of the love object being one way of winning approval. Though Freud does posit the psycho-sexual identification for females in the form of the Electra complex, his major emphasis for female identification is anaclitic.

For both male and female children of this age, the sexual orientation is toward adults of the opposite sex. Yet, for the female child, attempts to win approval would be at the forefront of motivation rather than sexual urges. Thus, a reinforcing adult male could from a Freudian interpretation produce a high level of motivation to please in young girls.

The fact that boys did not perform better for females to produce the cross-sex effect can partially be
explained in light of the design. All of the classrooms had a regular classroom teacher who was female. If any transference from mother to teacher occurred, the males would more likely identify with the regular classroom teacher. Usually the adults in a typical day-care center (and these were typical in this respect) are female. Consequently, if the male child were to respond intensely to an adult female teacher, it is much more likely that that female adult would be one with whom he was more familiar. Though this is a feasible explanation, it must be remembered that the cross-sex effect for both boys and girls has been demonstrated in other studies using socially reinforcing experimenters. It, therefore, opens to question the representativeness of the boys in the sample.

The fact that the same-sex pairings did not produce higher scores as social learning theory would suggest is more explainable in light of the methodology of the study. It is well substantiated that children of this age are motivated to perform in ways that they perceive as sex-appropriate and a child's perception of sex appropriateness of activities is greatly influenced by observation of adults. Since the children in this study attended day care centers regularly, it is probable that they had already associated "teacher" with "female" and
to counter that perception the researcher believes a much longer period of intervention would be necessary.

It would appear that to truly test out the hypothesis that boys would do better in school if they were taught by male teachers, it would be necessary not only for the male teacher to remain with a class over an extended period of time, but just as importantly for large numbers of men teachers to be present in an entire school. One male teacher in a school is an anomaly and since children do learn through observation, it would seem necessary to have many men in this role if the stereotype is to be combated with any seriousness.

Although the design of the study provided controls over many factors, some methodological problems were apparent.

1. Nearly twenty-one percent of the S's were lost through attrition. The major reason for the attrition was summer vacation. Since this was a chance factor with boys being equally likely to go on vacation as girls, and children from one school equally likely to go as children from another school, this was not considered a methodological hinderance. However, it did diminish the total sample size considerably from seventy-two to fifty-seven children.
2. The sample size was extremely small for a $2 \times 2 \times 3$ factorial design. The cells were small and unequal -- ranging from two to eight per cell. The use of unweighted cell averages to perform the analysis of variance most likely diminished the efficiency of the design.

3. The intervention period was of short duration. This increased the possibility of the teacher models having more of an "experimenter" effect rather than a "teacher" effect.

4. Each class had a female teacher in the classroom on a regular basis, thus further reducing the "teacher" effect.

Suggestions for Future Research

An obvious detriment to the study was the small sample size. To avoid the high attrition rate, it would be advisable for anyone attempting to conduct research with children in day-care centers to avoid the summer months. The use of a larger number of centers would be another way of increasing the $N$, but this would be more costly for the researcher.

The use of teacher models rather than teachers was a compromise since male teachers are so scarce. If teacher models would be used in a future study of this kind, it seems essential that the teacher model be the only adult in the classroom. The fact that each teacher
model had a female teacher in charge when they were not present limits the generalizability to teachers, as well as producing a certain confounding of the sex of teacher model factor.

The length of intervention would need to be increased to enable children to form a relationship with the teacher model. In fact, the strongest test of the hypotheses of major interest to this study would probably be to conduct research in a field setting where male teachers are numerous. More research obviously needs to be done to determine the causative factors of the differential achievement level of boys and girls in the early years.
APPENDIX A

Instruction Given By Teacher Models
After the child has been seated in the testing area, the teacher model will say:

"Do you remember when a man/woman came a while back and had you draw a picture of a man, a picture of a woman and then a picture of yourself? Well, he/she is here again today and is going to ask you to do it again. He/she wants to find out how good all the boys and girls at our school can draw people. -- Before you draw for him/her, we are going to do some practicing. I am going to help you practice because I want you to do a really good job! Which would you rather practice drawing, a man or a woman? (Let child choose) Before we begin practicing, I want you to look at this picture of a man/woman and name all the things you see. -- Let's start with the head."

Point to every detail on the man/woman, asking "What is this? "Be sure to include eyes, eyelashes, eyebrows, nose, mouth, ears, hair, neck, mouth, shoulders, arms, hands, fingers, body, clothing, legs, shoes, and feet. If the child does not know names of detailed parts, then they should be named for the child.

After the child has named all the parts, the more immature drawing will be taken out and the teacher model will say:

"Now I want you to look at this drawing and tell me all the ways this picture is different from this one that we just looked at. Look at the head, how is this head different from this head?"

If the child does not recognize differences, they should be pointed out. Example: (Point to eyebrows) "What are these? (Child responds -- eyebrows). Does this other one have eyebrows? (Child responds negative). Well, that's one way they are different. Can you tell me another way they are different?" --

Proceed with entire body, pointing out the differences, if the child does not.

When this has been completed, set the immature drawing face down, aside. Leave the more mature drawing in sight, and say:
"Now we are going to practice, you are going to draw a man/woman and I am going to help you. I don't expect you to draw a man/woman just like this but we are going to keep this picture out so we can remember all the body parts on our man/woman. Start with the head and try to draw as many parts on the man/woman as you can." We may not finish before the time is up, but don't worry about it, just do the best you can."

If the child asks for assistance, it may be given but only to the extent that the child does the majority of the drawing. The child may ask you to show him how to make eyelashes or fingers, this may be done as long as the child draws the majority of it himself. If the child is not putting the major parts of the body in the drawing, a statement such as, "I think your man/woman needs a neck, this man in this picture has a neck. can you draw a neck?" If the child refuses, do not push. Encourage him to add detail to his drawing when he has finished. Example: "Can you put clothes on your man/woman?" or "Maybe your man/woman should have some fingers on his hands.

The child should be praised for extra detail and should be praised for his drawing at the end. Statements like "I like the way you put a belt on him" or "Those eyelashes make his eyes look more real" are examples.

After the completion of the drawing, or 15 minutes, whichever comes first, say to the child:

"Do you remember I told you that someone was here to ask you to do some drawing? Well, I'm going to take you to him/her now. He/she is going to ask you to draw a man and a woman, but he/she is not going to help you, so, I want you to try to put all the parts on the people you draw that we practiced. It's really important to me that you do a really good job!

Before taking the child to the other experimenter, let the child stand up and stretch and have him flex his fingers and hands.
APPENDIX B

Drawings Utilized During Instruction
APPENDIX C

Letters Asking For Parental Permission
Pat Kennedy, a doctoral student at Ohio State University, will be conducting a research study during the next few weeks. Several day care centers have been asked to participate. The study is intended to examine the effects of instruction of male teacher models vs. instruction of female teacher models on kindergarten age children. A need is being voiced today by many that young children need exposure to both male and female adults in the educational setting. We share this concern and feel it is valuable to assist research efforts that may shed some light on this area.

We have reviewed the study and it meets with our approval. An additional person will be in the classroom for several weeks, but your child's routine and activities will not be interrupted. Though it is impossible to identify all potential risks in a research study, no possible negative effects are foreseen in this study.

To assist in determining the effects of instruction by the teacher model, your child will undergo a short test before and at the end of the study. This is necessary to measure the effects of the instruction that will be individually given to your child after the teacher model has become familiar to your child.

A copy of the findings will be made available upon completion of the data analyses sometime this fall.
If you have any questions concerning the study, you may contact Pat Kennedy at 422-0780 (office) or 262-0641 (home). If the questions you have are not answered to your satisfaction, and you do not wish your child to participate in the testing, please feel free to decline.

Nancy Holtz, Director

I give my permission for my child ________________
to participate in the research study described above.

Signed ____________________
Parent or Legal Guardian
A research study is presently being conducted at Ohio State University on kindergarten age children. In order to test the effects of the study, several day care centers are being asked to participate as control groups. A control group does not receive any treatment, only a test at the beginning of the study and a test at the end. This is a necessary technique in research to measure gains of the group being tested. It provides a yardstick to determine if the treatment or new technique has any real effect. We have been asked to serve as a control group. The test is a simple drawing exercise that will take approximately 5-10 minutes per child. We have reviewed and approved our center's participation and would like to request your cooperation.

Involvement of your child -- Your child will be taken from his room individually and tested on two different occasions.

Involvement of child's records -- None

Involvement of parents -- None

Principal Investigator -- Pat Kennedy, Ph.D. Candidate, Dept. of Early and Middle Childhood Education, Ohio State University

Date of Testing -- Week of July 2 and Week of July 23 or 30th.

______________________________
Director
I give my permission for my child ____________
__________ to participate in the research study
described above.

Signed: ________________
Parent or Legal Guardian


Biber, H., Miller, L. B., and Dyer, J. L. Feminization in preschool, Developmental Psychology, 1972, 7, 86.


Kendall, Earline. We have men on the staff. Young Children, 1972, 27, 358-362.

Kernkamp, E., and Price, E. Coeducation may be a 'no-no' for the six year-old boy. Phi Delta Kappan, 1972, 10, 662-663.


Mendelson, Anna. A young man around the class. *Young Children*, 1972, 27, 281-283.


Preston, Ralph C. Reading achievement of German and American Children. School and Society, 1962, 90, 350-354.


Rosenhan, D., & Greenwald, J. A. The effects of age, sex, and socioeconomic class on responsiveness to two classes of verbal reinforcement. Journal of Personality, 1965, 33, 108-121.

Rubin, Rosalyn. Sex differences in effects of kindergarten attendance on development of school readiness and language skills. Elementary School Journal, 1972, 72, 265-274.

Sciano, Dorothy J. What to do till the male man comes. Childhood Education, 1972, 48, 190-191.


Silverman, I. W., & Waite, S. V. Test anxiety and the effectiveness of social and nonsocial reinforcement in children. Child Development, 1969, 40,


